


FAGoods

Time and Wire Saving Devices


General Catalog

Time and Wire Saving Devices 

Network Devices 

Products for Monitoring and Traceability 

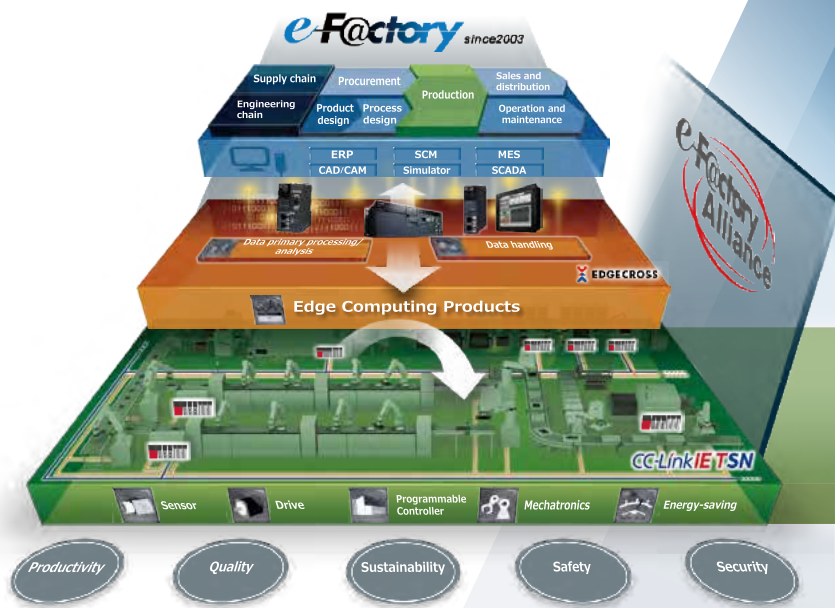
Upgrade Tool Products 

Products for System Maintenance 



2022-23

Creating a safe and
secure control panel



Source: Mitsubishi Electric Corporation

e-F@ctory

Manufacturing can be optimized by analyzing and utilizing the data collected from various devices and equipment connected with IoT in developing, manufacturing, and logistics processes.

Our high technical capability and quality and technique to link FA devices and IT system will offer solutions for next-generation manufacturing such as mass customization, preventive maintenance, and traceability.

Fields of manufacturing are changing and to be changed

Labor-saving will support future manufacturing as the number of workers is decreasing today.

Our products provide five methods for innovative solutions according to fields of manufacturing.



Five methods for smart factory

Time and wire saving devices

01 — Easy wiring for innovative solutions

Network devices

02 — Introduction of small-scale IoT to reform production sites

Products for monitoring and traceability

03 — Visualization (monitoring and diagnosis) of production sites

Upgrade tool products

04 — Upgrading system leading to smart factory

Products for system maintenance

05 — Stable operation for productivity improvement

Time and wire saving devices

Easy wiring for innovative solutions

Our products can offer innovative solutions by reducing wiring work for PLCs (programmable controllers), servo systems, HMIs (Human Machine Interfaces), and computerized numerical controllers (CNCs).



Network devices

Introduction of small-scale IoT to reform production sites


We provide products to use the CC-Link family, SSCNET, or FL-net communication.



Products for monitoring and traceability

Visualization (monitoring and diagnosis) of production sites

Our products and solutions enable monitoring and diagnosis.



Upgrade tool products

Upgrading system leading to smart factory

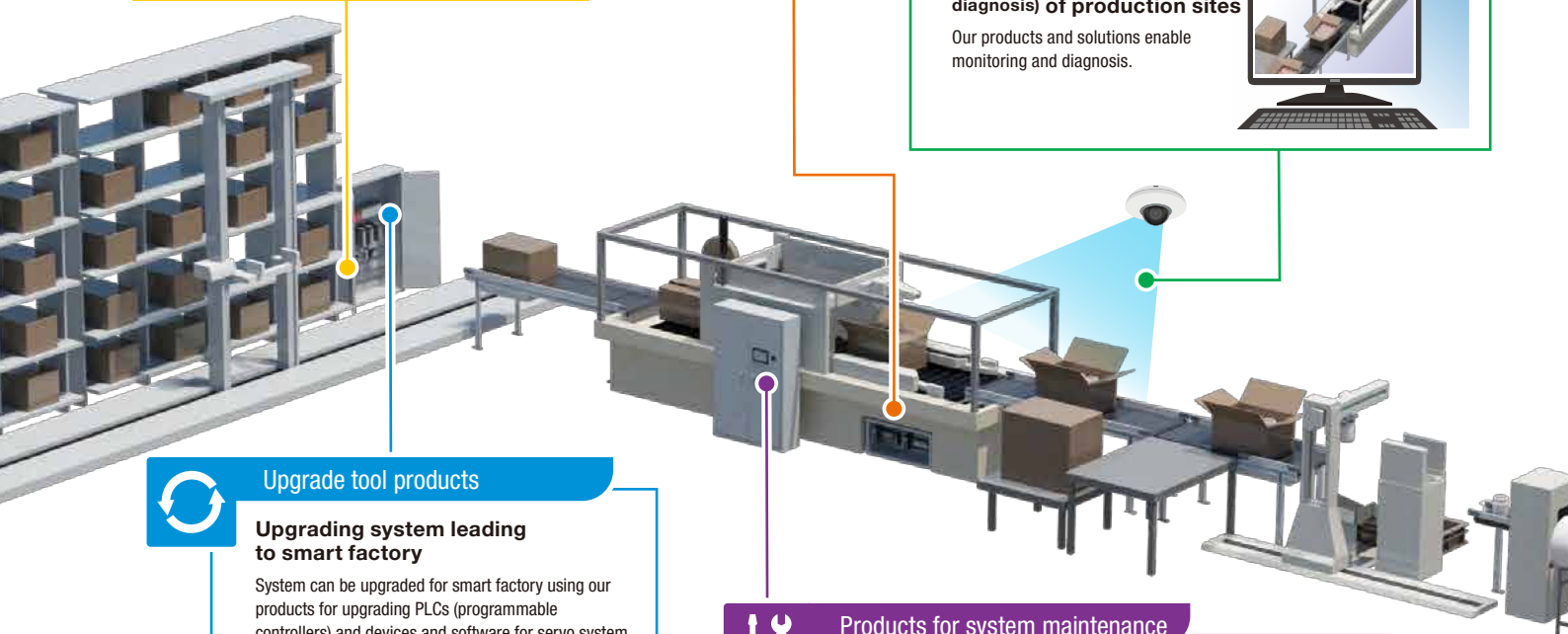
System can be upgraded for smart factory using our products for upgrading PLCs (programmable controllers) and devices and software for servo system.



Products for system maintenance

Stable operation for productivity improvement

We provide products to reduce cost and time for maintenance in production sites.



**Our products
solve your issues.**

Time and wire saving devices

Easy wiring for innovative solutions

Our products can offer innovative solutions by reducing wiring work for Mitsubishi Electric programmable controllers, servo systems, HMIs (GOTs), and computerized numerical controllers (CNCs).

Our products are also available for non-Mitsubishi PLCs.

Taking wiring time due to complicated wiring works

Taking time to check wiring

Taking maintenance time due to retightening the screw or other works

Smaller enclosure size

Reducing wiring inside the control panel to save space and costs

Saving space in the control panel by optimized system configuration

Batch monitoring information from each sensor

Incorporating simple Internet of Things rather than large-scale IoT



Reforming work style by reducing the wiring work

Easy push-in connection



- Reducing wiring work by using push-in connection compared to the screw type (No need for technical skills such as handling a screwdriver or tightening the screws)
- No need for retightening work at delivery or inspection of a panel or devices
- Elimination of risks arising from screw-loosening due to vibration or long-term use

Easy connection with a dedicated cable



Using a dedicated cable enables prior check of pin layout and reduces cost and time for wiring. Labor-saving leads to work style reform.

Different use depending on the application in a variety of lineups

Lineup depending on the connected devices

Optimized configuration with a base unit

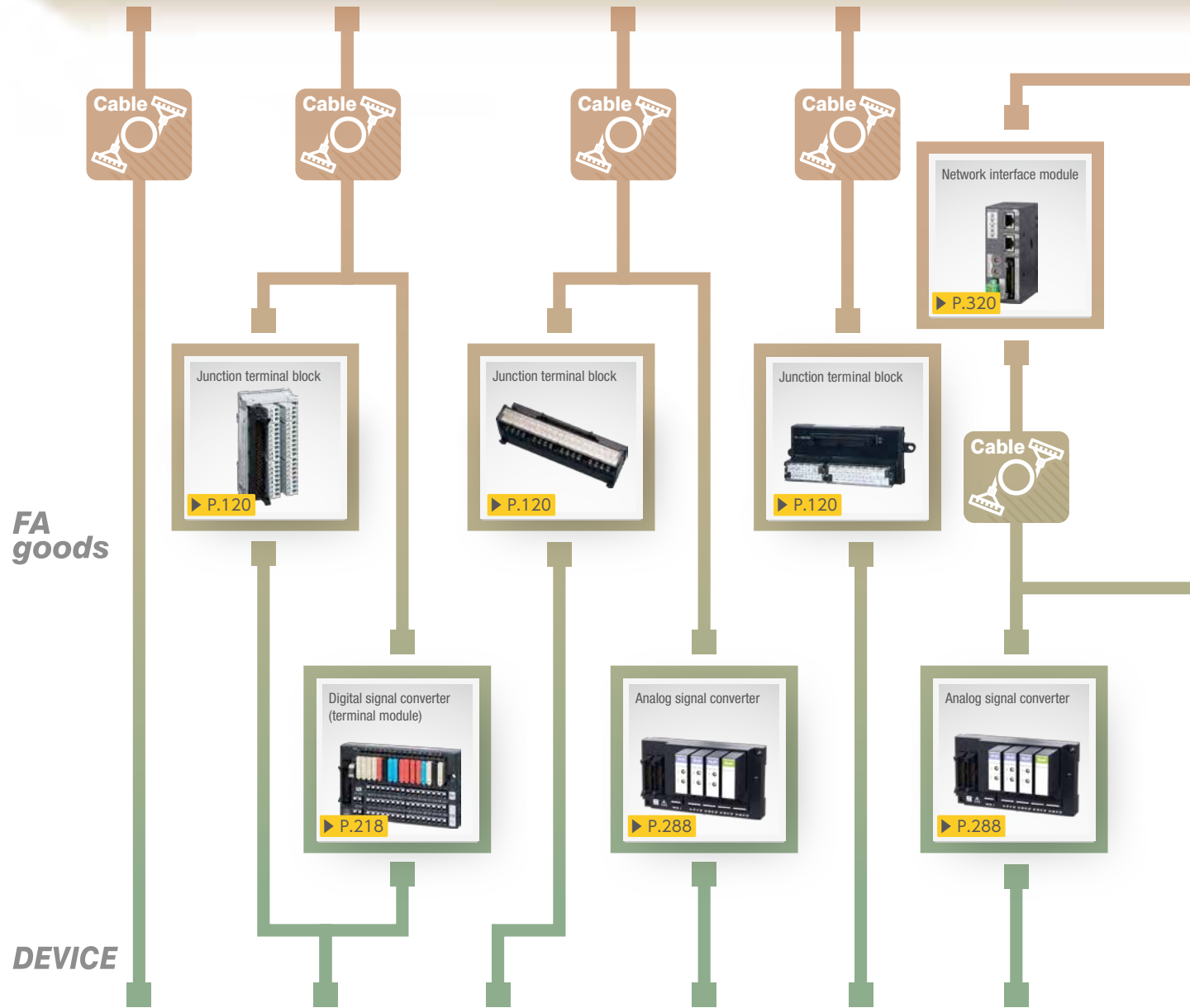
Devices in the system can be connected with one programmable controller module by combining output modules on the base unit.

Implementing "easily collecting device information" and "wiring saving" by connecting a network

Information of electromagnetic switches and sensors (such as thermal, flow, and pressure sensors) can be visualized by simply connecting an analog/digital signal converter with a network interface module. Information can be batch-collected. Wiring and maintenance time can also be reduced because of using a single Ethernet cable.

Configuration diagram

CONTROLLER



| | | | | | |
|-----------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| HMI Computer, etc. | AC/DC magnetic starter DC switch AC/DC limit switch DC pilot lamp AC relay, etc. | Servo amplifier (torque control) Inverter (speed control), etc. | Temperature sensor Humidity sensor Vibration sensor Flow sensor Concentration sensor Pressure sensor Laser distance sensor, etc. | Encoder Pulse generator Servo amplifier, etc. | Temperature sensor Humidity sensor Vibration sensor Flow sensor Concentration sensor Pressure sensor Laser distance sensor, etc. |
|-----------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|



AnyWireASLINK
MODBUS/TCP
Other network

MR-J5 series MR-J4 series



Servo amplifier

GT2000 series GT1000 series



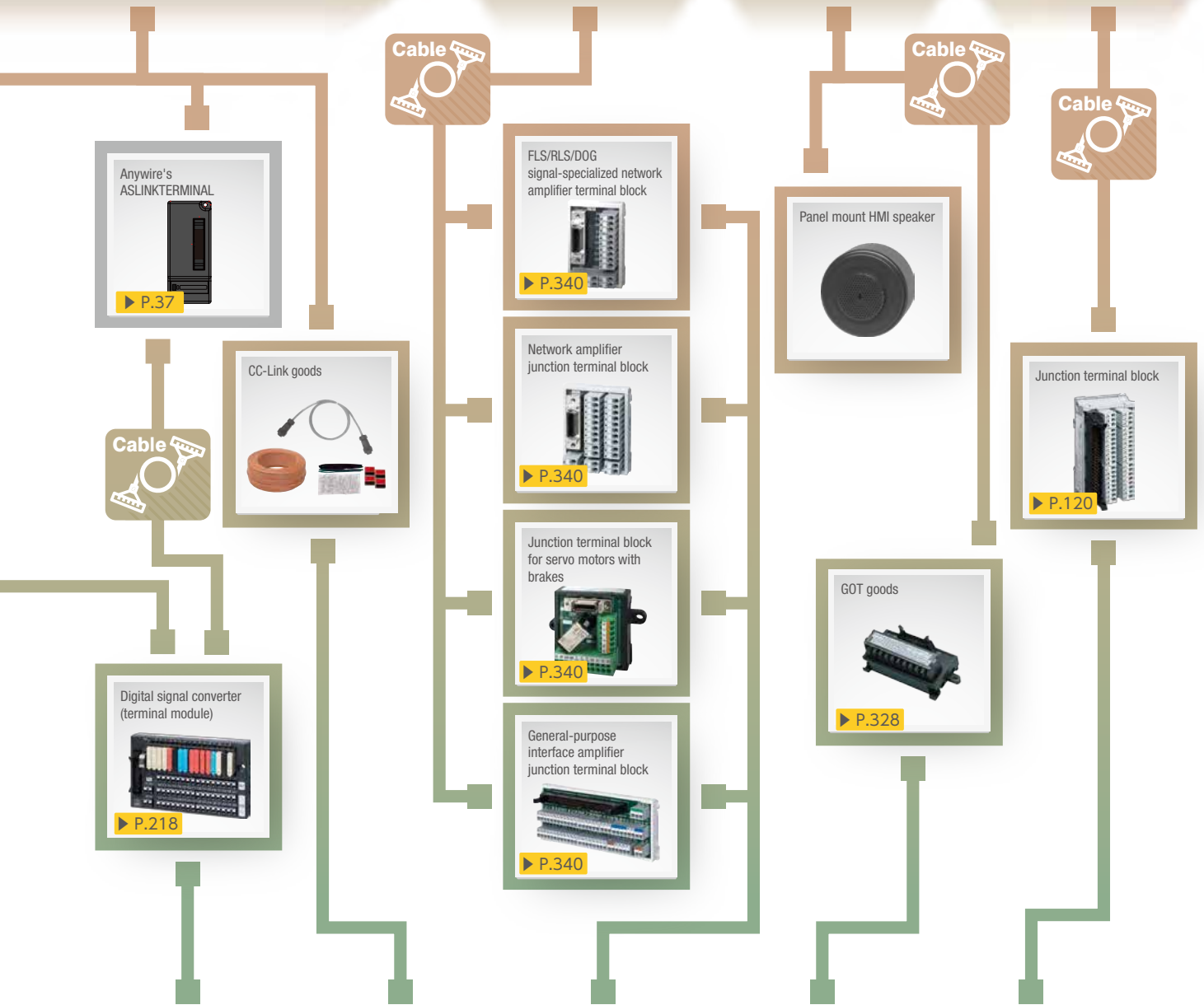
HMI

M800/M80 series



Computerized numerical controller (CNC)

Remote I/O module



AC/DC magnetic starter
DC switch
AC/DC limit switch
DC pilot lamp
AC relay, etc.

Remote I/O module

Sensor
Relay
Pulse generator, etc.

Temperature controller, etc.

AC/DC magnetic starter
DC switch
AC/DC limit switch
DC pilot lamp
AC relay, etc.

Time and wire saving devices

**For programmable controllers,
HMIs, and CNCs**

For programmable controllers, HMIs, and CNCs

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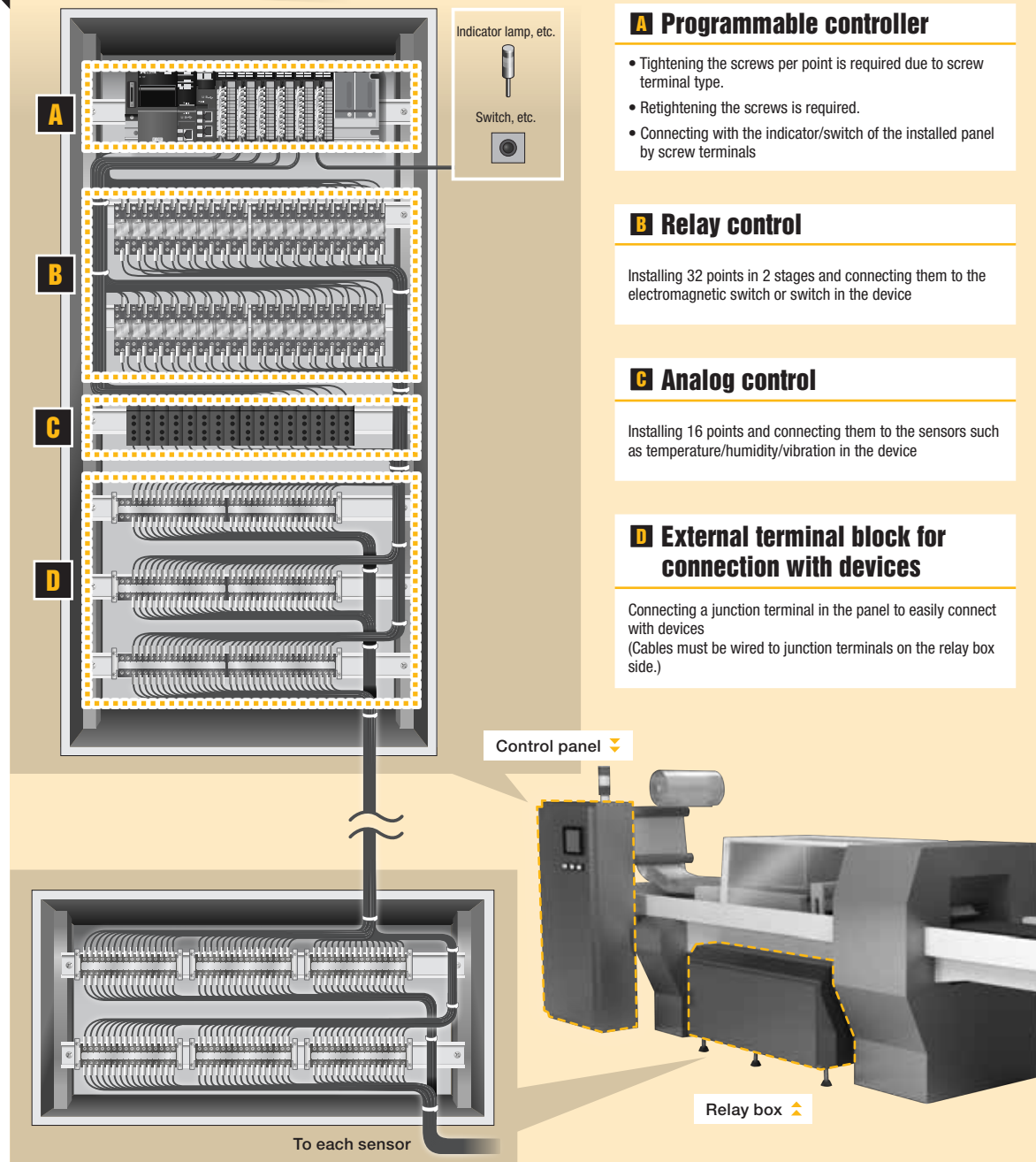
Advantages of using the time and wire saving devices for programmable controllers

Before

Our challenges are reducing wiring work and saving the space inside the panel

- Taking time for the wiring work
- Smaller enclosure size
- Poor maintenance

Conventional method

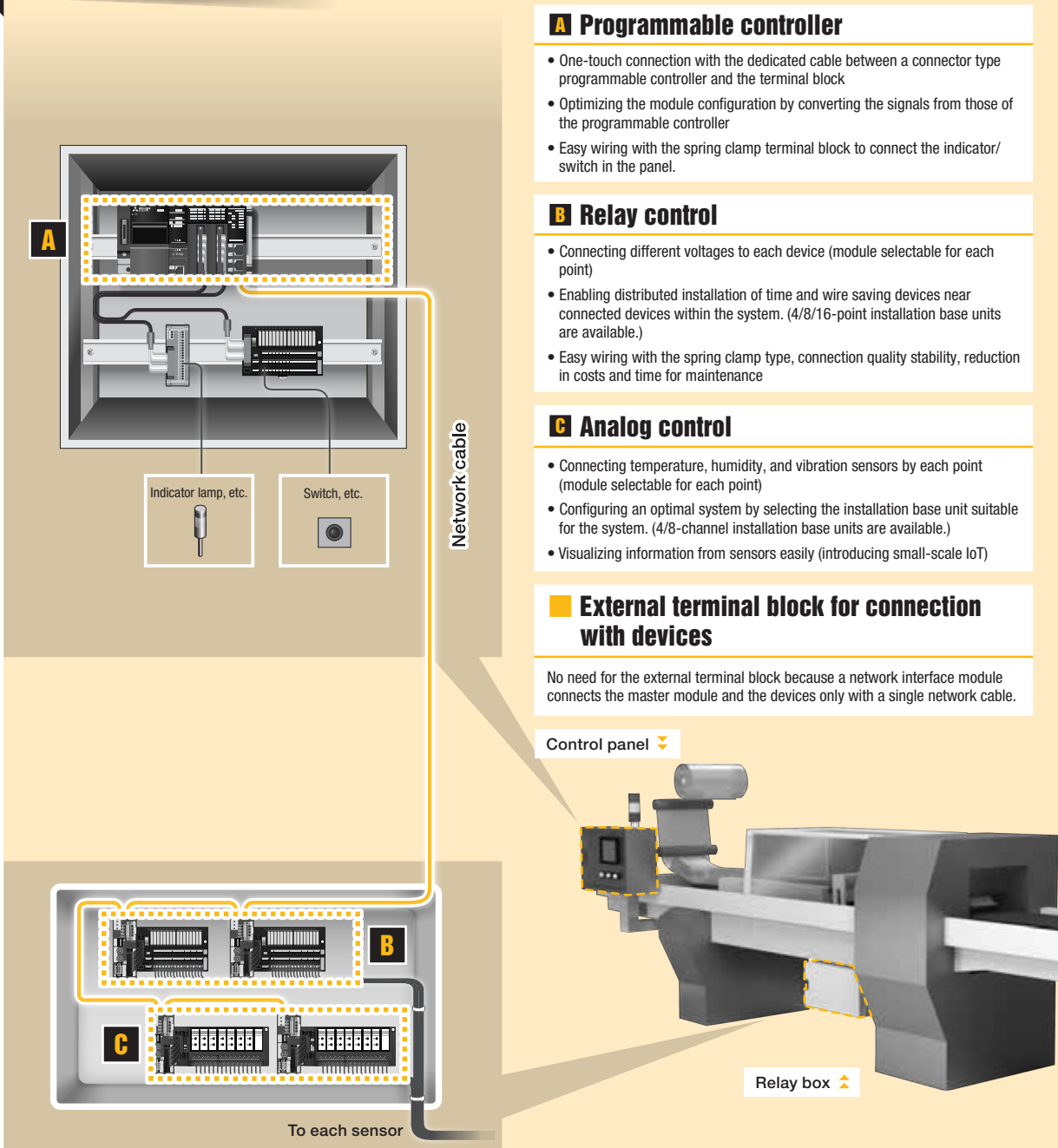


After

Time and wire saving devices solve your issues.

- Simple wiring to a programmable controller using the dedicated cable
- Space saving for the inside of the control panel
- Cost saving by eliminating system configuration waste

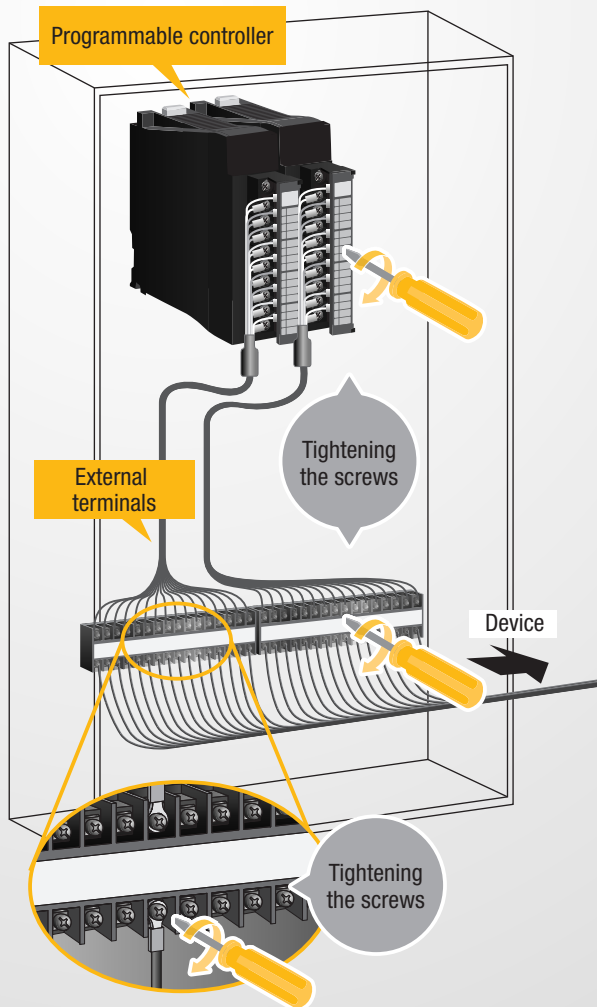
When time and wire saving devices are used



Junction terminal block

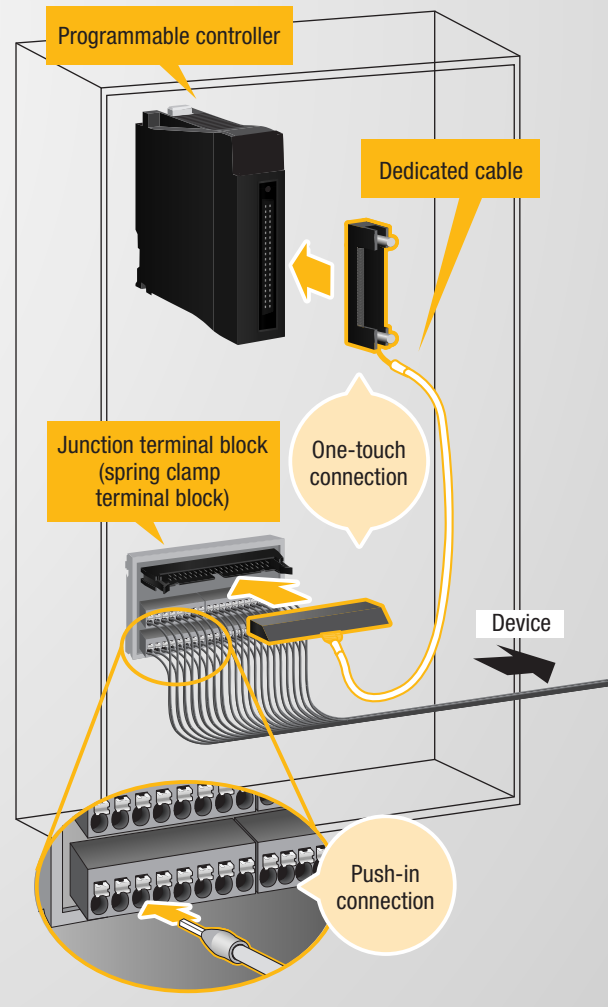
Reforming working style by reducing wiring work using a wide selection.

Before



Retightening the screws is required at maintenance work.

After



- Easy push-in connection
- Retightening the screws is not required at maintenance work

P.13

Optimum connection method

The connection method can be changed to the optimum connection method, such as using the spring clamp terminal block, selected from a wide selection.

P.15

Easy wiring, reducing wiring time

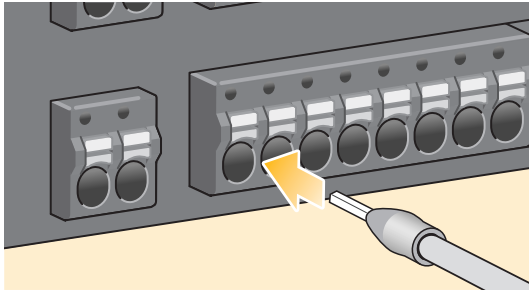
A programmable controller and a junction terminal block can be easily wired using the dedicated cable.

For details, refer to ▶ P.120 to P.217

Optimum connection method

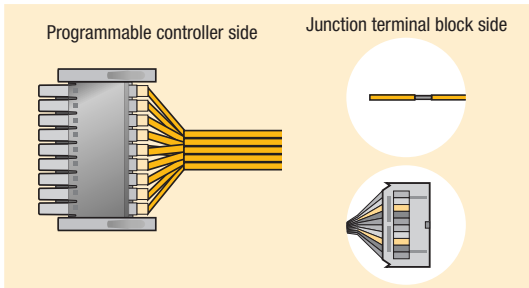
The connection method can be changed to the optimum connection method, such as using the spring clamp terminal block, selected from a wide selection. (Refer to P.20 to P.21 "Junction terminal blocks (connection method)")

Feature of connection method



Spring clamp terminal block

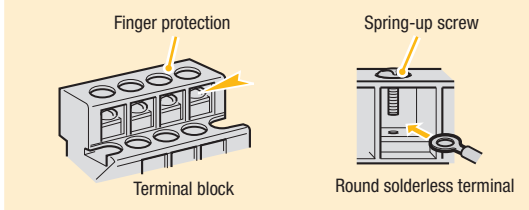
- Push-in connection does not require screwdrivers. (Significant reduction for wiring work)
- Reliable connections (No need for the screw tightening skill)
- No need for screw retightening (easier maintenance)



Cables with spring clamp terminal block

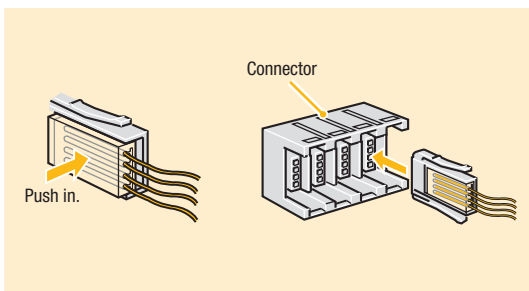
- Wiring work for the programmable controller modules with a spring clamp terminal block is reduced by 99%.
- Cables do not need to be terminated or wired to the terminal block individually because the ferrules have already been attached to the cables.
- Cables are selectable by the type (discrete cable type or connector type), ampere capacity, and number of pins.

(Example) Spring-up screw type



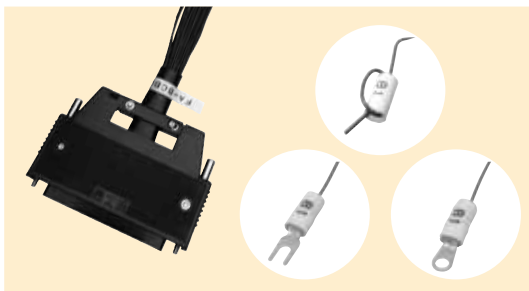
Screw terminal block

- Easy wiring with round terminals by falling prevention screw mechanism
- Electric shock prevention by a finger protection
- M3.5 screw type supports thick wires.



e-CON, one-touch connector

- No need for stripping wires



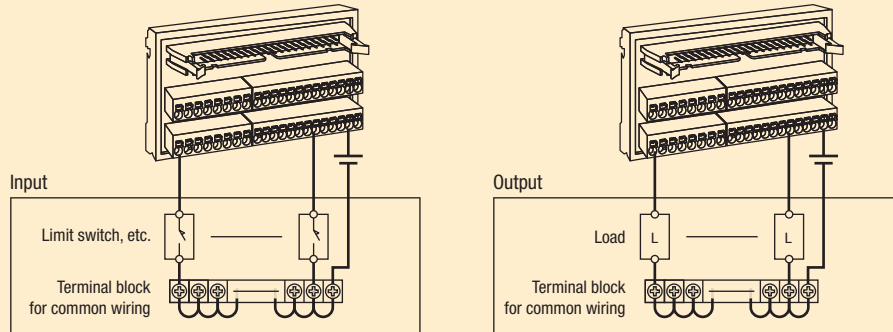
Discrete cable (device directly connected)

- Directly connecting to a device is available.
- Selectable from unprocessed solderless terminals, Y-shaped solderless terminals, or round solderless terminals
- Available for non-Mitsubishi PLCs

Connection method according to device specifications

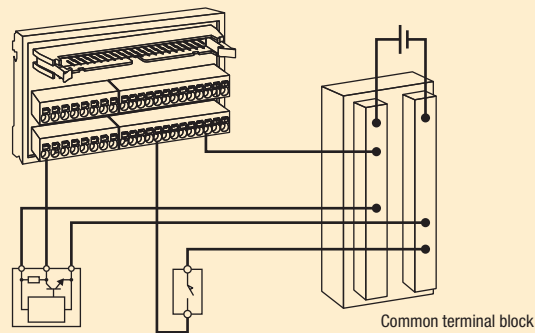
1-wire type

A terminal block is connected to a limit switch or load using one wire. However, a common terminal is required.



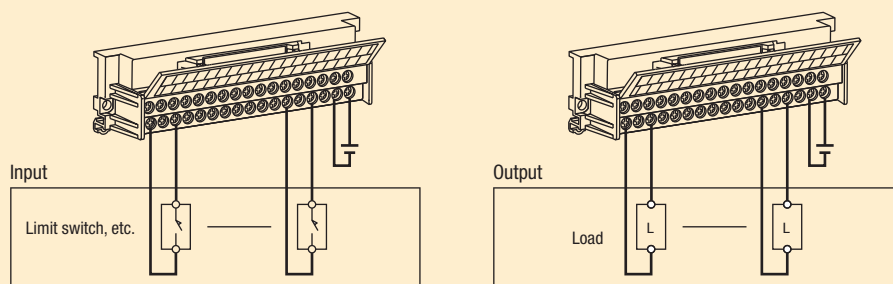
1-wire type + common terminal block

2-wire or 3-wire type is available with the use of 1-wire type junction terminal block.



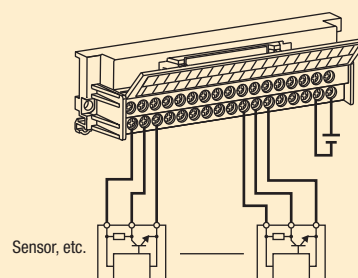
2-wire type

A terminal block is connected to a limit switch or load using two wires. Since a terminal block for the common wiring is not required, switches or loads can be installed at a distance from one another. (This can be used as 1-wire type.)



3-wire type

A terminal block is connected to sensors using three wires. Since a terminal block for the common wiring is not required, sensors can be installed at a distance from one another. (This can be used as 1-wire type or 2-wire type.)



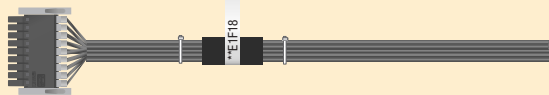
For details, refer to ▶ P.120 to P.217

Easy wiring, reducing wiring time

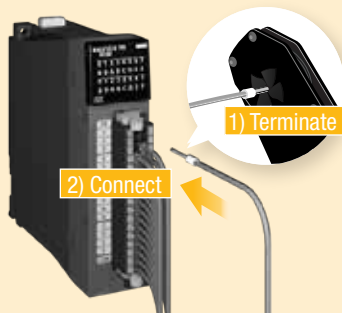
Dedicated cables and junction terminal blocks applicable to each module are available so that optimum system can be configured and wiring work can be reduced by one-touch connection between the programmable controller and the junction terminal block.

We provide dedicated cables such as the cable for terminal block module, cables with shielded and a ferrite core to reduce noise, and the cable for the assembled positioning module to easily configure the system.

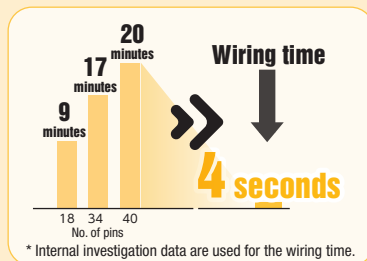
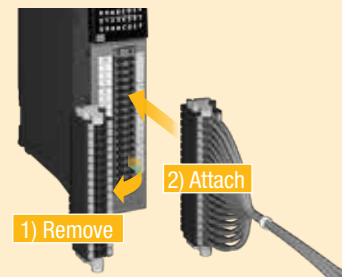
Cable with spring clamp terminal block



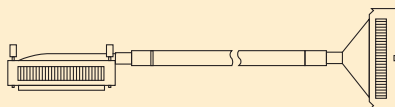
Before Wire ends terminated / wires connected one by one



After Just remove and attach the cable with spring clamp terminal block

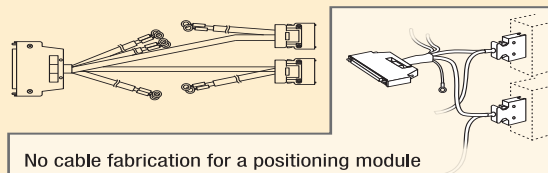


Cable with connectors



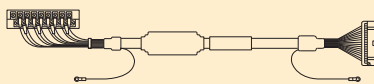
Connectors (FCN, MIL, or D-Sub) according to the programmable controller are available.

Cable for assembled positioning module

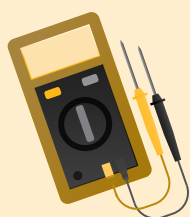
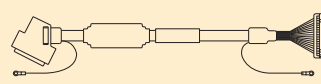


No cable fabrication for a positioning module is required.

Cable with screw terminal block



Cables with shielded and a ferrite core



No need for wiring check

No need for wiring check

Dedicated cables have already been assembled. Wiring check per point, which is required for fabricated cables, is not required.



Cable length customization

The cable length can be customized. (For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

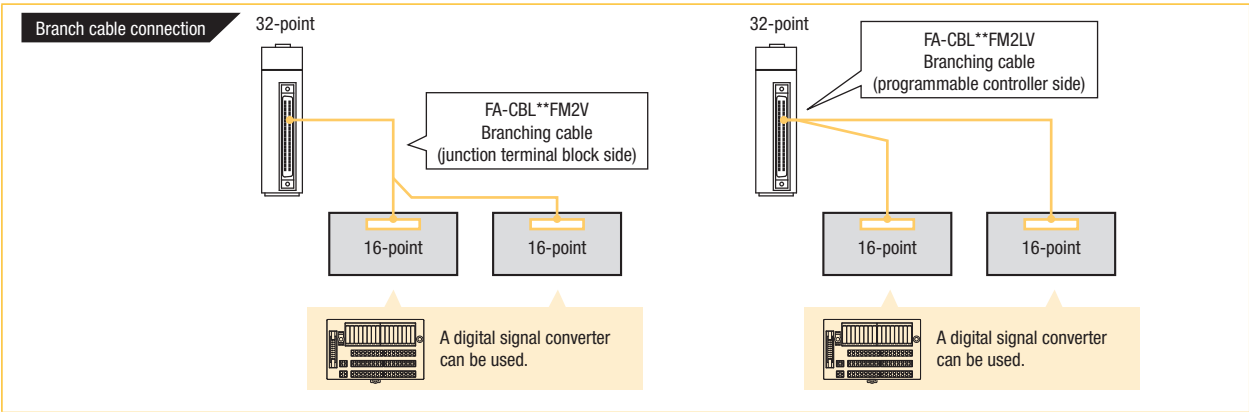
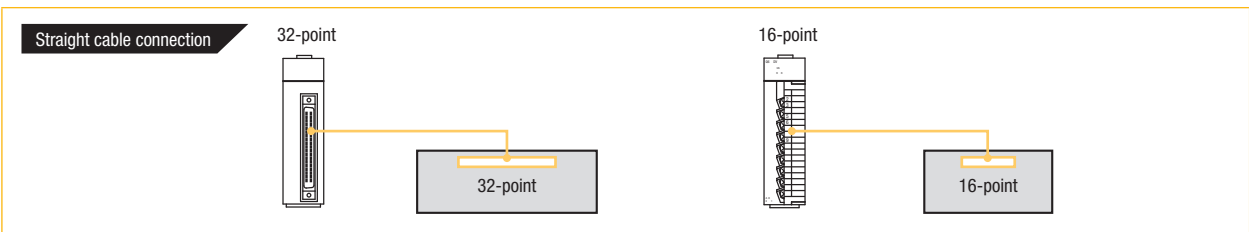
Dedicated cables and junction terminal blocks for each module

For I/O, analog, thermocouple, RTD, and temperature control modules

For the I/O module, signals of the 32-point module can be branched into two 16-point modules.

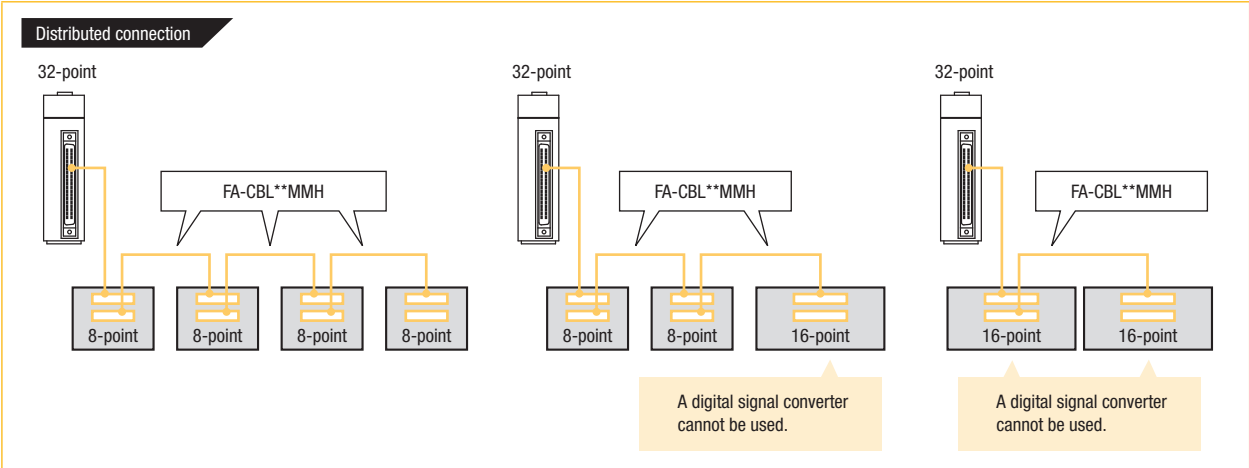
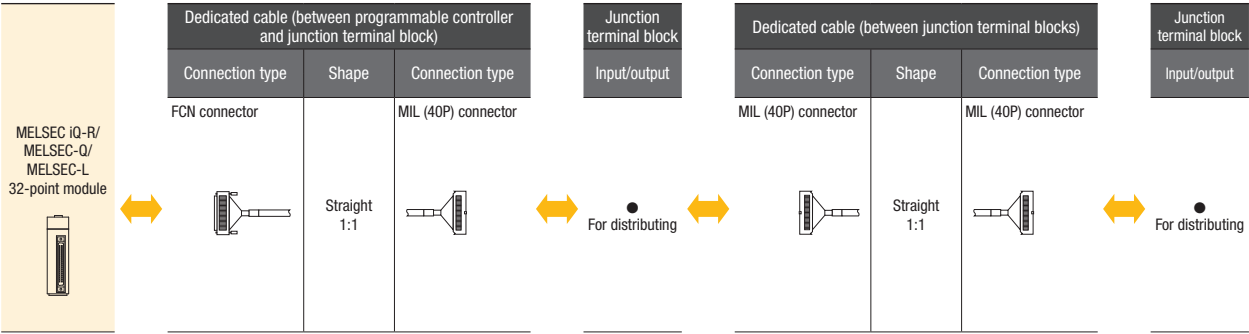
| Programmable controller | Dedicated cable | | | | Junction terminal block | | | | | |
|-------------------------------------------------------------------------|-----------------------------|-----------------------------|-----------------|----------------|-------------------------|---------------------|------------------------|---------------------|---------------------|---------------------|
| | Connection type | Shape | Connection type | | Input/output | Analog/thermocouple | RTD/high-speed counter | Temperature control | Connection type | |
| MELSEC iQ-R MELSEC-Q MELSEC-L non-Mitsubishi PLC | Spring clamp terminal block | Straight 1:1 | | MIL (20P) | • | | | | Spring clamp, screw | |
| | | Straight 1:1 | | Discrete cable | General-purpose | | | | | Spring clamp, screw |
| | | Branch 1:2 | | MIL (20P) × 2 | • | | | | Spring clamp, screw | |
| | FCN connector | Straight 1:1 | | MIL (40P) | • | • | • | | Spring clamp, screw | |
| | | Straight 1:1 | | Discrete cable | General-purpose | | | | | Spring clamp, screw |
| | | Branch 1:2 | | MIL (20P) × 2 | • | | | | Spring clamp, screw | |
| | D-Sub connector | Straight 1:1 | | MIL (40P) | • | • | • | | | |
| | | Straight 1:1 | | Discrete cable | General-purpose | | | | | Spring clamp, screw |
| | | Branch 1:2 | | MIL (20P) × 2 | • | | | | Spring clamp, screw | |
| | Screw terminal block | Straight 1:1 | | MIL (20P) | • | • | | • | Spring clamp, screw | |
| | | Discrete cable | | MIL (20P) | • | | | | Spring clamp, screw | |
| | MELSEC iQ-F MELSEC-F | Spring clamp terminal block | Straight 1:1 | | MIL (20P) | • | | | | Spring clamp, screw |
| Straight 1:1 | | | | Discrete cable | General-purpose | | | | | Spring clamp, screw |
| MIL (20P) | | | MIL (20P) | • | | | | Spring clamp, screw | | |
| MIL (20P) × 2 | | | MIL (40P) | • | | | | Spring clamp, screw | | |
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic CC-Link | Spring clamp terminal block | Straight 1:1 | | MIL (20P) | • | | | | Spring clamp, screw | |
| | | Straight 1:1 | | Discrete cable | General-purpose | | | | | Spring clamp, screw |
| | | Branch 1:2 | | MIL (20P) × 2 | • | | | | Spring clamp, screw | |
| | FCN (40P) | Straight 1:1 | | MIL (40P) | • | | | | Spring clamp, screw | |
| | | Straight 1:1 | | Discrete cable | General-purpose | | | | | Spring clamp, screw |
| | MIL (20P/40P) | Straight 1:1 | | MIL (20P/40P) | • | | | | Spring clamp, screw | |
| | | | | MIL (20P/40P) | • | | | | Spring clamp, screw | |
| Discrete cable | Straight 1:1 | | MIL (20P) | • | | | | Spring clamp, screw | | |

For details, refer to ▶ P.120 to P.217



Distributed installation of I/O module

Signals of 32-point module can be distributed to four modules maximum (8 points × 4 modules)



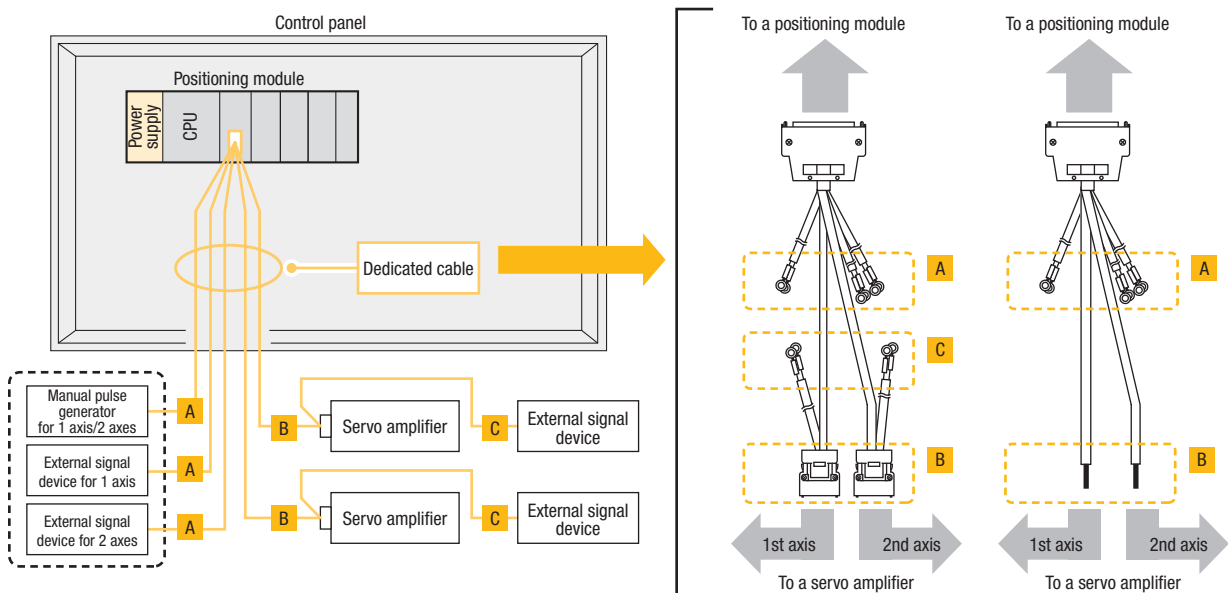
For positioning modules

Wiring for a positioning module that requires complicated processing can be easily connected to a servo amplifier using the assembled cable.

1 When directly connecting external signal device of the positioning module

| Programmable controller | Connection method | Dedicated cable | | Connected device |
|-------------------------|----------------------------|-----------------|-----------------|--------------------------------------------|
| | | Connection type | Connection type | |
| Positioning module | Cable (directly connected) | | | Manual pulse generator External signals |
| | | | | Servo amplifier |
| | | | | External signals |
| | | | | Manual pulse generator External signals |
| | | | | Servo amplifier |

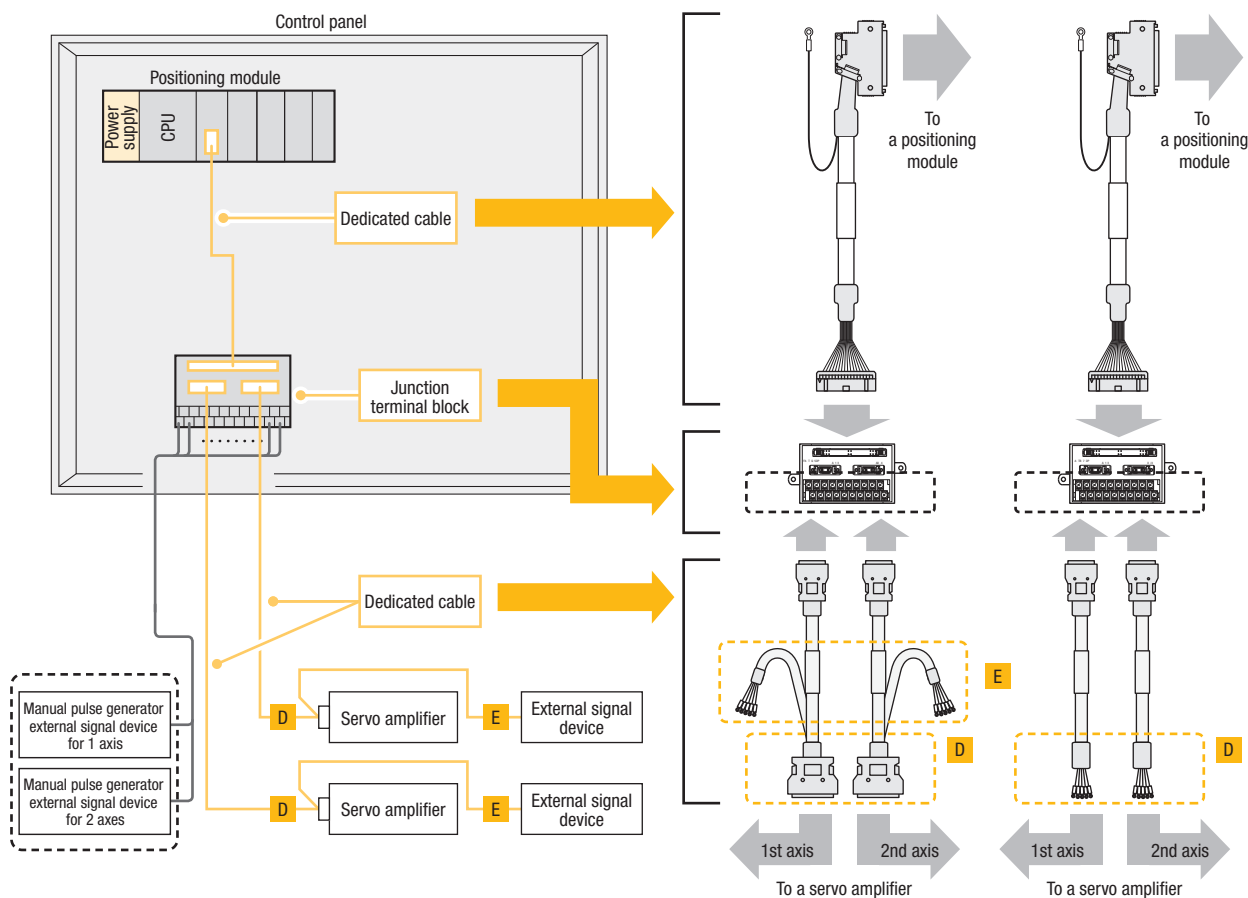
*: A junction terminal block for general-purpose interface servo amplifiers (DG2SV1TB) can be used depending on the servo amplifier used. [For details, refer to ► P.358.](#)



2 When connecting an external signal device and a servo amplifier at the positioning module side with the junction terminal block

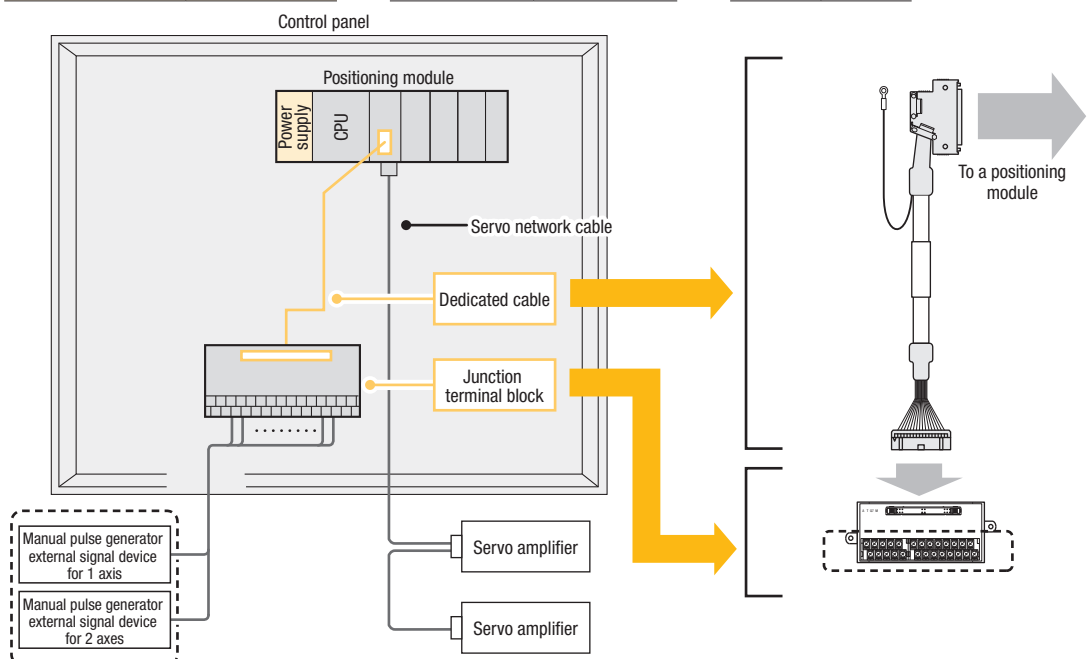
| Programmable controller | Connection method | Dedicated cable | | Junction terminal block | Dedicated cable | | Connected device |
|-------------------------|------------------------------|-----------------|-----------------|-------------------------|-----------------|-----------------|---------------------------------------------------|
| | | Connection type | Connection type | | Connection type | Connection type | |
| Positioning module | Junction terminal block type | | | | | | Manual pulse generator External signals |
| | | | | | | | External signals |
| | | | | Connector | | | General-purpose stepping motor Servo amplifier |
| | | | | Terminal block | - | - | Manual pulse generator External signals |

For details, refer to ► P.120 to P.217

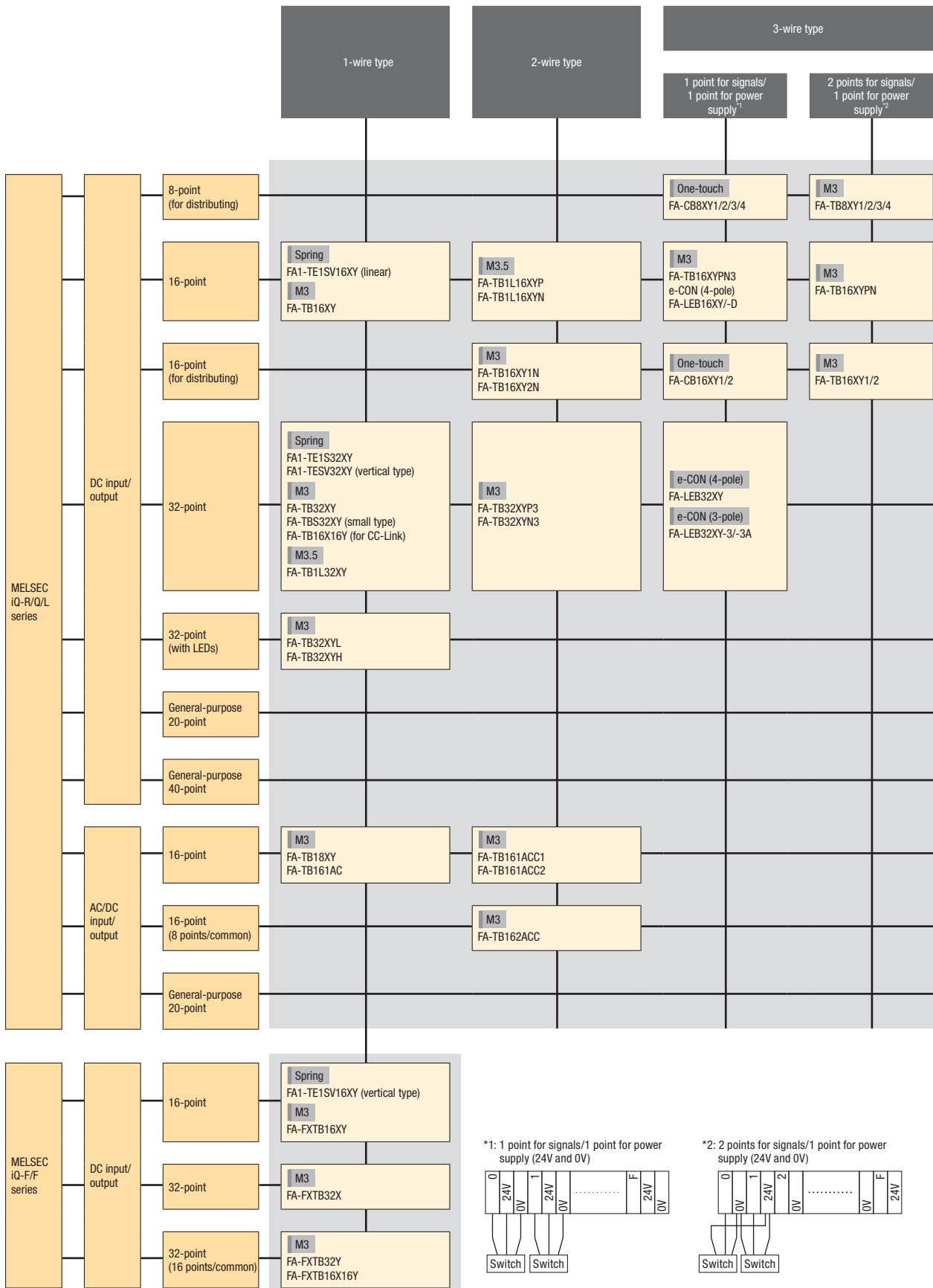


3 When connecting an external signal device at the positioning module side with the junction terminal block (connecting a servo amplifier over the servo network)

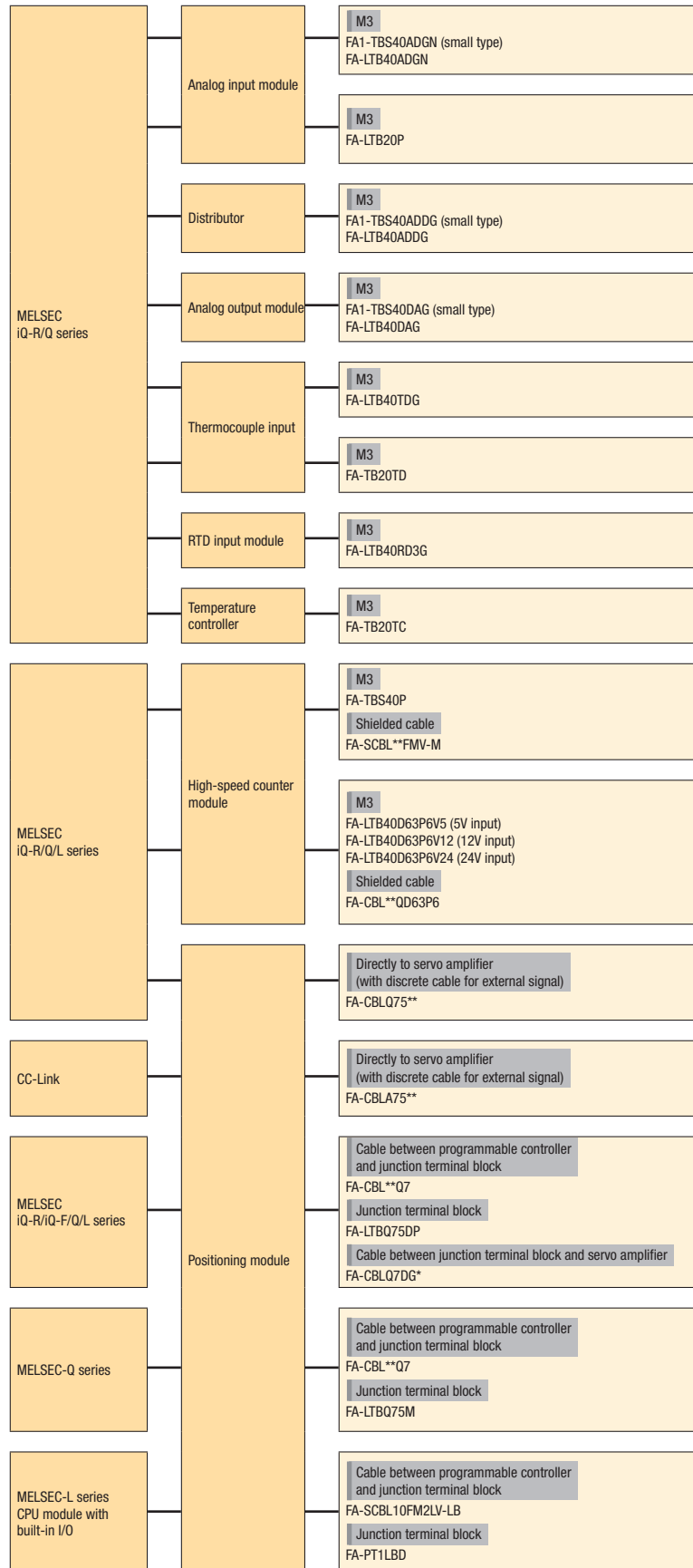
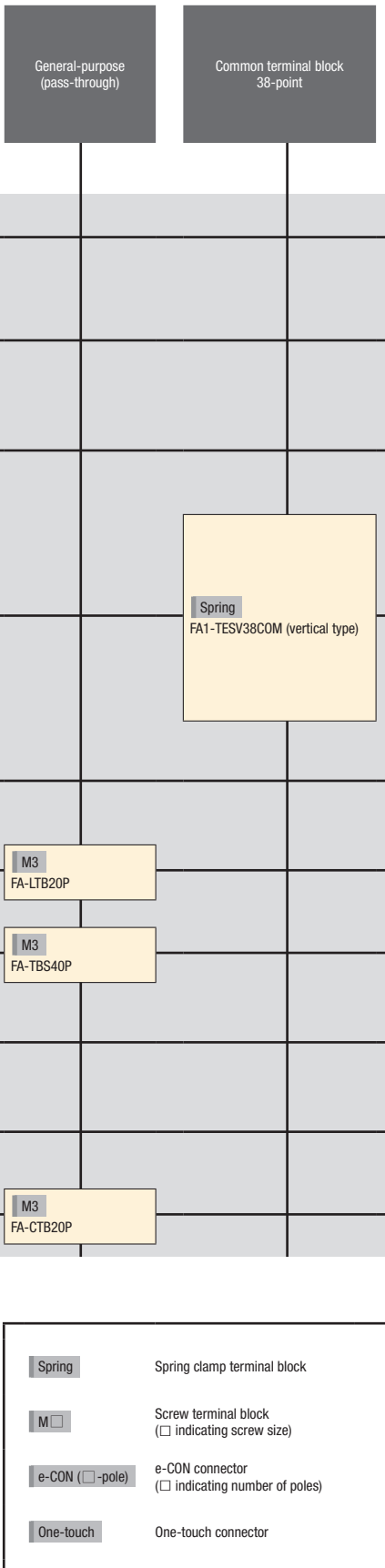
| Programmable controller | Connection method | Dedicated cable | | Junction terminal block |
|---------------------------------------------------------------|------------------------------|-----------------|-----------------|-------------------------|
| | | Connection type | Connection type | |
| Servo amplifier, servo network connection, positioning module | Junction terminal block type | | | |



Junction terminal blocks (connection method)



For details, refer to ▶ P.120 to P.217

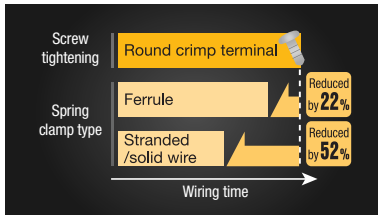


Selection using a junction terminal block (spring clamp terminal type)

The push-in connection without tightening screws reduces wiring work and maintenance work due to retightening screws.

Features of spring clamp terminal block

Easy wiring



Wiring time can be significantly reduced by push-in connection.

*: Calculated by comparing the time taken by non-experts with two years of experience (Data sourced from Japan Switchboard & control system Industries Association)

Stable connection



Screws are vibration resistant. Uniform quality is guaranteed for wiring since no special skills are required.

Less maintenance



Screw tightening during maintenance is not required, reducing work load of workers. Rewiring work is also facilitated by push-in connection.

Selection using a 32-point connector module

| 32-point connector module | Connection cable | Junction terminal block | Digital signal converter | | | | | | | | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------|--------------------------|--------------------|------------------------|----------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------|--|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------|----------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------|----------|--|
| <table border="1"> <thead> <tr> <th>Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC iQ-R series</td> </tr> <tr> <td>RY40NT5P-TS, etc.</td> </tr> <tr> <td>MELSEC iQ-F series</td> </tr> <tr> <td>FX5UC-32MT/DS-TS, etc.</td> </tr> <tr> <td>CC-Link IE TSN</td> </tr> <tr> <td>NZ2GN2S1-32D, etc.</td> </tr> </tbody> </table> | Model | MELSEC iQ-R series | RY40NT5P-TS, etc. | MELSEC iQ-F series | FX5UC-32MT/DS-TS, etc. | CC-Link IE TSN | NZ2GN2S1-32D, etc. | <table border="1"> <thead> <tr> <th>Spring clamp terminal block</th> <th>MIL 20P</th> </tr> </thead> <tbody> <tr> <td></td> <td>× 2</td> </tr> </tbody> </table> <p>FA*-CB1L**EM2F34</p> <p>The cable length can be customized.</p> | Spring clamp terminal block | MIL 20P | | × 2 | <table border="1"> <thead> <tr> <th>I/O module</th> <th>Spring clamp terminal block</th> </tr> </thead> <tbody> <tr> <td>16-point</td> <td></td> </tr> </tbody> </table> <p>FA1-TE1SV16XY</p> | I/O module | Spring clamp terminal block | 16-point | | <table border="1"> <thead> <tr> <th>I/O module</th> <th>Spring clamp terminal block</th> </tr> </thead> <tbody> <tr> <td>16-point</td> <td></td> </tr> </tbody> </table> <p>FA1-TH16Y2RA20S1E</p> | I/O module | Spring clamp terminal block | 16-point | |
| Model | | | | | | | | | | | | | | | | | | | | | | |
| MELSEC iQ-R series | | | | | | | | | | | | | | | | | | | | | | |
| RY40NT5P-TS, etc. | | | | | | | | | | | | | | | | | | | | | | |
| MELSEC iQ-F series | | | | | | | | | | | | | | | | | | | | | | |
| FX5UC-32MT/DS-TS, etc. | | | | | | | | | | | | | | | | | | | | | | |
| CC-Link IE TSN | | | | | | | | | | | | | | | | | | | | | | |
| NZ2GN2S1-32D, etc. | | | | | | | | | | | | | | | | | | | | | | |
| Spring clamp terminal block | MIL 20P | | | | | | | | | | | | | | | | | | | | | |
| | × 2 | | | | | | | | | | | | | | | | | | | | | |
| I/O module | Spring clamp terminal block | | | | | | | | | | | | | | | | | | | | | |
| 16-point | | | | | | | | | | | | | | | | | | | | | | |
| I/O module | Spring clamp terminal block | | | | | | | | | | | | | | | | | | | | | |
| 16-point | | | | | | | | | | | | | | | | | | | | | | |

Selection point

Cables do not need to be terminated or wired individually because cables have already been connected to the spring clamp terminal block. This reduces the wiring work by 99%.

| Before | After |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <p>Wire ends terminated / wires connected one by one</p> | <p>Just remove and attach the cable with spring clamp terminal block</p> <p>Example: FA1-TH16Y2RA20S1E</p> |
| <p>Wiring time: 18 minutes (for 18 pins), 32 minutes (for 34 pins)</p> | <p>Wiring time: 8 seconds</p> |
| <p>* Internal investigation data are used for the wiring time.</p> | |

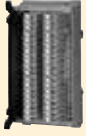
For details, refer to ▶ P.120 to P.217



Spring clamp type products



For programmable controllers, HMIs, and CNCs

For programmable controllers and computerized numerical controllers (CNCs)

| Specifications | | | Model |
|-----------------------------------------------------------------------------------|------------------------------|-----------------------------|---------------|
|  | I/O module | 32-point Vertical type | FA1-TE5V32XY |
| | | 32-point Horizontal type | FA1-TE1S32XY |
| | Common terminal block module | 16-point Vertical type | FA1-TE1SV16XY |
| | | 38-point Vertical type | FA1-TE5V38COM |


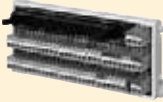


For programmable controllers

Cables with spring clamp terminal block ▶ P.121 to 123

| Specifications | | | Model | |
|-------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------|
|  | 40-point | Vertical type | FA1-TE40PA | |
|  | Input module | 4-point Installation base unit (module selectable type) | Function type module Positive/negative common FA1-TH4X2SC20S1E | |
| | | 8-point | FA1-TH8X2SC20S1E | |
| | | Module pre-mounted type unit (N/O contact) | 4-point | Positive common FA1-TH4X24RA1L20S1E New |
| | | | 8-point | Negative common FA1-TH8X24RA1L20S1E New |
| | | | 8-point | Positive common FA1-TH8X24RA1H20S1E New |
| | | | 16-point | Negative common FA1-TH16X24RA1H20S1E New |
| | Output module | 4-point Installation base unit (module selectable type) | Sink | FA1-TH4Y2SC20S1E New |
| | | | Source | FA1-TH1E4Y2SC20S1E New |
| | | 16-point Installation base unit (module selectable type) Module pre-mounted type unit (N/O contact) Module pre-mounted type unit (triac) Module pre-mounted type unit (transistor) | Sink | FA1-TH8Y2SC20S1E New |
| | | | Source | FA1-TH1E8Y2SC20S1E New |
| | | | Sink | FA1-TH16Y2SC20S1E |
| | | | Source | FA1-TH1E16Y2SC20S1E |
| | | | Sink | FA1-TH16Y1SR20S1E |
| | | | Source | FA1-TH1E16Y1SR20S1E |
| Analog signal converter | Voltage input | 4-point Installation base unit (module selectable type) | Input to the programmable controller: 1 to 5V FA1-AT1B4X1TE New | |
| | Current/voltage output | | Output from the programmable controller: 1 to 5V, 4 to 20mA FA1-AT1B4Y1TE New | |

Overview/features

For servo systems

| Specifications | | | Model |
|-------------------------------------------------------------------------------------|------------------------------|--------|------------|
|  | Screw installation available | 1-axis | DG2BK1TB |
| | DIN rail installation only | | DG2BK1TB-D |
|  | Full signal | 1-axis | DG2SV1TB |
|  | Full signal | 1-axis | DG2SV3TB |
|  | FLS/RLS/DOG signal | 1-axis | DG2SV2TB |
| | | 2-axis | DG2SV2TB2 |
| | | 3-axis | DG2SV2TB3 |

Digital signal converter (terminal module)

Visualizing device information

by connecting and configuring with different digital signals

Before

Result of in-house testing

Wiring required for all the points

| | Number of points | Wiring time |
|-----------------------------|------------------|-------------------------------------|
| Spring clamps on both sides | 32 | About 16 minutes* (about 30s/point) |
| Screws on both sides | 32 | About 19 minutes* (about 35s/point) |

Control units for devices required

After-1

Result of in-house testing

Dedicated cable for "device optimization" and "wire saving"

Digital signal converter

Prevent faulty connection by using a dedicated one-touch connection cable with connectors on both ends

Approx. 12s* Reduced by approx. 99%

Two 16-point digital signal converters

Control with only one 24VDC unit

After-2

Result of in-house testing

Signal converter interface module for "device optimization" and "wire saving"

Digital signal converter + Network interface module

Prevent faulty connection by using a network cable

Approx. 12s* Reduced by approx. 99%

Two 16-point digital signal converters

Control with CC-Link master module

P.25

System optimization and wire saving

As modules can be selected individually, the system can be configured with a minimum number of the programmable controllers and the number of wiring.

P.26

Converting signals into digital signals that can be handled by the connected device

The modules on the programmable controller side are unified into 24VDC modules so that the signals can be converted into the ones corresponding to the connected devices.

P.28

Easy startup and maintenance

As the module type is used, faulty areas and areas where the service life ends can be easily replaced.

P.29

Selection of the control method per point

The control method can be selected and mixed per point using module type.

P.29

More efficient spring clamp wiring

Since cables have already been connected to the spring clamp terminal block, the wiring work can be reduced by 99%.

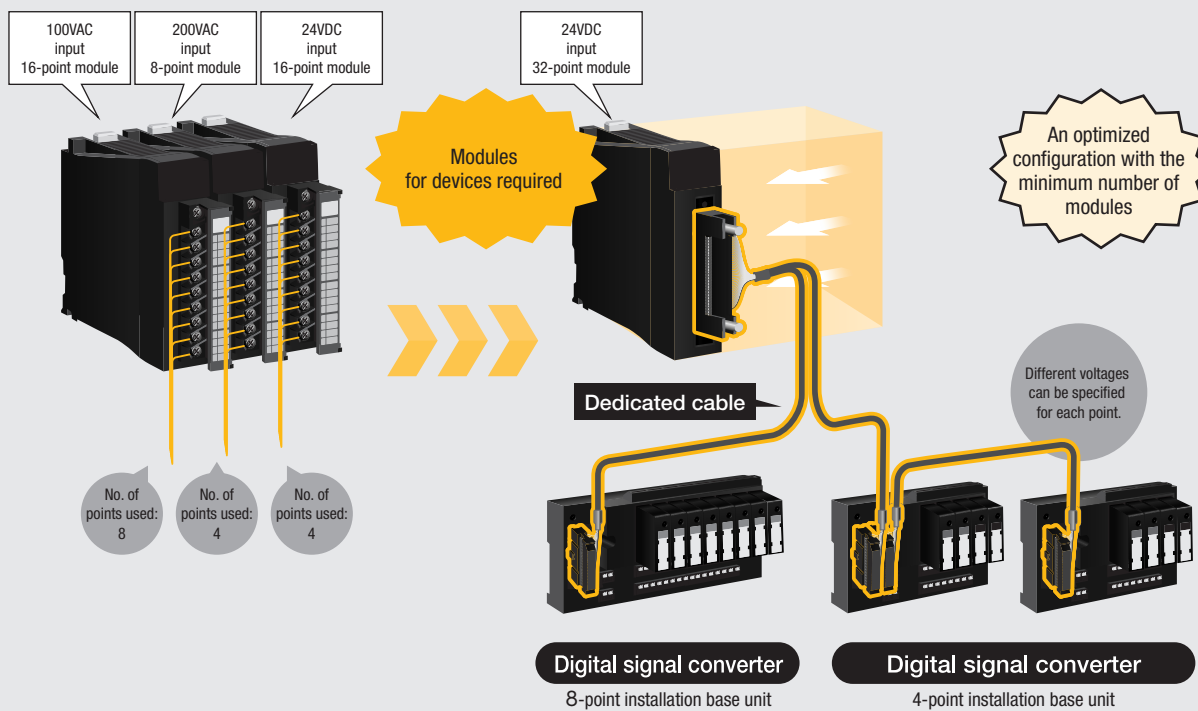
For details, refer to ▶ P.218 to P.287

System optimization and wire saving

Since modules can be individually specified, systems can be configured with a minimum number of points. In addition, the number of connectable programmable controllers is optimized and wiring work can be reduced by using the dedicated cable.

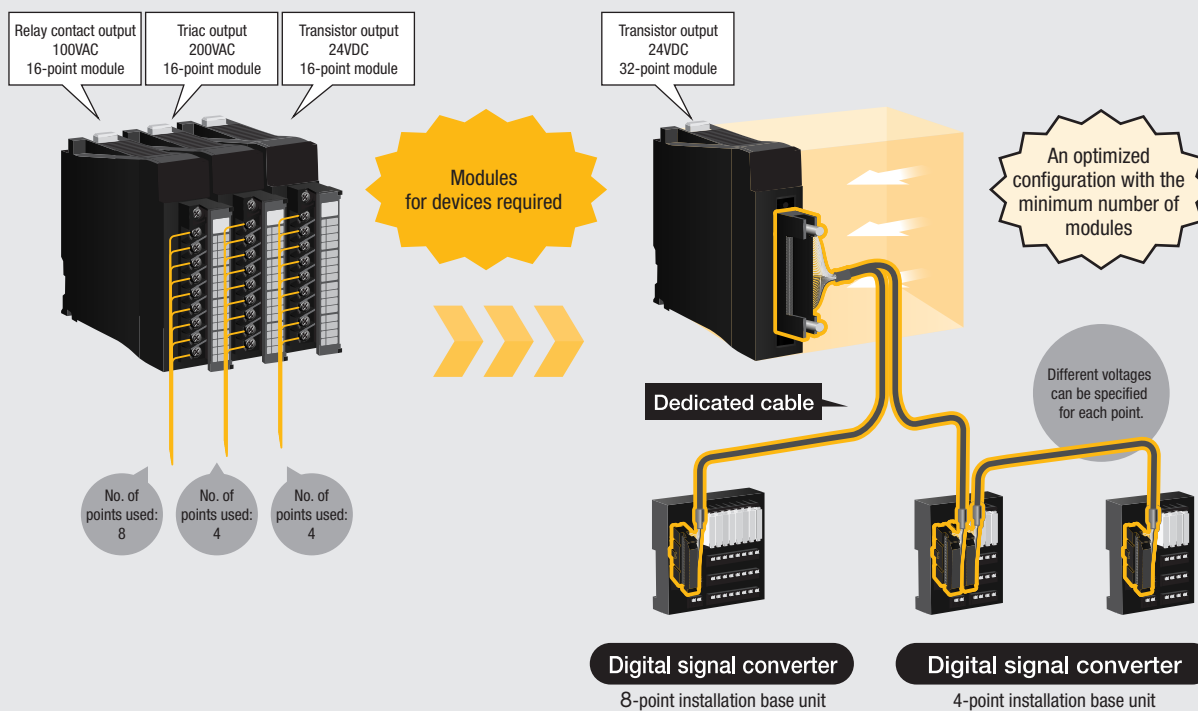
● Input type

(Example) Configuration of the following three modules: 100VAC input 8-point module, 200VAC input 4-point module, and 24VDC input 4-point module.



● Output type

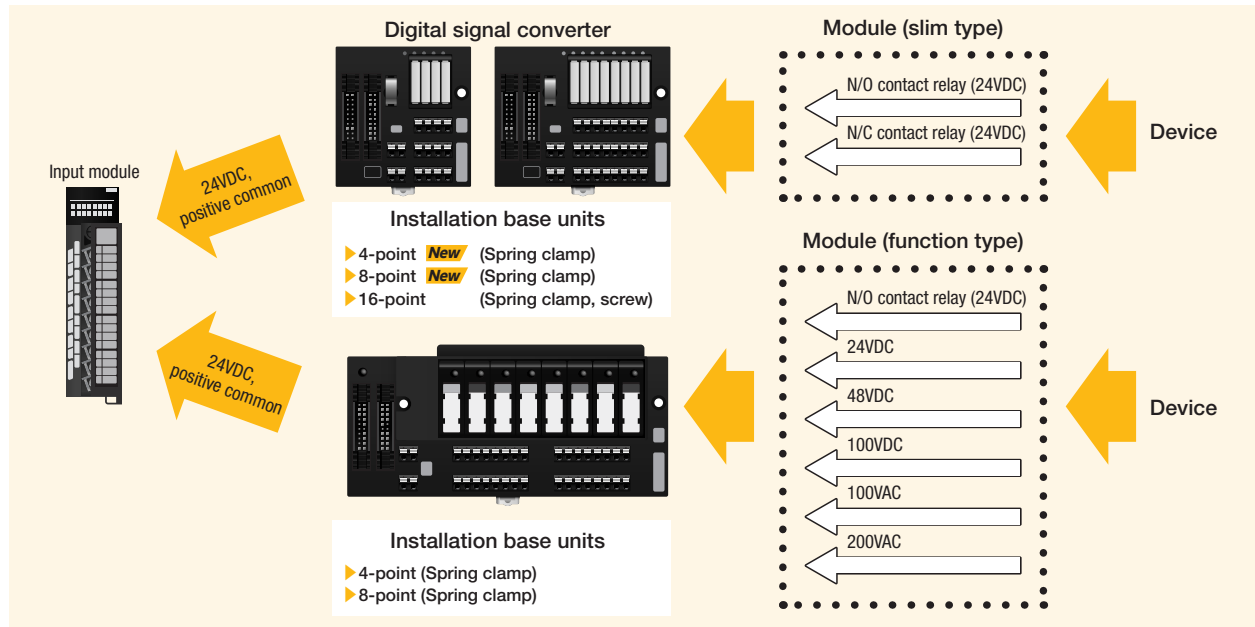
(Example) Configuration of the following three modules: relay output 16-point module, triac output 8-point module, and transistor output 8-point module.



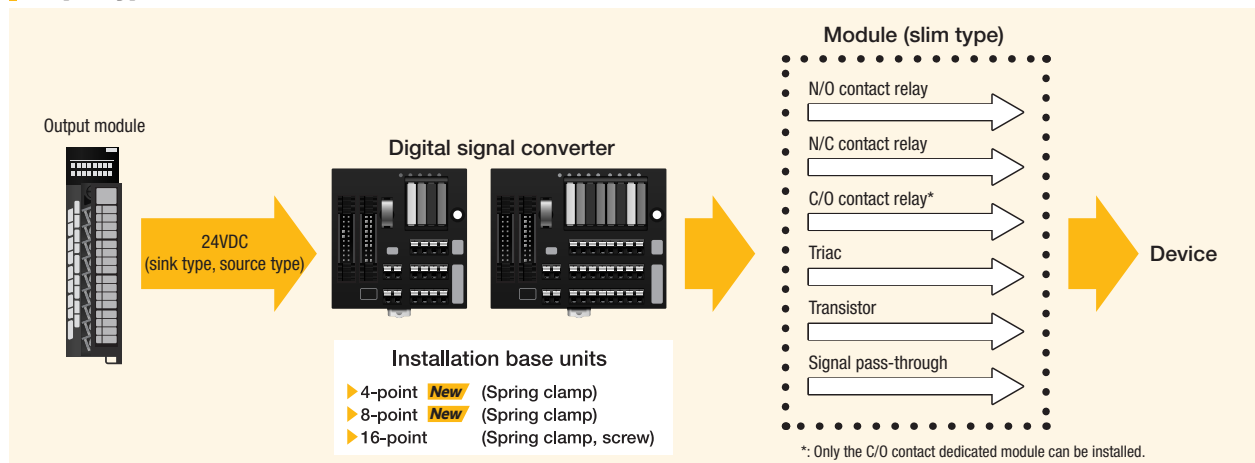
Converting signals into digital signals that can be handled by the connected device

By using a digital signal converter (terminal module), only 24VDC modules are required on the programmable controller side and signals output from the programmable controller can be converted into signals that can be handled by the connected device. The number of spare products can be reduced as well.

Input type

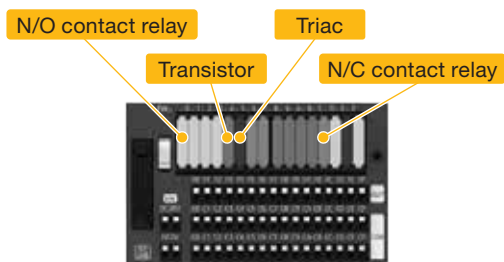


Output type



Optimized module configuration

Different control method can be specified for each terminal according to the device type.



16-point spring clamp terminal type digital signal converter (terminal module)

Module lineup

| Appearance | Type | Lineup |
|------------|---------------|-------------------------------------------------------------------------------------|
| | Input, output | N/O contact N/C contact |
| | Output | C/O contact Triac Transistor Signal pass-through |
| | Input | Relay isolation: 24VDC relay Photocoupler isolation: 24/48/100VDC, 100/200VAC |

Slim type: This module is compact and can save space.

Function type: This module has LEDs and can be replaced without tools.

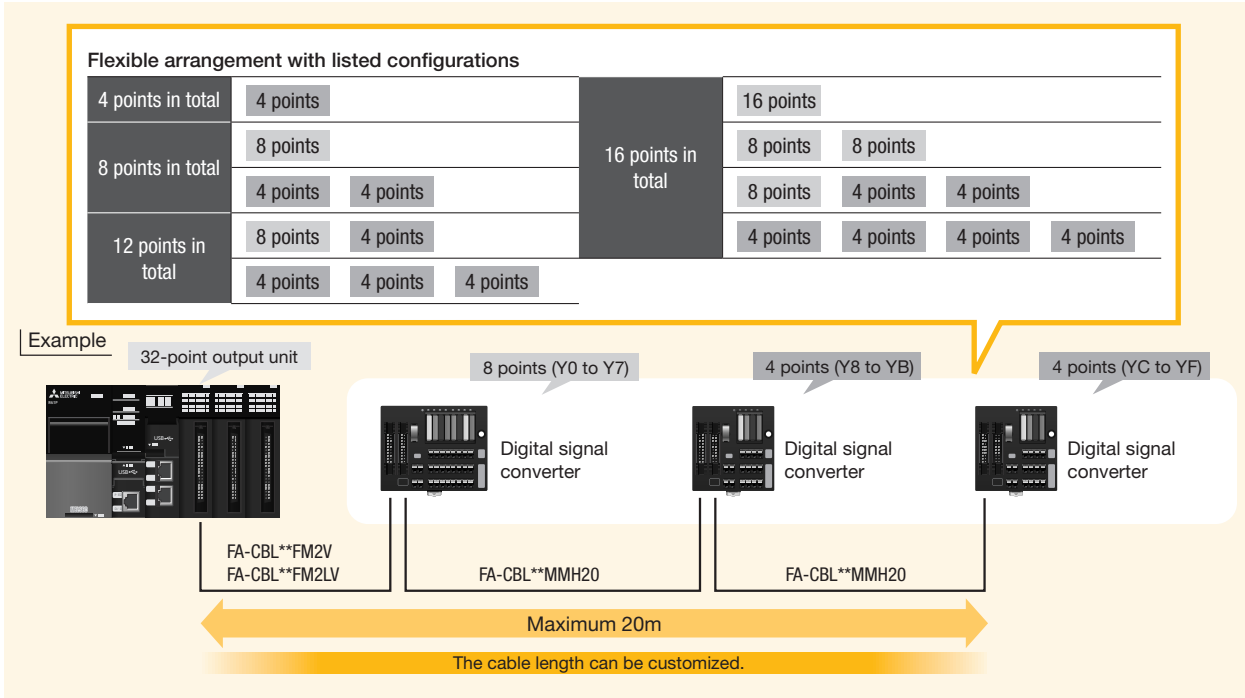
For details, refer to ▶ P.218 to P.287

Distributed installation to meet the system needs

With a dedicated cable and a network interface module, the digital signal converter (terminal module) can be installed near input devices. More flexible distributed installation is enabled by selecting the number of modules suitable for the system structure.

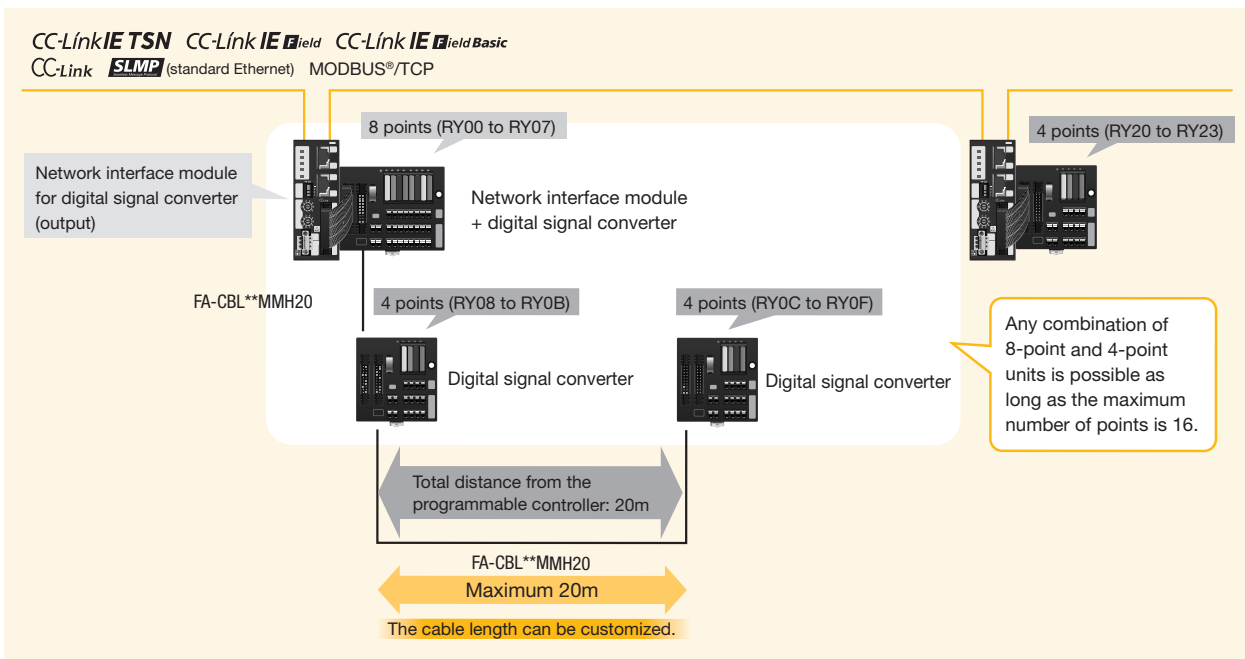
Connection with the programmable controller using dedicated cable

Dedicated cables can be used to connect the input/output modules of the programmable controller system and the digital signal converters. I/O numbers are automatically assigned according to the order in which digital signal converters are connected to the programmable controller.



Distributed installation using network interface modules

Distributed installation of digital signal converters (terminal modules) connected over CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, CC-Link, SLMP (standard Ethernet), or MODBUS/TCP is possible using network interface modules.

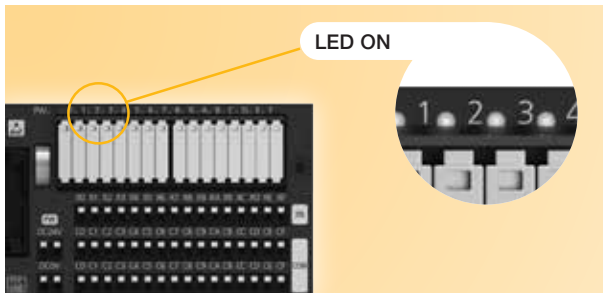


Easy startup and maintenance

LED indication

The LED indication (red) helps identify whether input signals are on or off. Additionally, modules can be distinguished by marking strip color, model name, or module color.

Slim type module



Function type module



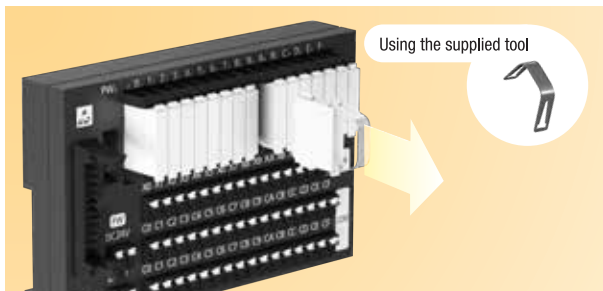
Marking strip

- The module has a marking strip on the front.
- Input signals can be distinguished by the marking strip color and markings.
- Information can be written in the free space on the marking strip for easy management.

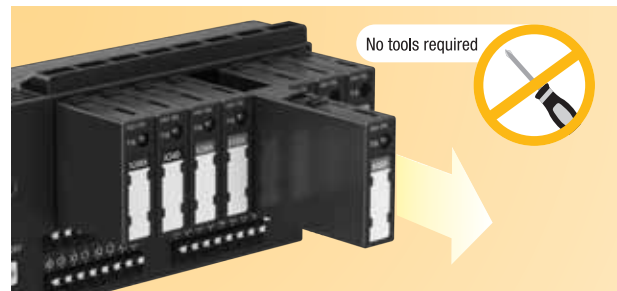
Module replacement

If a module fails or reaches the end of its service life, the module can be replaced using the supplied tool or without tools.

Slim type module



Function type module



Continuity check using a tester port

The time required for continuity check can be reduced because the spring clamp terminal type product has a tester port.



For details, refer to ▶ P.218 to P.287

Selection of the control method per point

The control method can be selected and mixed per point using module type.

For input signals

●: mountable, ×: not mountable, -: N/A

| Input/output | Wiring method for common | Digital signal converter | | Mountable module | | | | | | |
|--------------|-----------------------------|--------------------------------------------------------------|-------------------|-------------------|-------|--------------|----------|----------|----------|----------|
| | | Pre-mounted module | N/O contact relay | N/C contact relay | Relay | Photocoupler | | | | |
| | | | 24VDC | 24VDC | DC | 24VDC | 48VDC | 100VDC | 100VAC | 200VAC |
| Input | Independent common | N/O contact relay (24VDC) ^{*1, *2} | ● | ● | - | - | - | - | - | - |
| | | Module selectable type ¹ (installation base unit) | - | - | ● | ● | ● | ● | ● | ● |
| | Shared common ^{*2} | Built-in module type (24VDC) | - | - | - | Built-in | - | - | - | - |
| | | Built-in module type (48VDC) | - | - | - | - | Built-in | - | - | - |
| | | Built-in module type (100VDC) | - | - | - | - | - | Built-in | - | - |
| | | Built-in module type (100VAC) | - | - | - | - | - | - | Built-in | - |
| | | Built-in module type (200VAC) | - | - | - | - | - | - | - | Built-in |

*1: Spring clamp terminal
*2: Screw terminal

For output signals

| Input/output | Wiring method for common | Digital signal converter | | Mountable module | | | | |
|--------------|---------------------------------|--------------------------------------------------------------|-------------------|-------------------|--------------|------------|--------------|-------------------|
| | | Pre-mounted module | N/O contact relay | N/C contact relay | Triac | Transistor | Pass-through | C/O contact relay |
| | | | 24VDC, 200VAC | 24VDC, 200VAC | 30 to 240VAC | 3 to 30VDC | | 24VDC, 200VAC |
| Output | Independent common | Module selectable type ¹ (installation base unit) | ● | ● | ● | ● | ● | × |
| | | N/O contact relay ^{*3, *4} | | | | | | |
| | | N/C contact relay ^{*4} | ● | ● | ● | ● | ● | × |
| | | Triac ^{*3, *4} | | | | | | |
| | | Transistor ^{*3, *4} | | | | | | |
| | C/O contact relay ^{*4} | × | × | × | × | × | ● | |
| | Shared common ^{*4} | N/O contact relay | ● | ● | × | × | × | × |
| Triac | | × | × | ● | × | × | × | |
| Transistor | | × | × | × | ● | × | × | |

*3: Spring clamp terminal
*4: Screw terminal

More efficient spring clamp wiring

Cables do not need to be terminated or wired individually because cables have already been connected to the spring clamp terminal block. This reduces the wiring work by 99%.

The cable length can be customized.

Before Wire ends terminated / wires connected one by one

After Just remove and attach the cable with spring clamp terminal block

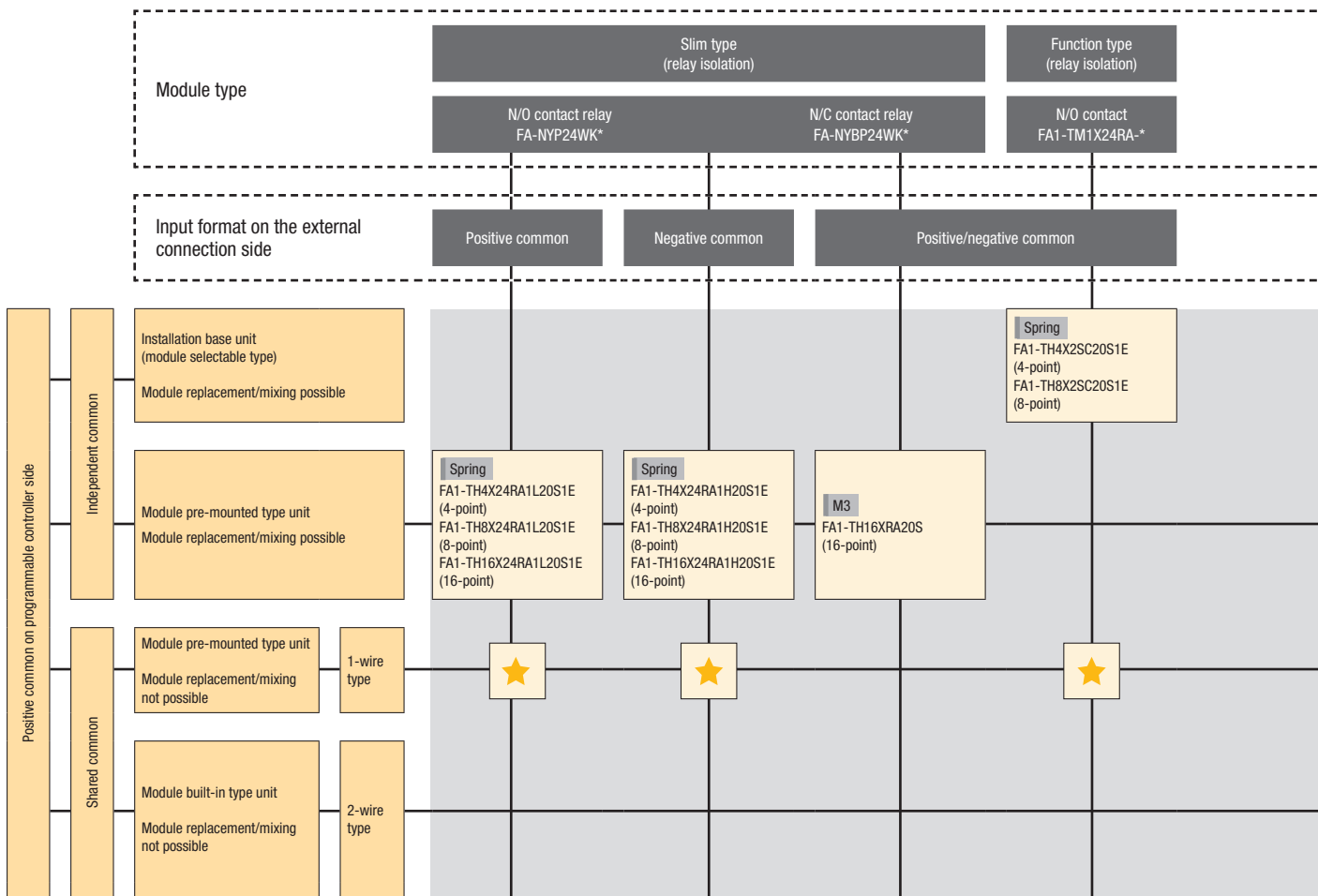
Example: FA1-TH16Y2RA20S1E

Wiring time

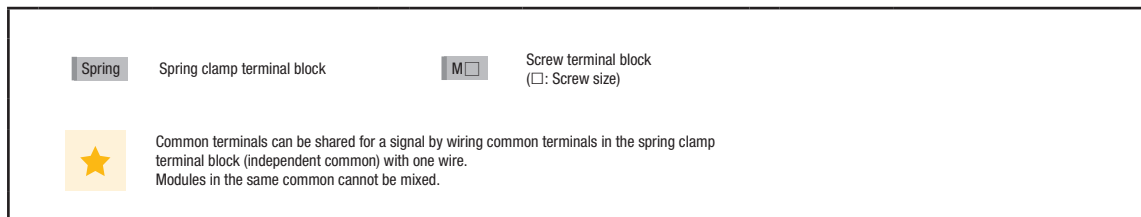
18 minutes (18 pins) vs 32 minutes (34 pins) vs 8 seconds

* Internal investigation data are used for the wiring time.

Input modules (connection method)

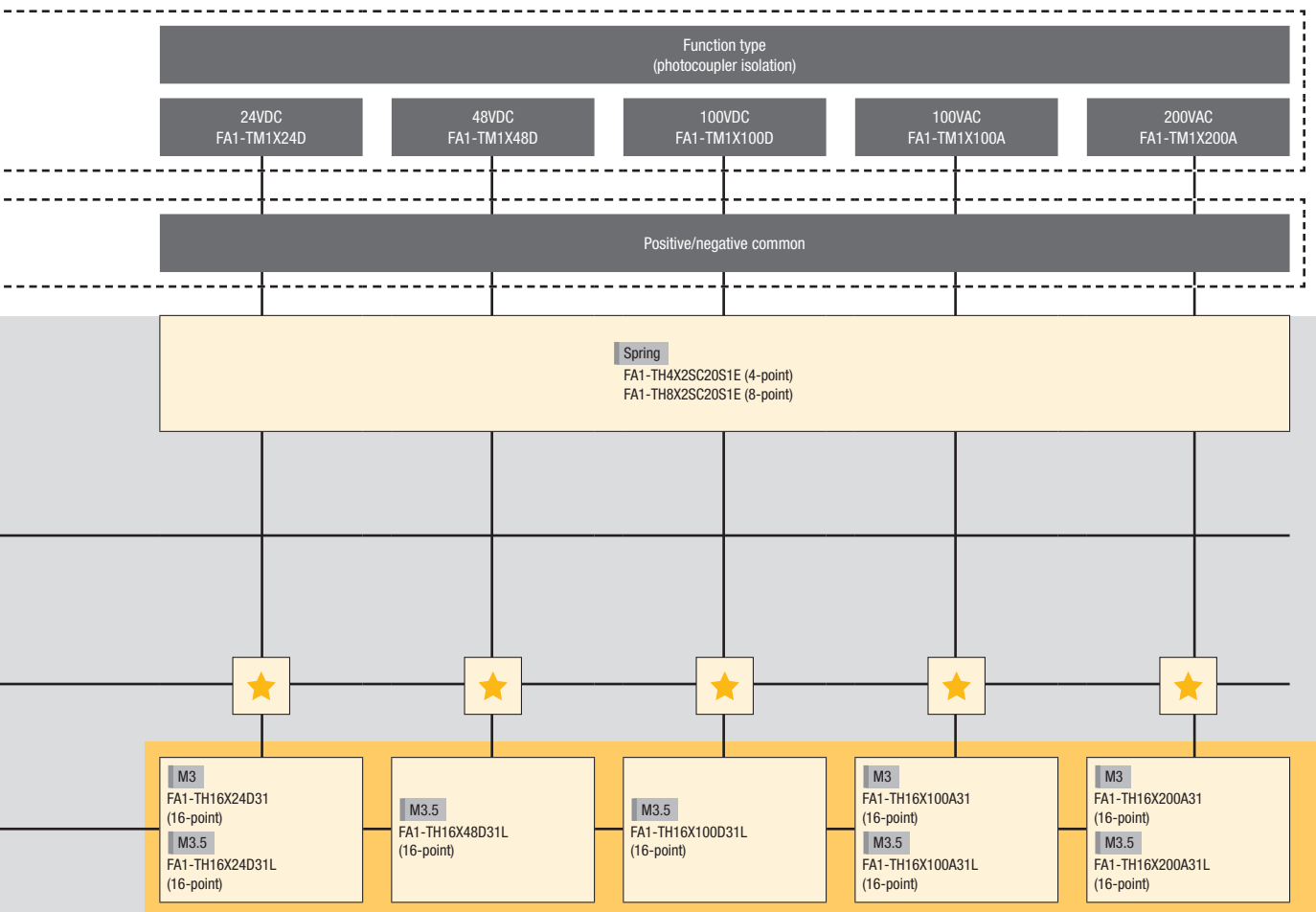


The asterisk in the model name is replaced by a number indicating the quantity.
It is replaced by "2" when the quantity is two, or "4" when the quantity is four.



- Module selectable type: Modules are not pre-mounted. Separately sold modules are available for various applications.
- Module pre-mounted type: Modules are pre-mounted. Modules can be replaced or mixed with separately sold modules.
- Module built-in type: Modules are built in. Modules cannot be replaced or mixed. The unit itself has a cost advantage.

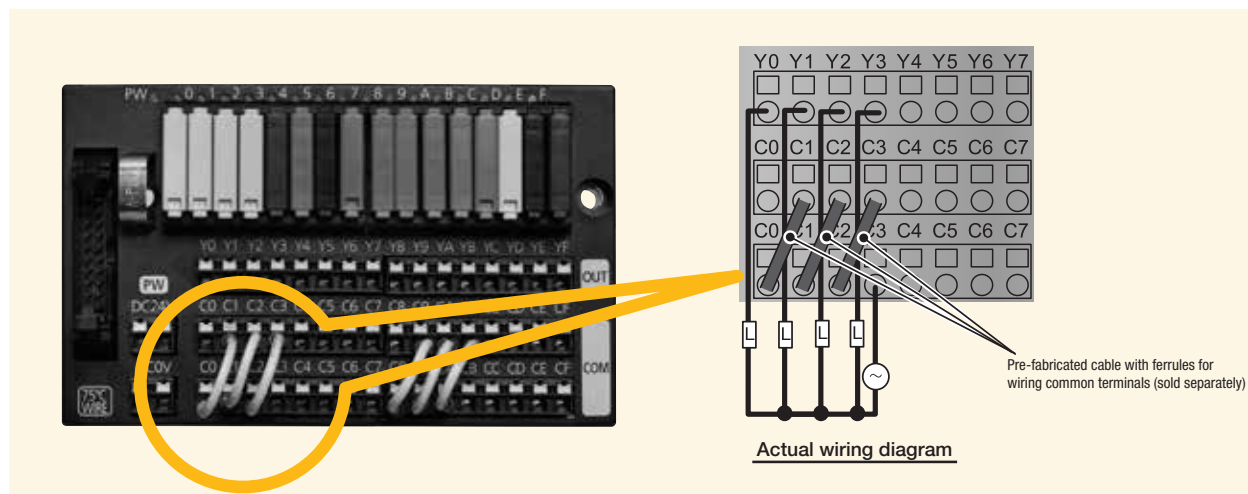
For details, refer to ▶ P.218 to P.287



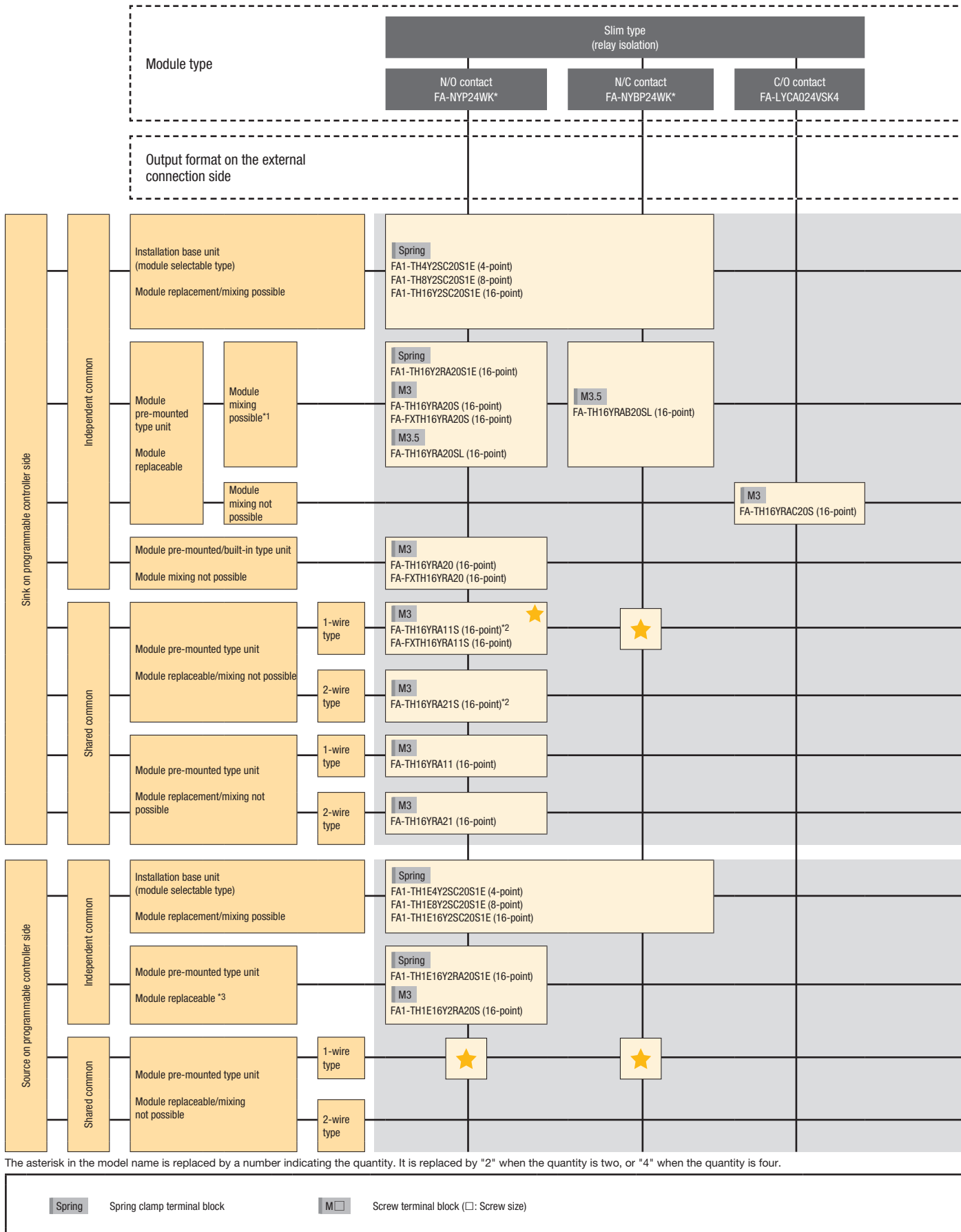
Shared common

Two sets of common terminals per input signal allows for common terminals to be shared.

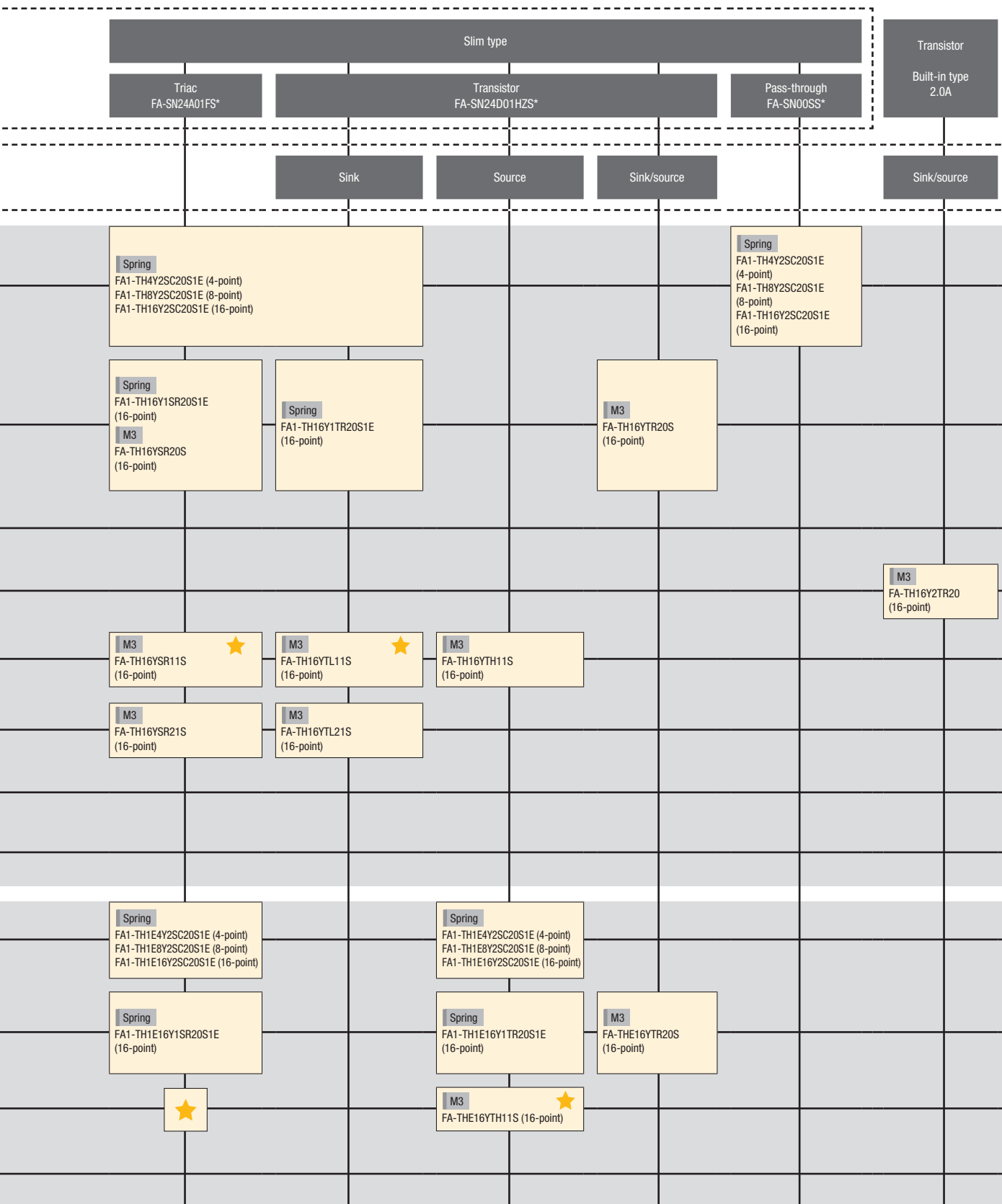
[Example] Wiring when sharing the common terminals in output digital signal converter Y0 to Y3.




Output modules (connection method)



For details, refer to ► P.218 to P.287



 Common terminals can be shared for a signal by wiring common terminals in the spring clamp terminal block (independent common) with one wire. Modules in the same common cannot be mixed.

*1: Only N/O contact, N/C contact, triac, transistor, and signal pass-through modules can be mixed.
 *2: Only N/C contact modules can be mixed.
 *3: Only N/O contact, N/C contact, triac, and transistor can be mixed.

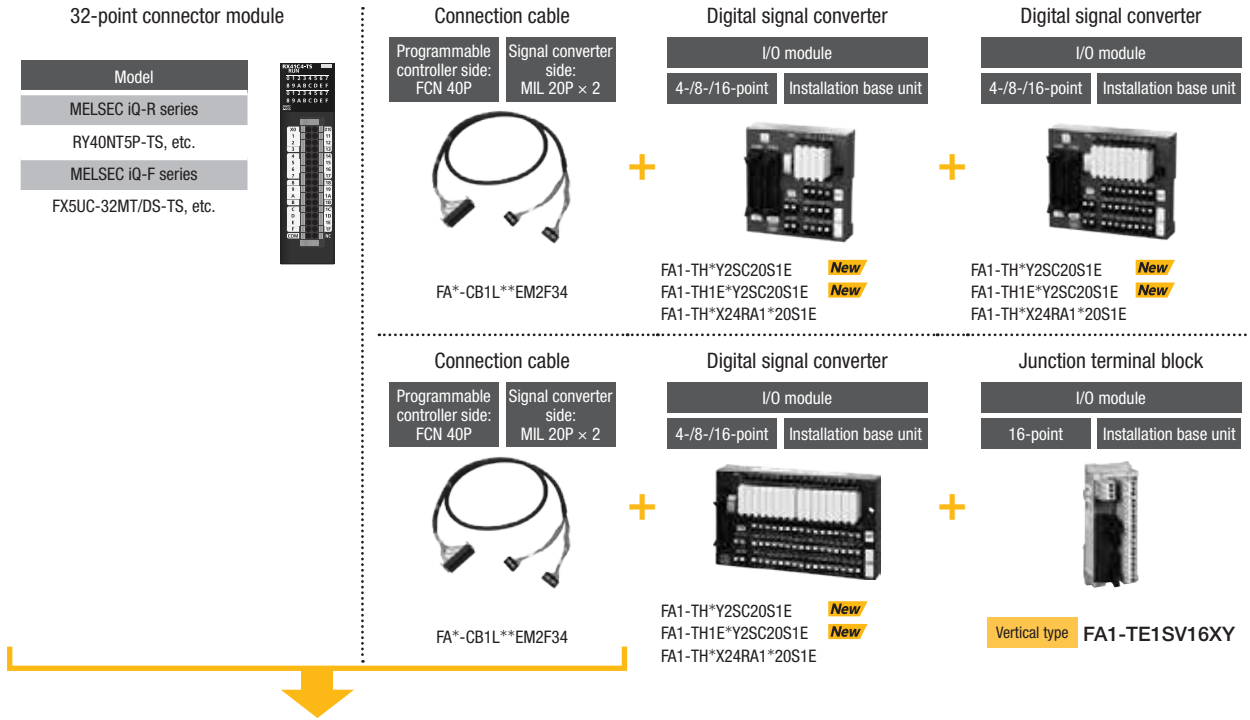
Products for reducing wiring work by 99%

Cables do not need to be terminated or wired individually because cables have already been connected to the spring clamp terminal block.

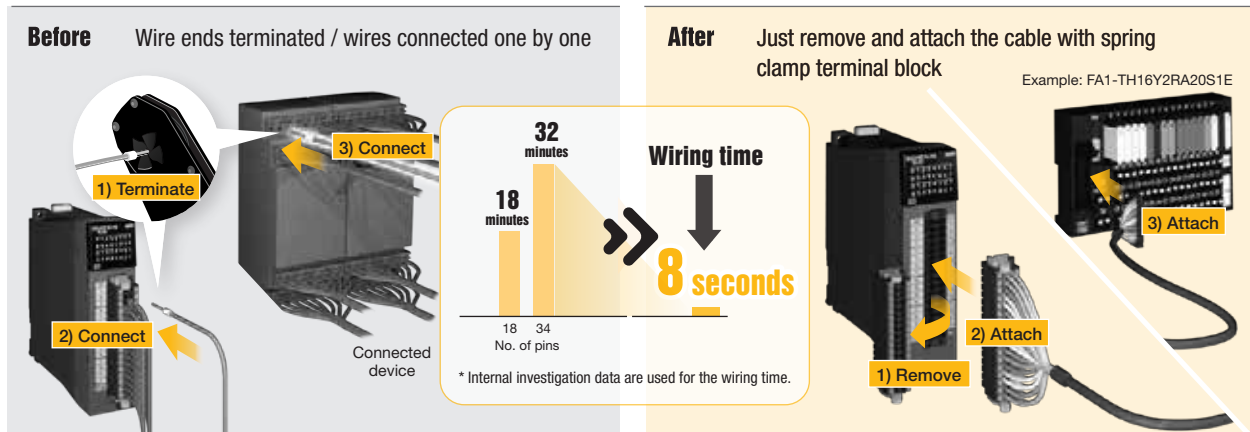
This reduces the wiring work by 99%.

In addition, cables are pushed into terminals of a spring clamp terminal block without tightening screws. This helps to reduce the time required for maintenance.

Selecting products for a 32-point connector module



Selection point



Module list (for replacement/mixing)

Function type

| Control method | Color | Model |
|---------------------|-----------|----------------|
| 100VAC photocoupler | Orange | FA1-TM1X100A-* |
| 200VAC photocoupler | Red | FA1-TM1X200A-* |
| 24VDC photocoupler | Black | FA1-TM1X24D-* |
| 48VDC photocoupler | Blue | FA1-TM1X48D-* |
| 100VDC photocoupler | Purple | FA1-TM1X100D-* |
| 24VDC relay | Navy blue | FA1-TM1X24RA-* |
| Dummy | Green | FA1-TM1ND4 |

The asterisk in the model name is replaced by a number indicating the quantity. It is replaced by "2" when the quantity is two, or "4" when the quantity is four.

Slim type

| Control method | Color | Model |
|----------------------------------------|----------|----------------|
| N/O contact relay (quantity: 2 or 4) | Beige | FA-NYP24WK* |
| N/C contact relay (quantity: 2 or 4) | Sky blue | FA-NYBP24WK* |
| C/O contact relay (quantity: 4) | White | FA-LYCA024VSK4 |
| Triac (quantity: 2 or 4) | Black | FA-SN24A01FS* |
| Transistor (quantity: 2 or 4) | Red | FA-SN24D01HZS* |
| Signal pass-through (quantity: 2 or 4) | Green | FA-SN00SS* |

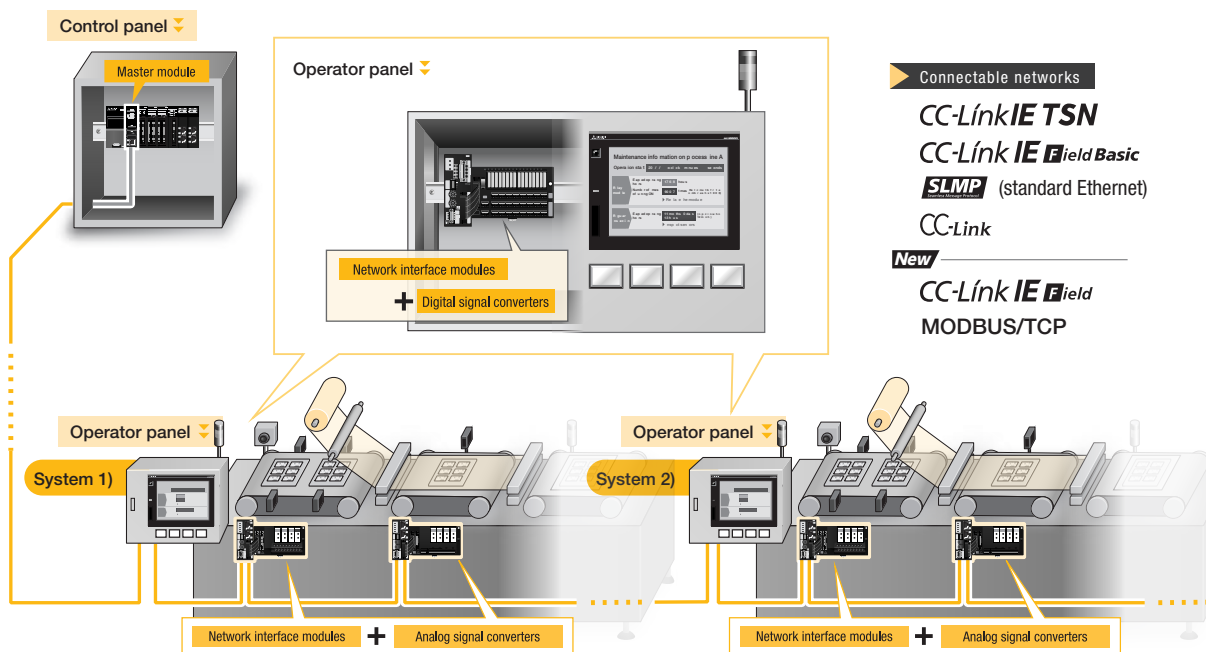
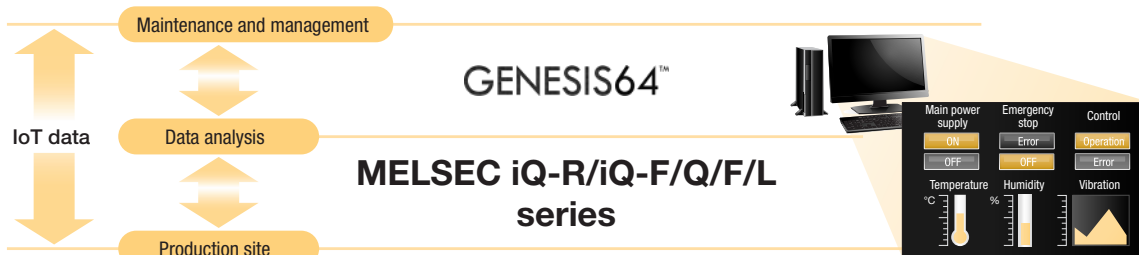
The asterisk in the model name is replaced by a number indicating the quantity. It is replaced by "2" when the quantity is two, or "4" when the quantity is four.

Related products

Network interface modules

Network interface modules

The network interface module easily connects analog signal converters and digital signal converters (terminal modules) to networks. Data is batch-collected from connected devices, enabling small-scale IoT.



Network interface modules



| | | | Supported network | | |
|-----------------------------------------------|---------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------|
| | | | CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) MODBUS TCP/IP | CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) | CC-Link |
| Digital signal converter (terminal module) | Input (sink/source) | Connection cable included | FA3-TH1M16XC-01C | FA3-TH1T16XC-01C | FA3-TH1C16XC-01C |
| | | Connection cable not included | FA3-TH1M16XC | FA3-TH1T16XC | FA3-TH1C16XC |
| | Output (sink) | Connection cable included | FA3-TH1M16Y-01C | FA3-TH1T16Y-01C | FA3-TH1C16Y-01C |
| | | Connection cable not included | FA3-TH1M16Y | FA3-TH1T16Y | FA3-TH1C16Y |
| | Output (source) | Connection cable included | FA3-TH1M16YE-01C | FA3-TH1T16YE-01C | FA3-TH1C16YE-01C |
| | | Connection cable not included | FA3-TH1M16YE | FA3-TH1T16YE | FA3-TH1C16YE |
| Analog signal converter | Input | Connection cable included | FA3-AT1M8X-01C | FA3-AT1T8X-01C | FA3-AT1C8X-01C |
| | | Connection cable not included | FA3-AT1M8X | FA3-AT1T8X | FA3-AT1C8X |
| | Output | Connection cable included | FA3-AT1M8Y-01C | FA3-AT1T8Y-01C | FA3-AT1C8Y-01C |
| | | Connection cable not included | FA3-AT1M8Y | FA3-AT1T8Y | FA3-AT1C8Y |

When a digital signal converter (terminal module) is used

| Programmable controller module IPC | Network interface module | | Digital signal converter (terminal module) | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------|-------------------|------------------------|-------------------|
| | Product | Model | Control method | | Terminal block type | Model | | | | |
| CC-Link IE TSN master station · MELSEC iQ-R · MELSEC iQ-F CC-Link IE Field master station · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L · MELSEC-F CC-Link IE Field Basic master station · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L SLMP client · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L MODBUS/TCP · MELSEC iQ-R · MELSEC-Q · MELSEC-L CC-Link master station · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L · MELSEC-F General-purpose programmable controller (standard Ethernet) | Digital signal converter for input signals | With a dedicated cable FA3-TH1□16XC-01C Without a dedicated cable FA3-TH1□16XC | Installation base unit (module selectable type) | 4 points, independent | | Spring clamp | FA1-TH4X2SC20S1E | | | |
| | | | | 8 points, independent | | | FA1-TH8X2SC20S1E | | | |
| | | | | Module pre-mounted type | 24VDC (N/O contact) | 4 points, independent (positive) | | Spring clamp | FA1-TH4X24RA1L20S1E | |
| | | | | | | 4 points, independent (negative) | | | FA1-TH4X24RA1H20S1E | |
| | | | | | | 8 points, independent (positive) | | Spring clamp | FA1-TH8X24RA1L20S1E | |
| | | | | | | 8 points, independent (negative) | | | FA1-TH8X24RA1H20S1E | |
| | | | 16 points, independent (positive) | | | Spring clamp | FA1-TH16X24RA1L20S1E | | | |
| | | | 16 points, independent (negative) | | | | FA1-TH16X24RA1H20S1E | | | |
| | | | Module built-in type | 24VDC | 16 points, independent | | Screw (M3) | FA-TH16XRA20S | | |
| | | | | | 16 points/common, 2-wire type | | Screw (M3.5) | FA-TH16X24D31 | | |
| | | | | | 48VDC | | Screw (M3.5) | FA-TH16X48D31L | | |
| | | | | | 100VDC | | Screw (M3.5) | FA-TH16X100D31L | | |
| | | | | | 100VAC | | Screw (M3) | FA-TH16X100A31 | | |
| | | | | | 200VAC | | Screw (M3) | FA-TH16X200A31 | | |
| | | | CC-Link IE Field Basic master station · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L SLMP client · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L MODBUS/TCP · MELSEC iQ-R · MELSEC-Q · MELSEC-L CC-Link master station · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L · MELSEC-F General-purpose programmable controller (standard Ethernet) | Digital signal converter for output signals (sink) | With a dedicated cable FA3-TH1□16Y-01C Without a dedicated cable FA3-TH1□16Y | Installation base unit (module selectable type) | 4 points, independent (sink) | | Spring clamp | FA1-TH4Y2SC20S1E |
| | | | | | | | 8 points, independent (sink) | | | FA1-TH8Y2SC20S1E |
| | | | | | | | 16 points, independent (sink) | | Spring clamp | FA1-TH16Y2SC20S1E |
| | | | | | | | Module pre-mounted type | N/O contact relay | 16 points, independent | |
| 16 points/common, 1-wire type | | Screw (M3) | | | | | | | FA-TH16YRA20S | |
| 16 points/common, 2-wire type | | Screw (M3.5) | | | | | | | FA-TH16YRA20 | |
| 16 points, independent | | Screw (M3.5) | | | | FA-TH16YRA20SL | | | | |
| 16 points/common, 1-wire type | | Screw (M3) | | | | FA-TH16YRA11S | | | | |
| 16 points/common, 2-wire type | | Screw (M3) | | | | FA-TH16YRA11 | | | | |
| Module pre-mounted type | N/C contact relay | 16 points, independent | | | | Screw (M3.5) | FA-TH16YRA20SL | | | |
| | | 16 points, independent | | | | Screw (M3) | FA-TH16YRAC20S | | | |
| | | C/O contact relay | | | | 16 points, independent | | Screw (M3) | FA1-TH16Y1SR20S1E | |
| | 16 points, independent | | | | | Screw (M3) | FA-TH16YSR20S | | | |
| | 16 points/common, 1-wire type | | | | | Screw (M3) | FA-TH16YSR11S | | | |
| | Module pre-mounted type | Triac | | | | 16 points/common, 2-wire type | | Screw (M3) | FA-TH16YSR21S | |
| 16 points, independent (sink) | | | | | | Screw (M3) | FA1-TH16Y1TR20S1E | | | |
| 16 points/common, 1-wire type (sink) | | | | | | Screw (M3) | FA-TH16YTL11S | | | |
| Transistor (sink) | | 16 points/common, 2-wire type (sink) | | | | Screw (M3) | FA-TH16YTL21S | | | |
| | | 16 points/common, 1-wire type (source) | | | | Screw (M3) | FA-TH16YTH11S | | | |
| | | 16 points, independent (sink/source shared type) | | | | Screw (M3) | FA-TH16YTR20S | | | |
| Module built-in type | 16 points, independent, 2A (sink/source shared type) | | | | | Screw (M3) | FA-TH16Y2TR20 | | | |
| | Installation base unit (module selectable type) | 4 points, independent (sink) | | | | Spring clamp | FA1-TH1E4Y2SC20S1E | | | |
| | | 8 points, independent (sink) | | | | | FA1-TH1E8Y2SC20S1E | | | |
| | | 16 points, independent (source) | | | | Spring clamp | FA1-TH1E16Y2SC20S1E | | | |
| | | Module pre-mounted type | N/O contact relay | 16 points, independent (source) | | Screw (M3) | FA1-TH1E16Y2RA20S1E | | | |
| | | | | 16 points, independent (source) | | Screw (M3) | FA1-TH1E16Y2RA20S | | | |
| Triac | | | 16 points, independent (source) | | Screw (M3) | FA1-TH1E16Y1SR20S1E | | | | |
| | 16 points, independent (source) | | Screw (M3) | FA1-TH1E16Y1SR20S | | | | | | |
| Transistor (source) | 16 points, independent (source) | | Screw (M3) | FA1-TH1E16Y1TR20S1E | | | | | | |
| | 16 points, independent (sink/source shared type) | | Screw (M3) | FA-TH1E16YTR20S | | | | | | |
| 16 points/common, 1-wire type (source) | | Screw (M3) | FA-TH1E16YTH11S | | | | | | | |

Supported network

| | |
|-------|------------------------------------------------------------------------------------------------|
| □ = M | CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, SLMP (standard Ethernet), MODBUS/TCP |
| □ = T | CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, SLMP (standard Ethernet) |
| □ = C | CC-Link |

| | | Module | | | Model | |
|---------------|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------|----------------------------|-----------------------------|
| | | Specifications (Signal pass-through modules cannot be used.) | | | | |
| Function type | Input |  | 24VDC relay isolation (navy blue) | Quantity: 1 Quantity: 2 Quantity: 4 Quantity: 4 | FA1-TM1X24RA-* | |
| | | | 24VDC photocoupler isolation (black) | | FA1-TM1X24D-* | |
| | | | 48VDC photocoupler isolation (sky blue) | | FA1-TM1X48D-* | |
| | | | 100VDC photocoupler isolation (purple) | | FA1-TM1X100D-* | |
| | | | 100VAC photocoupler isolation (orange) | | FA1-TM1X100A-* | |
| | | | 200VAC photocoupler isolation (red) | | FA1-TM1X200A-* | |
| | | | Dummy (for dustproof) (green) | | FA1-TM1ND4 | |
| Slim type | Input/output |  | N/O contact relay (beige) | Input: 24VDC Output: 24VDC, 100 to 240VAC, 2A | Quantity: 2 Quantity: 4 | FA-NYP24WK* FA-NYBP24WK* |
| | N/C contact relay (sky blue) | | Quantity: 4 | | FA-LYCA024VSK4 | |
| | Output | | C/O contact relay (white) | 24VDC, 100 to 240VAC, 6A | Quantity: 4 | FA-SN24A01FS* |
| | | | Triac (black) | 30 to 240VAC, 1A | Quantity: 2 | FA-SN24D01HZS* |
| | | | Transistor (red) | 3 to 30VDC, 1A | Quantity: 4 | |

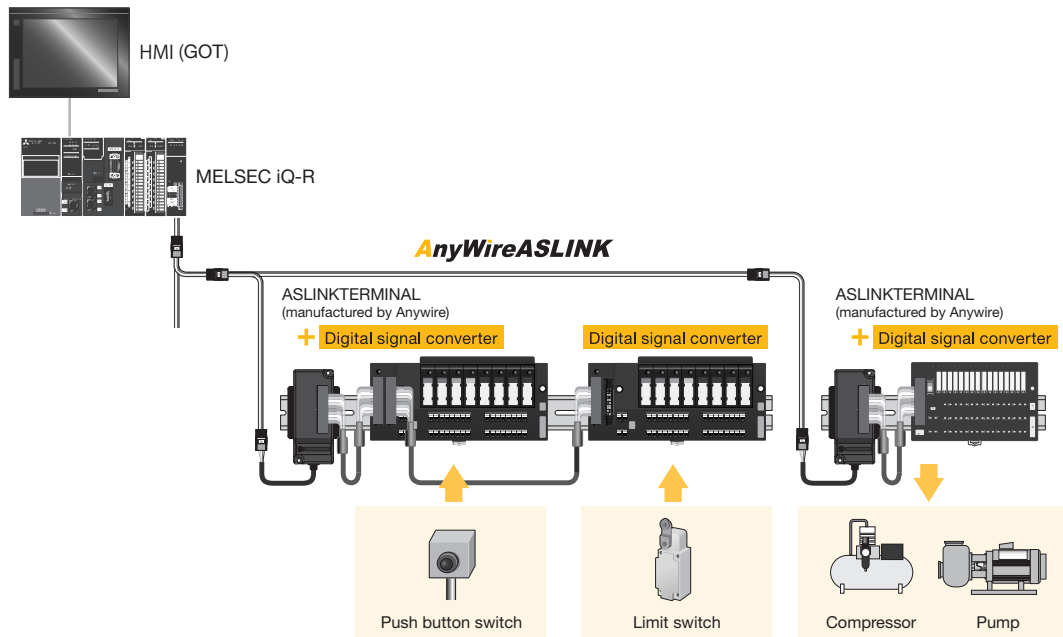
The asterisk in the model name is replaced by a number indicating the quantity. It is replaced by "2" when the quantity is two, or "4" when the quantity is four.

Related products

AnyWireASLINK connection

Over AnyWireASLINK, the programmable controller can monitor (diagnose) the sensor states. This contributes to increasing the operating rate, reducing man-hours, and space-saving of machinery/controlling devices that frequently use sensors. In addition, using the digital signal converters (terminal modules) over AnyWireASLINK, there is no need to configure a relay circuit.

Configuration example



| MIL connector terminal model | |
|------------------------------|-----------------|
| BL265SB-16F-2-20 | Positive common |
| BL265SB-32F-2-20 | Positive common |
| BL265PB-16F-2-20 | Sink output |
| BL265PB-32F-2-20 | Sink output |
| BL265PB-16FS-2-20 | Source output |
| BL265PB-32FS-2-20 | Source output |
| BL265XB-32F-2-20 | I/O combined |

Analog signal converter

Visualizing device information by connecting and configuring with different analog signals

Before

Wiring to all devices required

Cable noise reduction measures required

Control units for devices required

Wiring required for all the points

| | No. of channels | Wiring time |
|----------------------|-----------------|---------------------------------------|
| Screws on both sides | 8 | About 4 minutes* (about 30s/point) |

After-1

Dedicated cable for "device optimization" and "wire saving"

Shielded cable used

Analog signal converter

Prevent faulty connection by using a dedicated one-touch connection cable with connectors on both ends

Installation near devices such as sensors

Control with voltage/current analog module

Approx. 12s* Reduced by approx. 99%

Two 16-point digital signal converters

After-2

Network interface module for "device optimization" and "wire saving"

Analog signal converter + Network interface modules

Prevent faulty connection by using a network cable

Installation near devices such as sensors

Control with only one network master module
▶ Refer to page 42.

Approx. 12s* Reduced by approx. 99%

Two 16-point digital signal converters

P.39

Optimum system configuration

Since modules can be individually specified, systems can be configured with a minimum number of points.

P.41

Converting signals into analog signals that can be handled by the connected device

All modules on the programmable controller side uses the current: 4 to 20mA and the voltage: 1 to 5V so that the signals can be converted into the ones applicable to connected device.

P.44

Selection of the control method per point

The control method can be selected and mixed per point using module type.

P.45

Easy startup and maintenance

As the module type is used, faulty areas and areas where the service life ends can be easily replaced.

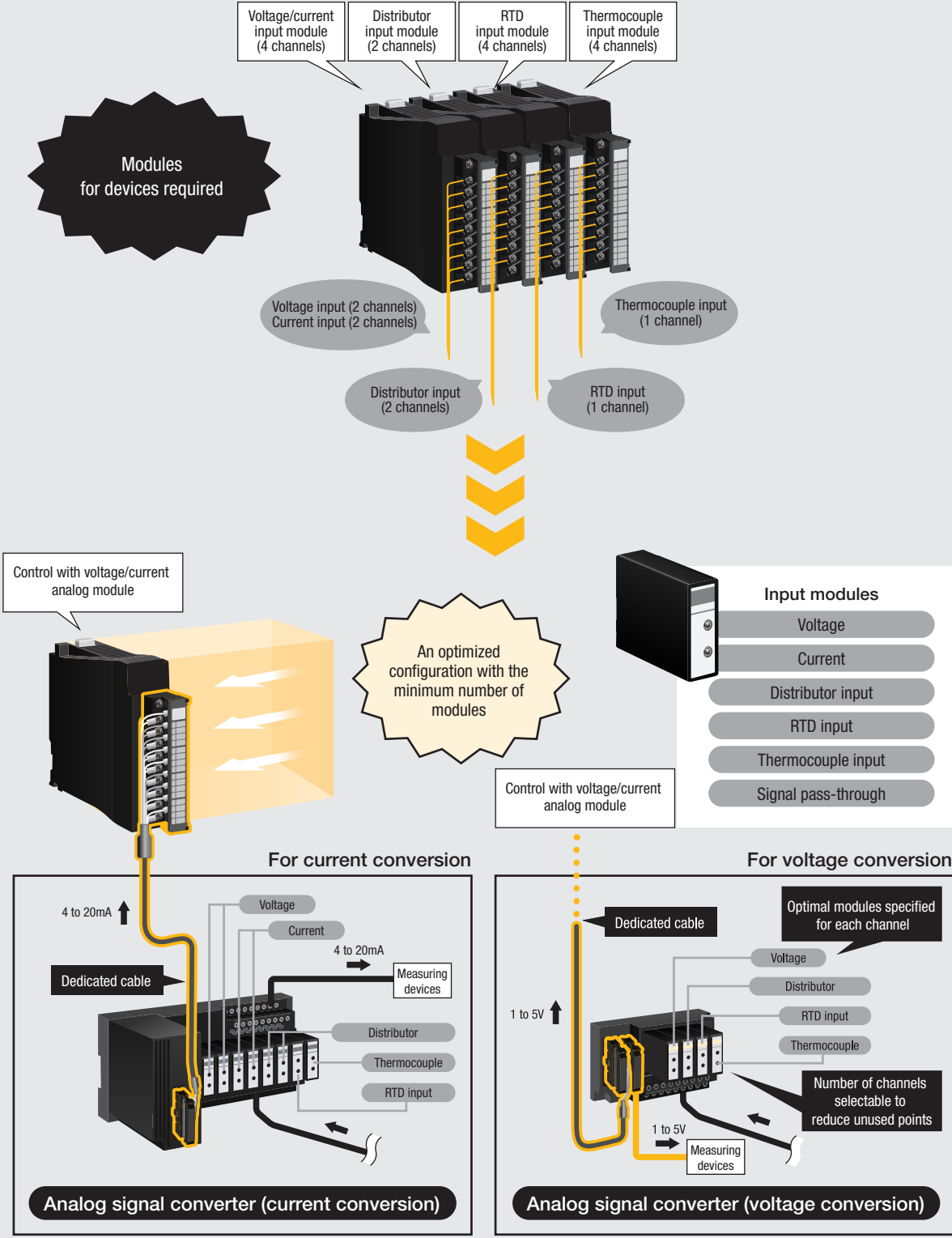
For details, refer to ▶ P.288 to P.318

Optimum system configuration

Since modules can be individually specified, systems can be configured with a minimum number of points. A programmable controller also can be easily connected using the dedicated cable.

• Input type

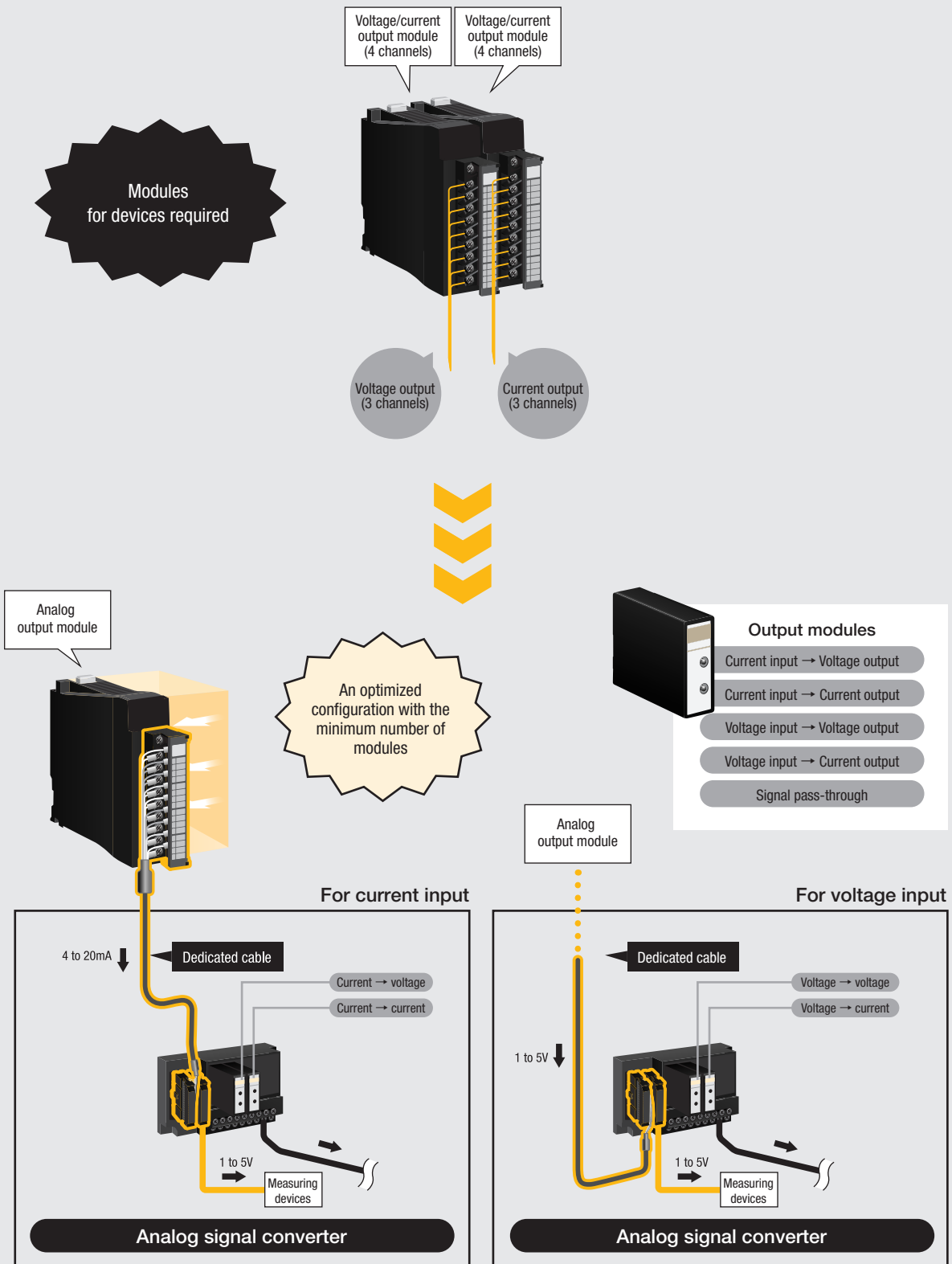
(Example) Configuration with voltage, current, distributor, RTD, thermocouple



For programmable controllers, HMIs, and CNCs
Overview/features

• Output type

(Example) Configuration of voltage and current output



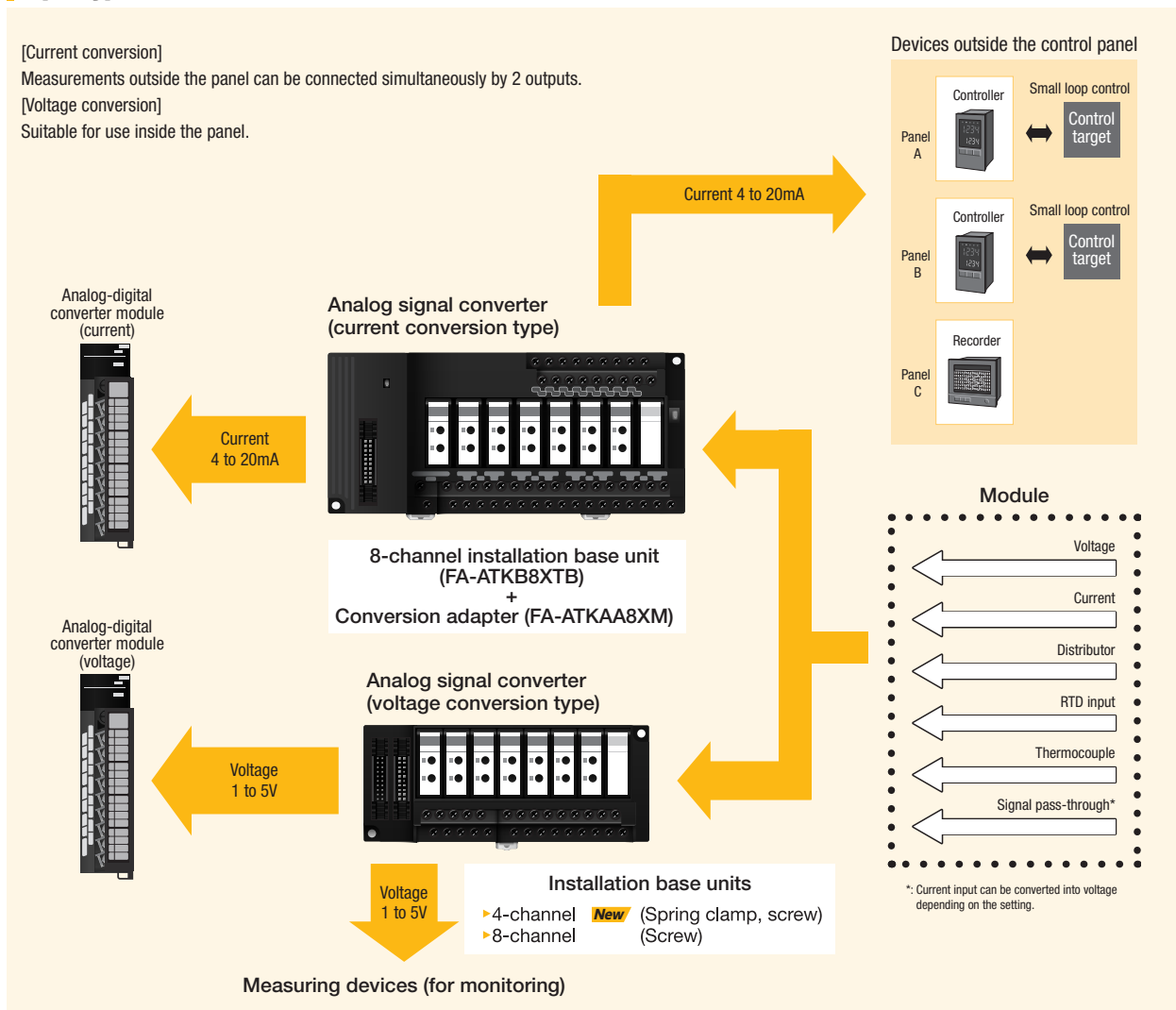
For details, refer to ▶ P.288 to P.318

Converting signals into analog signals that can be handled by the connected device

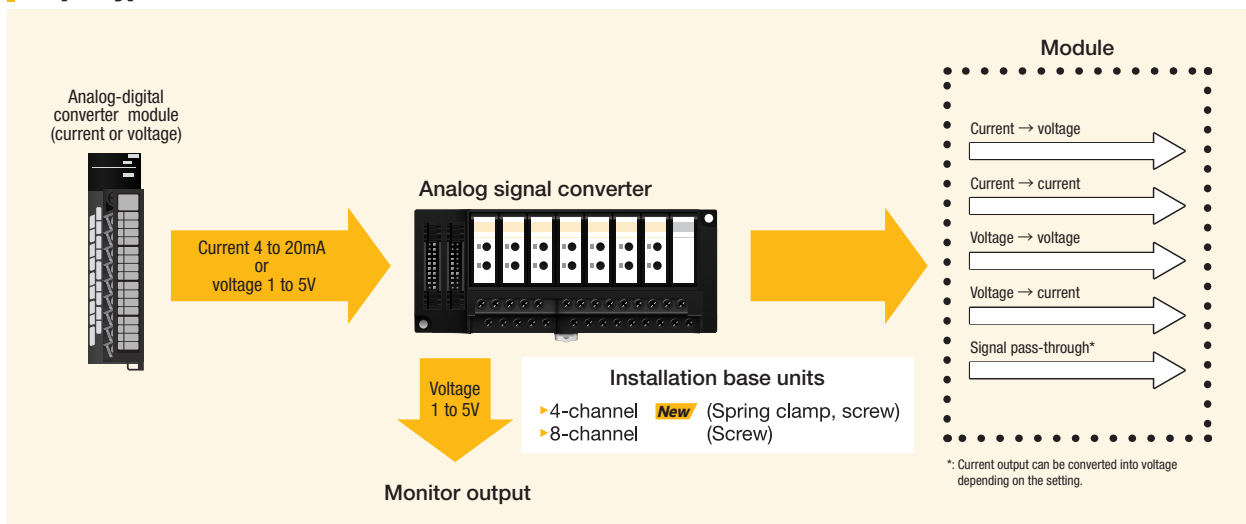
Programmable controller can be unified in current 4 to 20mA or voltage 1 to 5V for conversion to a signal that matches device to be turned connection. Unifying the modules on the programmable controller side reduces the types of modules for maintenance.

Input type

[Current conversion]
Measurements outside the panel can be connected simultaneously by 2 outputs.
[Voltage conversion]
Suitable for use inside the panel.






Output type



Selecting an installation base unit suited for the number of channels

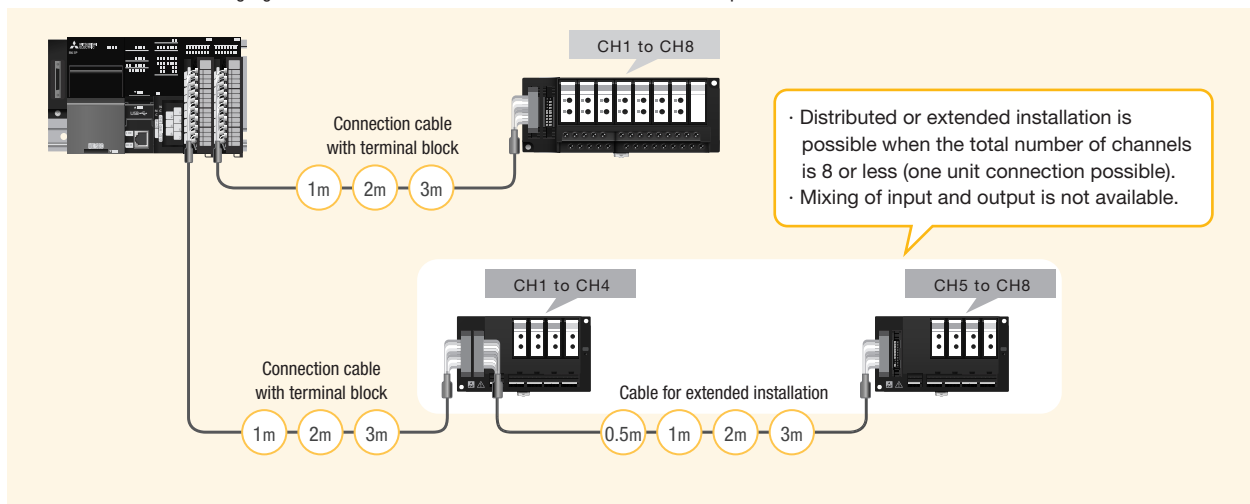
With the 4-channel installation base unit, unused points existed with the 8-channel installation base unit can be eliminated and distributed installation is possible within 8 channels in total. Additionally, the spring clamp terminal type product reduces the time required for wiring and maintenance because screws are not used.

| 4-channel installation base unit | | 8-channel installation base unit | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| New Spring clamp terminal type | New Screw terminal type | Screw terminal type | |
|  <ul style="list-style-type: none"> Input (voltage connection) Output (common for current and voltage) |  <ul style="list-style-type: none"> Input (voltage connection) Output (common for current and voltage) |  <ul style="list-style-type: none"> Input (current connection/voltage connection) Output (common for current and voltage) | |

Distributed installation using dedicated cables

Dedicated cables can be used to connect the programmable controller and analog signal converters.

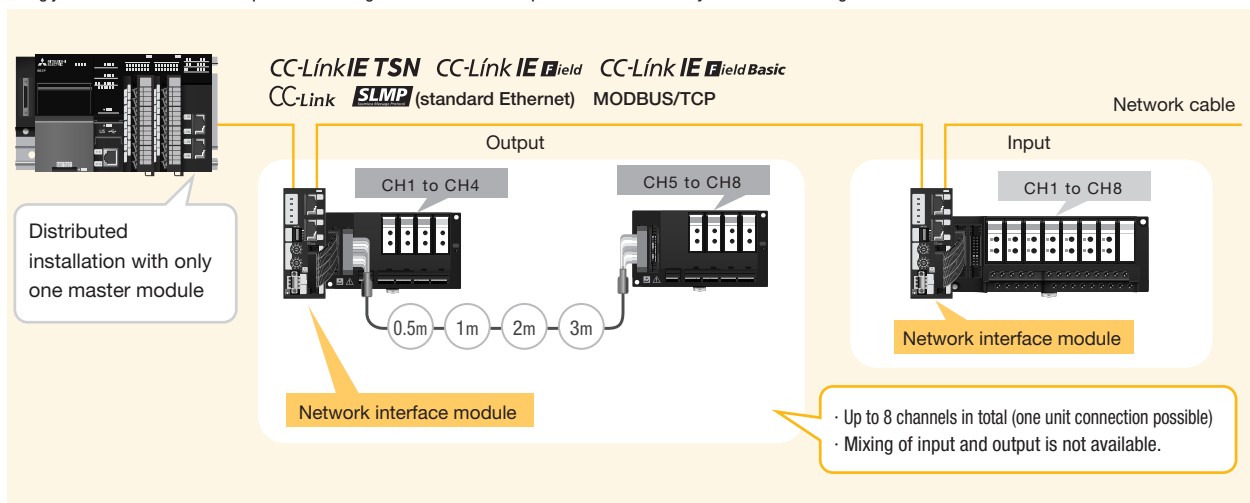
Distributed installation of analog signal converters near the connected devices such as sensors is possible within 8 channels in total.



Distributed installation using network interface modules

Distributed installation is also possible by connecting the network master module of the programmable controller and the network interface module using a network cable.

Using just one network cable simplifies the wiring between the control panel and devices/relay box and the wiring for additional device installation.



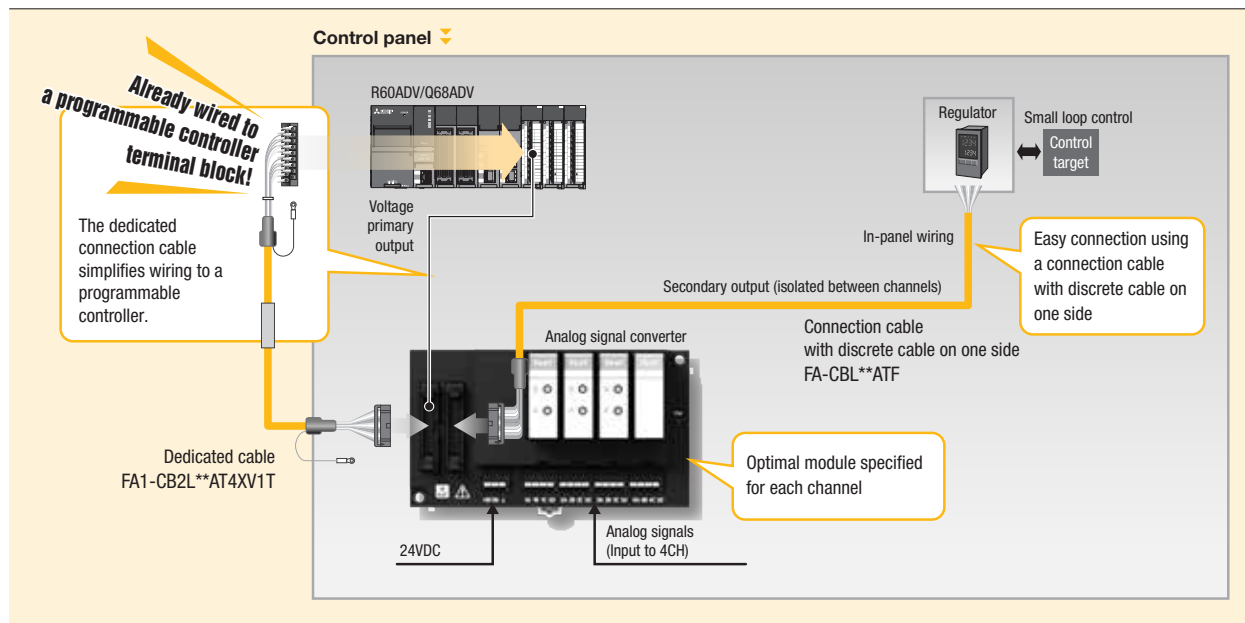
For details, refer to ▶ P.288 to P.318

Achieving wire saving with dedicated cables and the secondary output function

Time and costs for wiring are reduced significantly by using dedicated cables for the programmable controller connection and by using the secondary output function for the regulator/indicator connection.

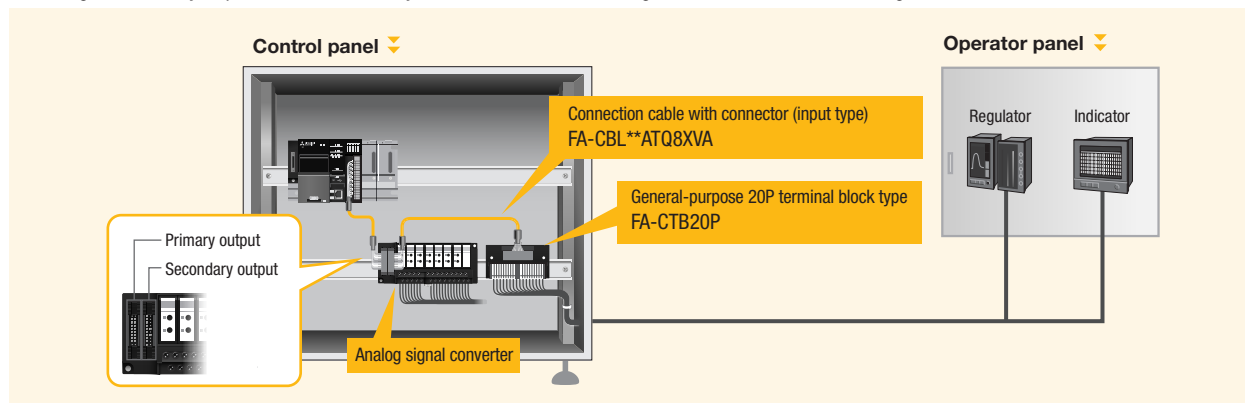
- Secondary output function [Input]
The same signal as the analog signal (voltage) input to the programmable controller is output from the secondary output terminal.
- Secondary output function [Output]
The same signal as the analog signal (voltage or current) output from the programmable controller is output from the secondary output terminal.

Configuration example



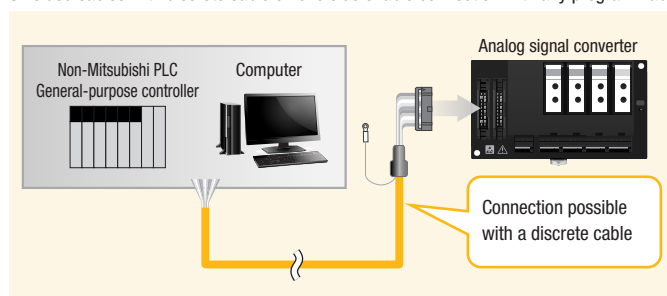
Secondary output via terminal block

Converting the secondary output connector into a relay terminal block facilitates wiring to distributed devices such as regulators and indicators.



Connecting with a non-Mitsubishi PLC and computer

Shielded cables with discrete cable on one side enable connection with any programmable controller regardless of the manufacturer.

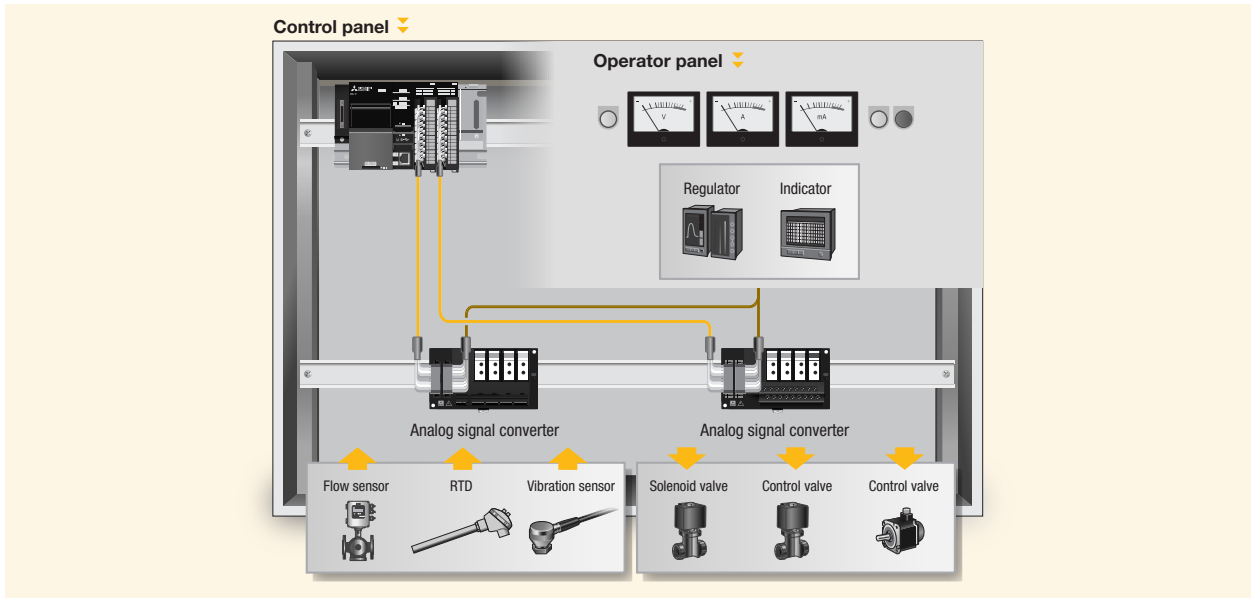


| Cable length | For input signals | For output signals |
|--------------|-------------------|--------------------|
| 1m | FA-CBL10ATF | FA-CBL10ATYF |
| 2m | FA-CBL20ATF | FA-CBL20ATYF |
| 3m | FA-CBL30ATF | FA-CBL30ATYF |

Visualization of various analog signals


Collecting and controlling analog signals

An optimal module can be mounted for each channel, and the secondary output function enables easy wiring with devices such as regulators. As a result, data of the devices such as sensors can be easily visualized.




Various analog modules



Modules for input signals

| | | | | |
|-------------------------------------------------------------------------------------|--------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Voltage input | FA-ATSVM1XV** | 0 to 5VDC, 1 to 5VDC, -10 to +10VDC | <ul style="list-style-type: none"> • Humidity sensor • Vibration sensor • Pressure sensor • Laser distance sensor • Flow meter • Wattmeter or other devices |
| | Current input | FA-ATSVM1XA420 | 4 to 20mADC | |
| | Distributor | FA-ATSVM1XD | 2-wire transmitter | |
| | RTD input | FA-ATSVM1XR** | PT100 (-200 to +650°C, 0 to +100/200°C) JPT100 (-200 to +600°C) | |
| | Thermocouple input | FA-ATSVM1XT** | Type B thermocouple (+600 to +1700°C) Type S thermocouple (0 to +1600°C) Type E thermocouple (-200 to +900°C) Type T thermocouple (-200 to +350°C) Type R thermocouple (0 to +1600°C) Type K thermocouple (-200 to +1200°C, 0 to +400/600/800°C) Type J thermocouple (-40 to +750°C) Type N thermocouple (-200 to +1250°C) | |

Modules for output signals

| | | | | |
|-------------------------------------------------------------------------------------|---------------------------|---------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Voltage to voltage output | FA-ATSVM1YV** | 0 to 5VDC, 1 to 5VDC, 0 to 10VDC, -10 to +10VDC | <ul style="list-style-type: none"> • Solenoid valve • Recorder • Temperature controller • Indicator • Inverter (speed control) • Servo amplifier (torque control) or other devices |
| | Voltage to current output | FA-ATSVM1YA** | 0 to 20mADC, 4 to 20mA | |
| | Current to voltage output | FA-ATSAM1YV** | 0 to 5VDC, 1 to 5VDC, 0 to 10VDC, -10 to +10VDC | |
| | Current to current output | FA-ATSAM1YA** | 0 to 20mADC, 4 to 20mA | |

Modules common for input/output signals

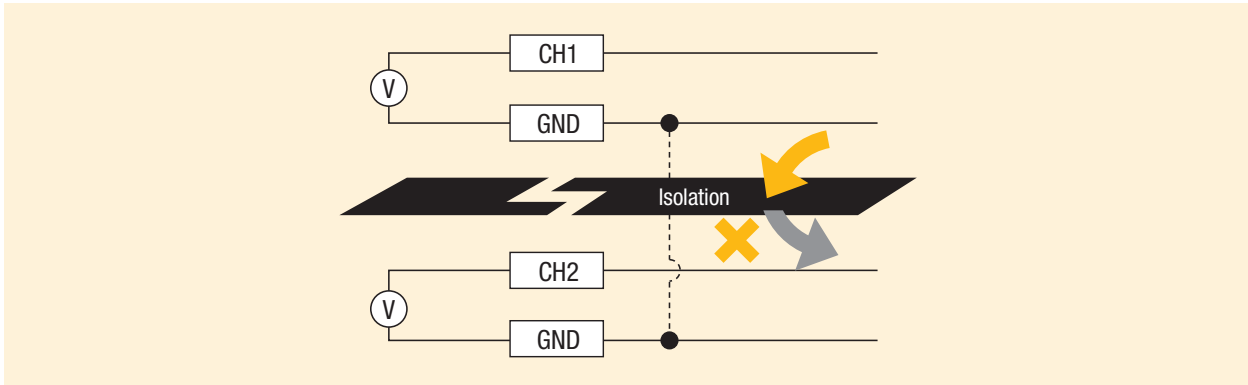
| | | | |
|-------------------------------------------------------------------------------------|---------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Signal pass-through | FA-ATFTMX | <ul style="list-style-type: none"> • Pass-through module for non-isolated signals (The current is converted into voltage.) • 1 to 5VDC, 4 to 20mA |
|  | Dummy module | FA-ATNDM5 | <ul style="list-style-type: none"> • For dust protection • Quantity: 5 |

For details, refer to ▶ P.288 to P.318

Noise immunity

Isolation between channels

The circuit is isolated to prevent each channel from being affected by other channels (analog signals) (except for signal pass-through modules).



Shielded cables

For the cable connecting the programmable controller and the installation base unit, a terminal block or shielded cable is used on the programmable controller side. For the cable connecting the installation base units, a shielded cable is used.

Connection cables between programmable controllers and installation bases

MELSEC iQ-R/-Q series terminal block



Cable with spring clamp terminal block



Connection cable between installation bases



Discrete cable



Easy startup and maintenance

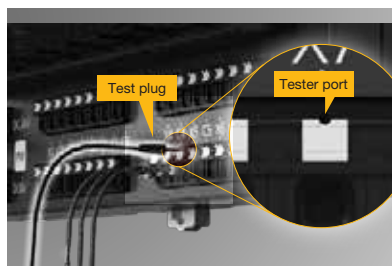
Module replacement

Tools such as screwdrivers are not required for module replacement.



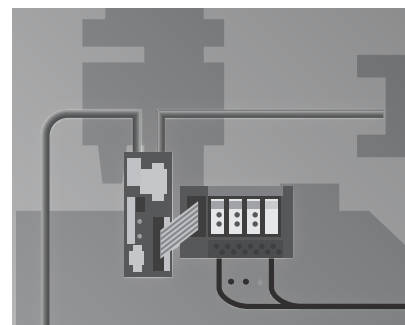
Continuity check using a tester port

The time required for continuity check can be reduced because the spring clamp terminal type product has a tester port.



Installation near the connected devices

Installing the product near devices such as sensors improves the efficiency in wiring checks during maintenance.



Selection using analog signal converters

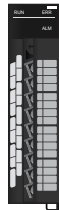
This section describes the points for achieving wiring saving and time saving.

Analog signals for 8 points maximum can be converted into output signals for each device using one module.

Analog-digital converter module

Main model

MELSEC iQ-R series
R60ADV8, R60ADI8, etc.
MELSEC-Q series
Q68ADV, Q68ADI, etc.



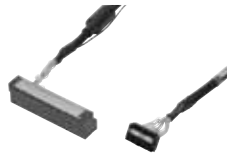
Selection point

Distributed installation is possible
(8 channels → 4 channels × 2).
As a result, optimal modules can be
mounted for the connected devices
and the time and wire saving devices can
be installed near the devices.

Connection cable

Programmable
controller
Terminal block 18P

Signal
converter
MIL 20P



FA-CBL**ATQ8XVT

Analog signal converter

Input module

4-channel Installation base unit



FA1-AT1B4X1TE

Voltage input

FA-ATSVM1XV15

Current input

FA-ATSVM1XA420

Distributor

FA-ATSVM1XD

Thermocouple input

FA-ATSVM1XTK0040

Analog signal converter

Input module

4-channel Installation base unit



FA1-AT1B4X1TE

Current input

FA-ATSVM1XA420

Distributor

FA-ATSVM1XD

Thermocouple input

FA-ATSVM1XTR
FA-ATSVM1XTK

Module list

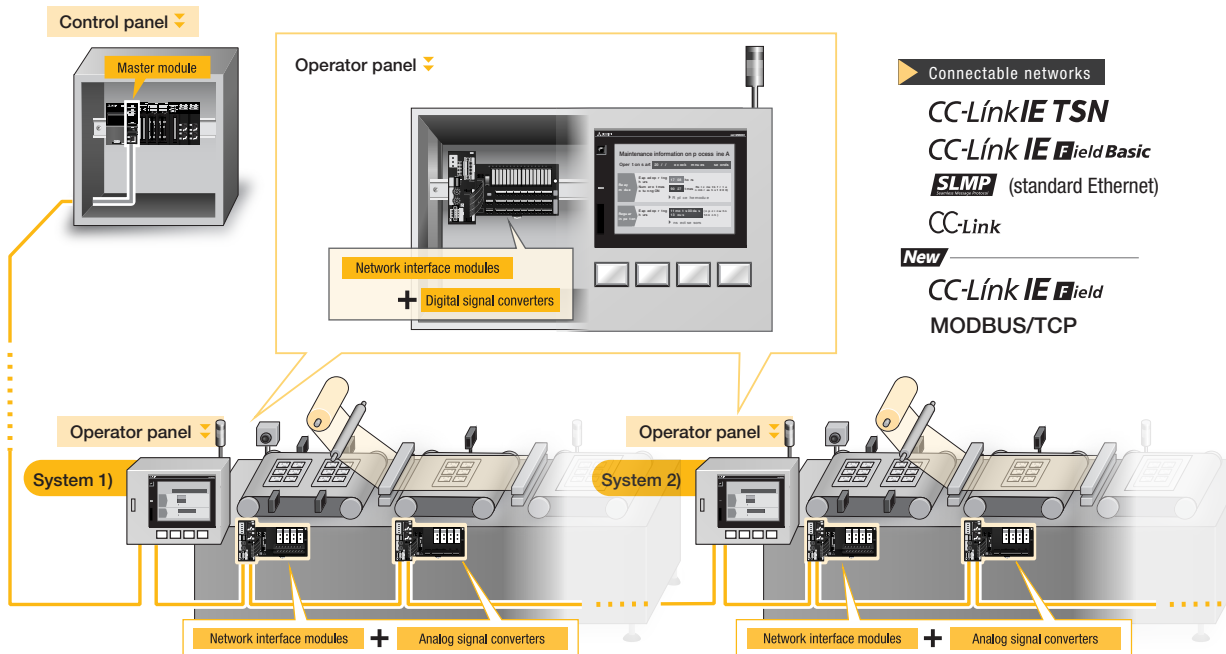
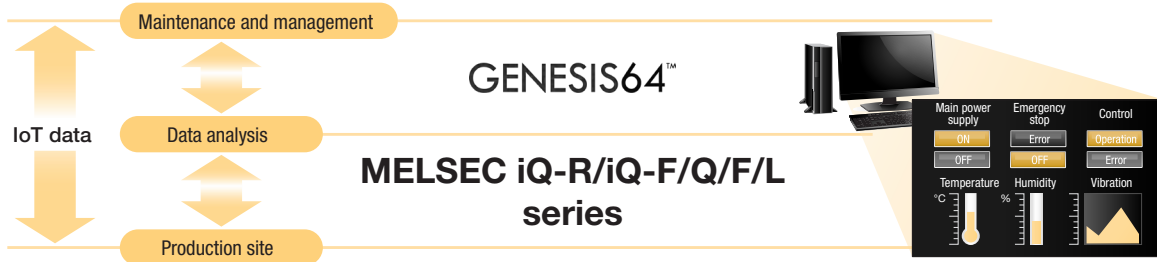
| | | Type | | | Model | |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------|
| Voltage input module | Isolator | 0 to 5V | Connectable device | <ul style="list-style-type: none"> Humidity sensor Vibration sensor Flow meter Wattmeter Pressure sensor Laser distance sensor | FA-ATSVM1XV05 | |
| | | 1 to 5V | | | FA-ATSVM1XV15 | |
| -10 to 10V | FA-ATSVM1XV1010 | | | | | |
| Current input module | 4 to 20mA | FA-ATSVM1XA420 | | | | |
| Distributor | 4 to 20mA | FA-ATSVM1XD | | | | |
| RTD input module | RTD | JPt100, -200 to 600°C | | | <ul style="list-style-type: none"> RTD | FA-ATSVM1XRJPT |
| | | Pt100, -200 to 650°C | | | | FA-ATSVM1XRPT |
| | | Pt100, 0 to 100°C | | | | FA-ATSVM1XRPT0010 |
| | | Pt100, 0 to 200°C | | | | FA-ATSVM1XRPT0020 |
| Thermocouple temperature input module | Thermocouple | Type B thermocouple, +600 to +1700°C | | | <ul style="list-style-type: none"> Thermocouple | FA-ATSVM1XTB |
| | | Type S thermocouple, 0 to +1600°C | FA-ATSVM1XTS | | | |
| | | Type E thermocouple, -200 to +900°C | FA-ATSVM1XTE | | | |
| | | Type T thermocouple, -200 to +350°C | FA-ATSVM1XTT | | | |
| | | Type R thermocouple, 0 to +1600°C | FA-ATSVM1XTR | | | |
| | | Type K thermocouple, -200 to +1200°C | FA-ATSVM1XTK | | | |
| | | Type K thermocouple, 0 to 400°C | FA-ATSVM1XTK0040 | | | |
| | | Type K thermocouple, 0 to 600°C | FA-ATSVM1XTK0060 | | | |
| | | Type K thermocouple, 0 to 800°C | FA-ATSVM1XTK0080 | | | |
| | | Type J thermocouple, -40 to +750°C | FA-ATSVM1XTJ | | | |
| Type N thermocouple, -200 to +1250°C | FA-ATSVM1XTN | | | | | |
| Current to voltage output module | Isolator | 0 to 5V | Connectable device | <ul style="list-style-type: none"> Solenoid valve Recorder Temperature controller Indicator Inverter (speed control) Servo amplifier (torque control) | FA-ATSAM1YV05 | |
| | | 1 to 5V | | | FA-ATSAM1YV15 | |
| Current to current output module | Isolator | 0 to 10V | | | FA-ATSAM1YV010 | |
| | | -10 to 10V | | | FA-ATSAM1YV1010 | |
| Voltage to voltage output module | Isolator | 0 to 20mA | | | FA-ATSAM1YA020 | |
| | | 4 to 20mA | | | FA-ATSAM1YA420 | |
| Voltage to current output module | Isolator | 0 to 5V | | | FA-ATSVM1YV05 | |
| | | 1 to 5V | | | FA-ATSVM1YV15 | |
| Voltage to current output module | Isolator | 0 to 10V | | | FA-ATSVM1YV010 | |
| | | -10 to 10V | | | FA-ATSVM1YV1010 | |
| Voltage to current output module | Isolator | 0 to 20mA | FA-ATSVM1YA020 | | | |
| | | 4 to 20mA | FA-ATSVM1YA420 | | | |
| Pass-through module | <ul style="list-style-type: none"> Pass-through module for non-isolated signals (1 to 5V) Current to voltage conversion available by shorting external terminals (4 to 20mA converted to 1 to 5V) | | | FA-ATFTMX | | |
| Dummy module | Modules to protect empty slots of an installation base unit from dust (quantity: 5). | | | FA-ATNDM5 | | |

Related products

Network interface modules

Network interface modules

The network interface module easily connects analog signal converters and digital signal converters (terminal modules) to networks. Data is batch-collected from devices, enabling small-scale IoT.



Network interface modules

| | | | Supported network | | |
|-----------------------------------------------|---------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------|
| | | | CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) MODBUS TCP/IP | CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) | CC-Link |
| Digital signal converter (terminal module) | Input (sink/source) | Connection cable included | FA3-TH1M16XC-01C | FA3-TH1T16XC-01C | FA3-TH1C16XC-01C |
| | | Connection cable not included | FA3-TH1M16XC | FA3-TH1T16XC | FA3-TH1C16XC |
| | Output (sink) | Connection cable included | FA3-TH1M16Y-01C | FA3-TH1T16Y-01C | FA3-TH1C16Y-01C |
| | | Connection cable not included | FA3-TH1M16Y | FA3-TH1T16Y | FA3-TH1C16Y |
| | Output (source) | Connection cable included | FA3-TH1M16YE-01C | FA3-TH1T16YE-01C | FA3-TH1C16YE-01C |
| | | Connection cable not included | FA3-TH1M16YE | FA3-TH1T16YE | FA3-TH1C16YE |
| Analog signal converter | Input | Connection cable included | FA3-AT1M8X-01C | FA3-AT1T8X-01C | FA3-AT1C8X-01C |
| | | Connection cable not included | FA3-AT1M8X | FA3-AT1T8X | FA3-AT1C8X |
| | Output | Connection cable included | FA3-AT1M8Y-01C | FA3-AT1T8Y-01C | FA3-AT1C8Y-01C |
| | | Connection cable not included | FA3-AT1M8Y | FA3-AT1T8Y | FA3-AT1C8Y |

When an analog signal converter is used

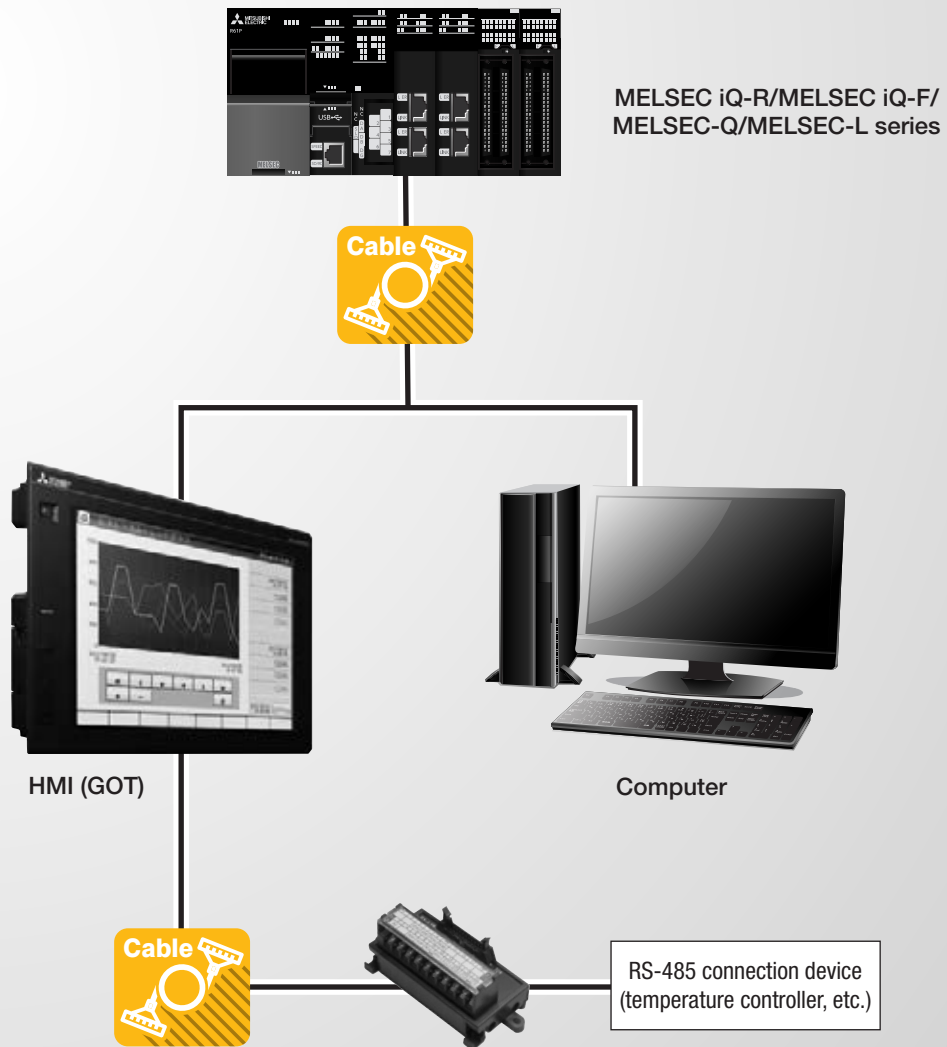
| Programmable controller module IPC | Network interface module | | Analog signal converter | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Product | Model | Installation base unit | Mountable module (Pass-through modules cannot be used.) | |
| | | | Model | Specifications | Model |
| CC-Link IE TSN master station · MELSEC iQ-R · MELSEC iQ-F CC-Link IE Field master station · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L · MELSEC-F CC-Link IE Field Basic master station · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L SLMP client · MELIPC · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L · MELSEC-F MODBUS/TCP · MELSEC iQ-R · MELSEC-Q · MELSEC-L | Analog signal converter for input signals | With a dedicated cable FA3-AT1□8X-01C Without a dedicated cable FA3-AT1□8X | 4-channel spring clamp terminal block FA1-AT1B4X1TE | Voltage input 0 to 5V 1 to 5V -10 to 10V Current input 4 to 20mA Distributor (2-wire transmitter) 4 to 20mA RTD input Pt100 -200 to +650°C Pt100 0 to +100°C Pt100 0 to +200°C JPt100 -200 to +600°C Thermocouple input Type B thermocouple +600 to +1700°C Type R thermocouple 0 to +1600°C Type S thermocouple 0 to +1600°C Type K thermocouple -200 to +1200°C 0 to +400°C 0 to +600°C 0 to +800°C Type E thermocouple -200 to +900°C Type J thermocouple -40 to +750°C Type T thermocouple -200 to +350°C Type N thermocouple -200 to +1250°C Dummy Quantity: 5 | FA-ATSVM1XV05 FA-ATSVM1XV15 FA-ATSVM1XV1010 FA-ATSVM1XA420 FA-ATSVM1XD FA-ATSVM1XRPT FA-ATSVM1XRPT0010 FA-ATSVM1XRPT0020 FA-ATSVM1XRJPT FA-ATSVM1XTB FA-ATSVM1XTR FA-ATSVM1XTS FA-ATSVM1XTK FA-ATSVM1XTK0040 FA-ATSVM1XTK0060 FA-ATSVM1XTK0080 FA-ATSVM1XTE FA-ATSVM1XTJ FA-ATSVM1XTT FA-ATSVM1XTN FA-ATNDM5 |
| | | | 4-channel screw terminal block FA1-AT1B4X1TB 8-channel screw terminal block FA-ATB8XTB | | |
| CC-Link master station · MELSEC iQ-R · MELSEC iQ-F · MELSEC-Q · MELSEC-L · MELSEC-F General-purpose programmable controller (standard Ethernet) | Analog signal converter for output signals | With a dedicated cable FA3-AT1□8Y-01C Without a dedicated cable FA3-AT1□8Y | 4-channel spring clamp terminal block FA1-AT1B4Y1TE 4-channel screw terminal block FA1-AT1B4Y1TB 8-channel screw terminal block FA-ATB8YTB | Voltage output 0 to 5V 1 to 5V 0 to 10V -10 to 10V Current output 0 to 20mA 4 to 20mA Dummy Quantity: 5 | FA-ATSVM1YV05 FA-ATSVM1YV15 FA-ATSVM1YV010 FA-ATSVM1YV1010 FA-ATSVM1YA020 FA-ATSVM1YA420 FA-ATNDM5 |

Supported network

| | |
|-------|------------------------------------------------------------------------------------------------|
| □ = M | CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, SLMP (standard Ethernet), MODBUS/TCP |
| □ = T | CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, SLMP (standard Ethernet) |
| □ = C | CC-Link |

Communication cable and cable for HMI (GOT)

Easy connection between the programmable controller and computer, HMI (GOT)/HMI (GOT) and RS-485 device



Available for communication method between the programmable controller and computer, HMI (GOT)

USB, RS-232, and RS-422 communications are supported.

Conversion from RS-232 to RS-422

Converting to RS-422 enables to make longer communication distance.

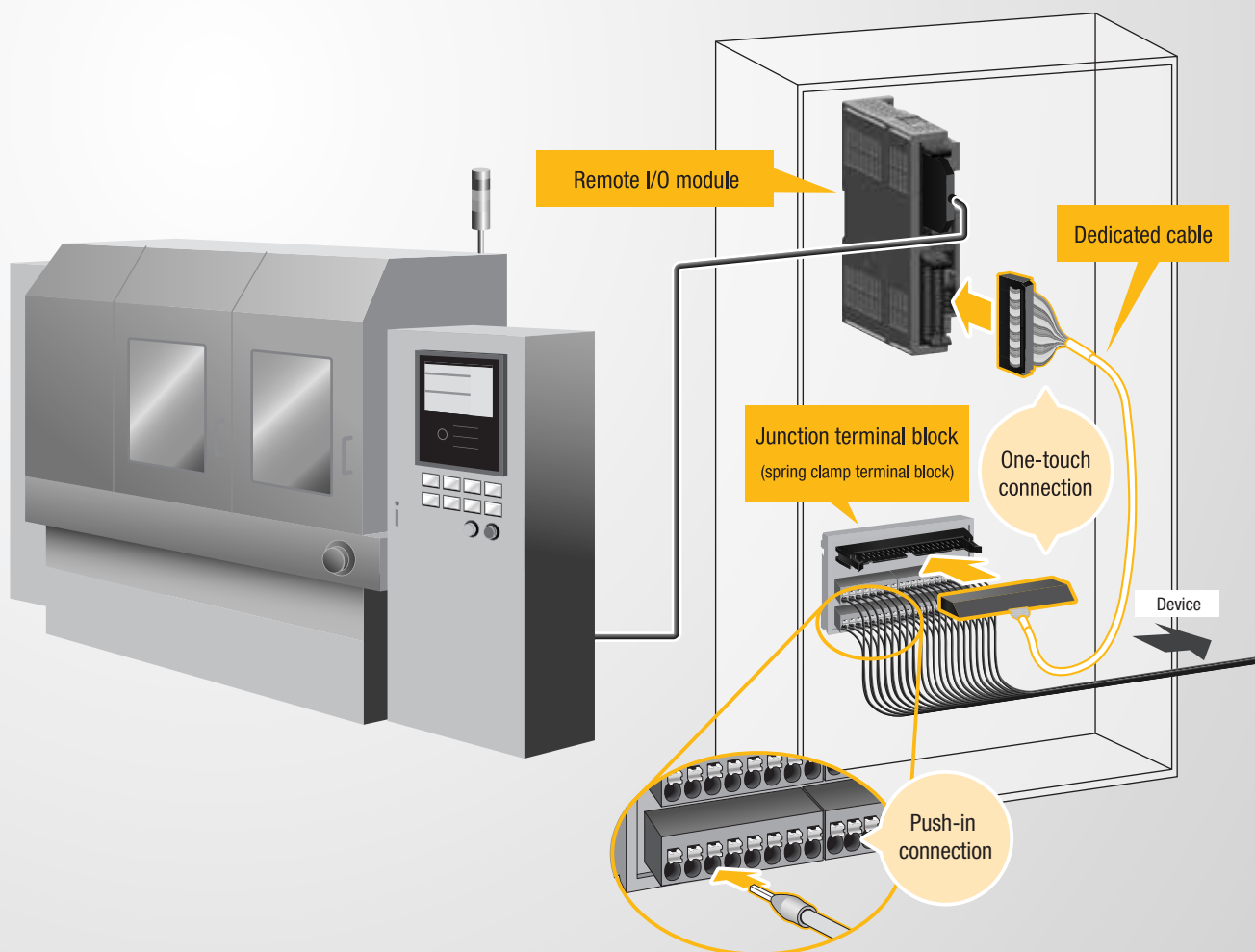
Conversion from connector to terminal block

RS-485 communication connector for GT27/25 models of GOT2000 series, GT16 model of GOT1000 series can be converted into the terminal blocks.

Junction terminal blocks for CNCs

Connection between remote I/O module and devices

Wiring work reduction with spring clamp terminal blocks



P.53

One-touch connection with a dedicated cable

The remote I/O module can be connected to a junction terminal block in a single step using a dedicated cable. Wiring work can be reduced significantly. (Approx. 5 seconds are required for one connection.)

P.53

Wiring work reduction with spring clamp terminal blocks

Wires are pushed into the terminals of a spring clamp terminal block without tightening screws. This helps to reduce the time required for wiring and maintenance.

P.53

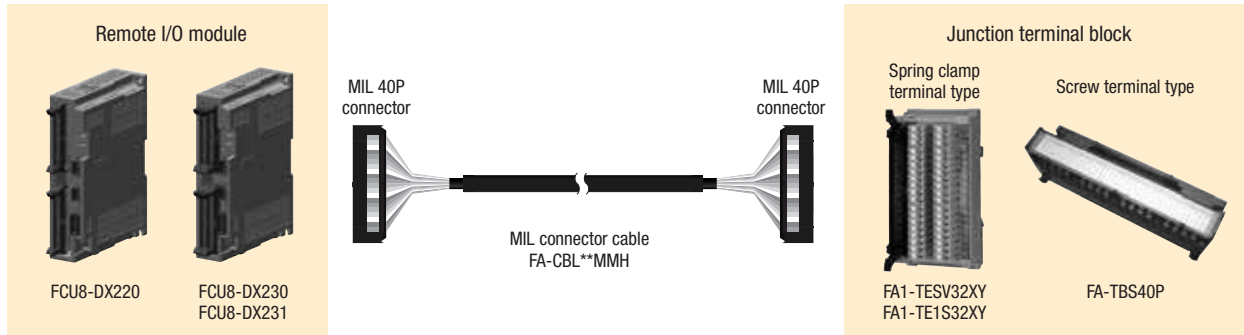
Stable connection with dedicated cables

Assembled dedicated cables are available. Use of these dedicated cables reduces the time required for constructing cables. Also, stable connection quality is guaranteed because no soldering skills are required.

For details, refer to ▶ P.120 to P.217

One-touch connection with a dedicated cable

The remote I/O module can be connected to a junction terminal block in a single step using a dedicated cable. Wiring work can be reduced significantly. (Approx. 5 seconds are required for one connection.)



Wiring work reduction with spring clamp terminal blocks

Wires are pushed into the terminals of a spring clamp terminal block without tightening screws. This helps to reduce the time required for wiring and maintenance.

Easy wiring

Wiring time

Stable connection

Uniform quality

Less maintenance

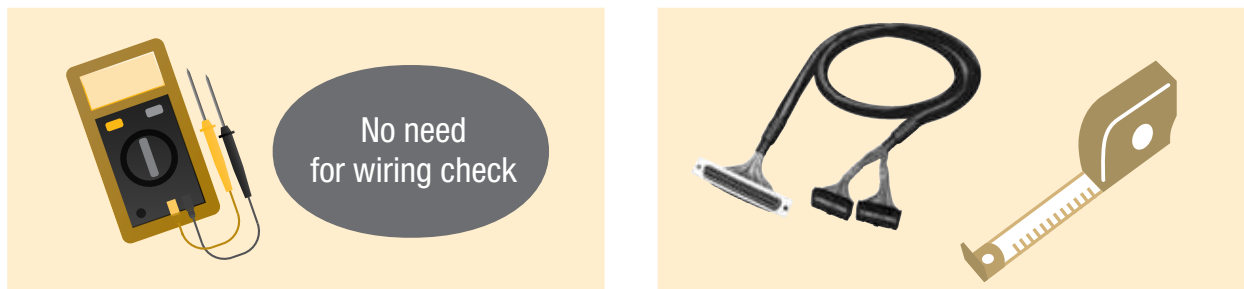
Wiring time can be significantly reduced by push-in connection.
 *: Calculated by comparing the time taken by non-experts with two years of experience (Data sourced from Japan Switchboard & control system Industries Association)

Screws are vibration resistant. Uniform quality is guaranteed for wiring since no special skills are required.

Screw tightening during maintenance is not required, reducing work load of workers. Rewiring work is also facilitated by push-in connection.

Stable connection with dedicated cables

Assembled dedicated cables are available. Use of these dedicated cables reduces the time required for constructing cables. Also, stable connection quality is guaranteed because no soldering skills are required.



No need for wiring check

Dedicated cables have already been assembled. Wiring check per point, which is required for fabricated cables, is not required.

Cable length customization

The cable length can be customized. (For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

Selection tool

The selection tool on our website helps select the optimum terminal blocks and cables for Mitsubishi Electric programmable controllers and HMIs (GOTs).

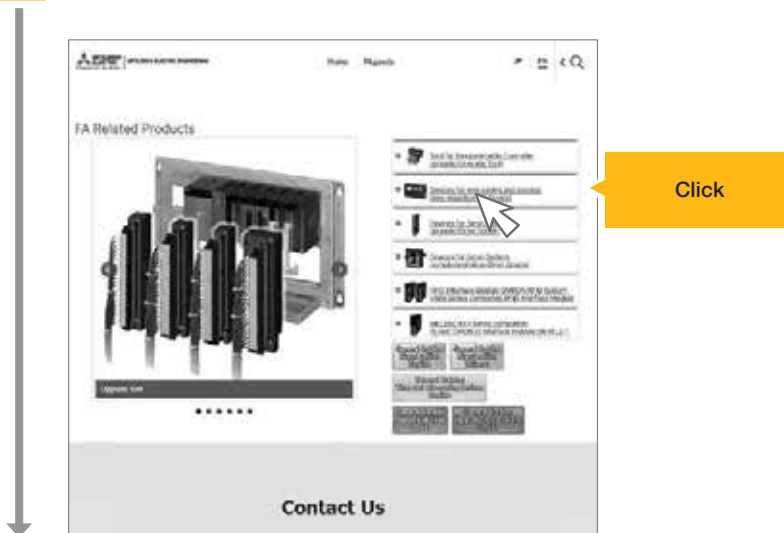
The connectable models are displayed by entering/selecting the model name of the programmable controller or HMI (GOT).

www.mitsubishielectricengineering.com/sales/fa/meefan/

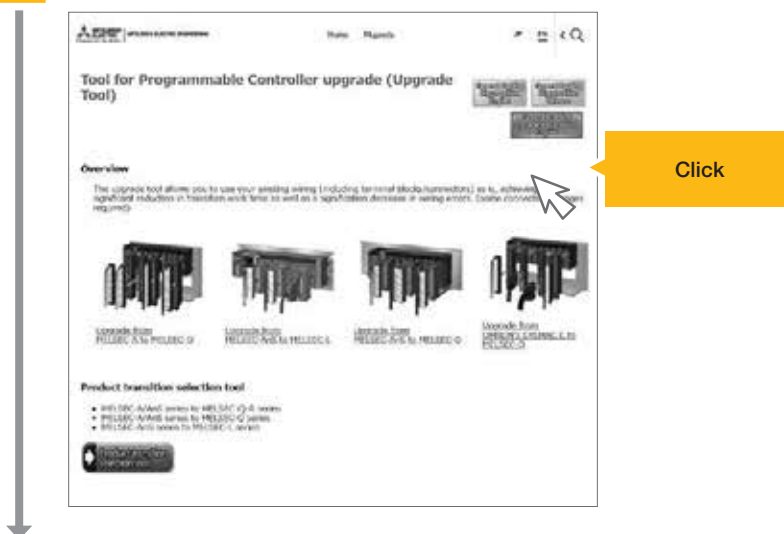


From our website
(www.mitsubishielectricengineering.com/sales/fa/meefan/)

- 1 Click "Devices for wire saving and process time reduction (FAGoods)".



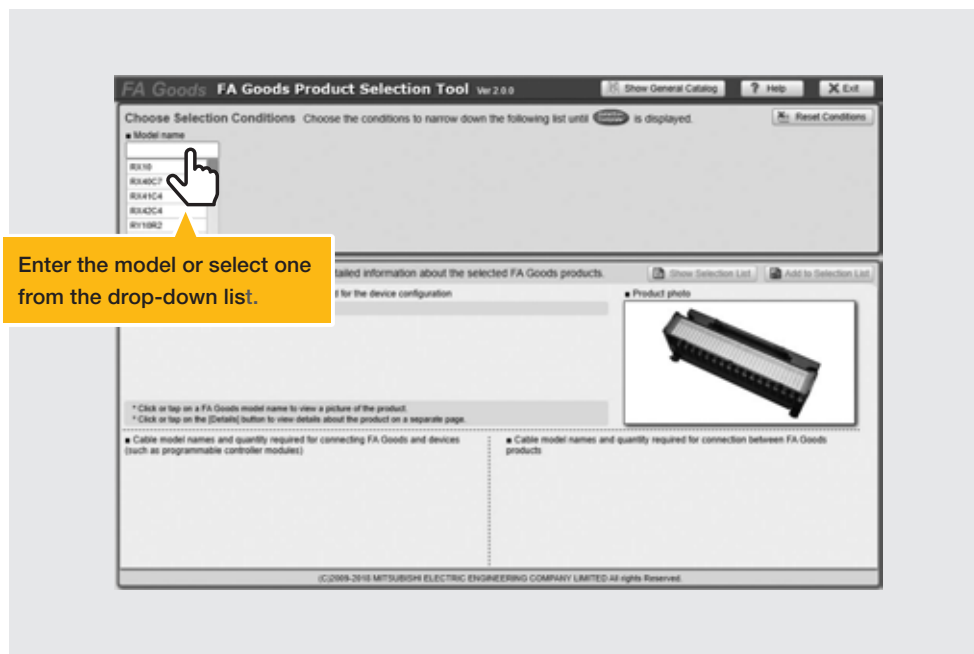
- 2 Click the [FAGoods Product Selection Tool] button.



The FAGoods product selection tool starts.

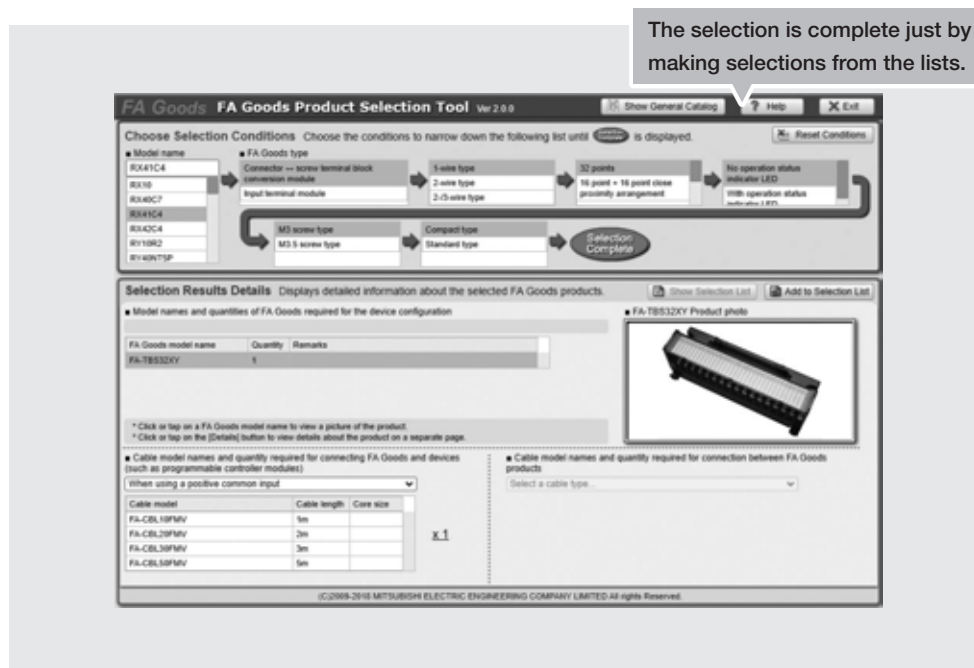
3

The following window appears.
Enter the model name of the MELSEC series module in the "Model name" field. (Alternatively, select the model from the drop-down list.)



4

In the "FAgoods type" field, select the product and its specifications from the lists. The connectable terminal blocks and connection cables between the programmable controller and the terminal block are also displayed.



Selection chart

MELSEC iQ-R series <I/O modules>

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | | | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|------------------------------------|--------------------------------------------|------------------------|------------------------------------|------------------------|---------------------|--------------------------------|--------------|------------------|-------|
| RX10 | AC | Junction terminal block | Screw | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | | |
| | | | | 2-wire type | FA-TB161ACC2 | P.153 | | | | | | |
| RX10-TS | AC | Discrete cable | 0.75mm ² type (8A max.) | | | | | FA1-CB3L07SQ**E1F18 | P.156 | | | |
| | | | 0.3mm ² type (4A max.) | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | | |
| RX28 | AC | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | |
| RX40C7 | Positive common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 | | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 | | | | |
| | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | | |
| | | | | 1-row terminal block | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**M20 | P.168 | | | |
| | | | | | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**YM20 | P.169 | | | |
| | | | | | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**TMV20 | P.170 | | | |
| | | | | 3-row terminal block | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**M20 | P.168 | | | |
| | | | | | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**YM20 | P.169 | | | |
| | | | | e-CON | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**M20 | P.168 | | | |
| | | | | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | FA-CBL**YM20 | P.169 | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-CBL**FM2V | P.162 | | | |
| | | | | | | Mountable module ▶ P.283 | P.236 | FA-CBL**FM2LV | P.163 | | | |
| | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | FA-CBL**MMH20 | P.174 | (for distributed installation) | | | |
| | | | | | FA1-TH8X24RA1L20S1E | P.232 | FA-CBL**M20 | P.168 | | | | |
| | | | | | FA1-TH16X24RA1L20S1E | P.234 | FA-CBL**YM20 | P.169 | | | | |
| | | | | | FA1-TH4X24RA1H20S1E | P.230 | FA-CBL**TMV20 | P.170 | | | | |
| | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | FA-CBL**MMH20 | P.174 | (for distributed installation) | | | |
| | | | | | FA1-TH16X24RA1H20S1E | P.234 | FA-CBL**M20 | P.168 | | | | |
| | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | P.238 | FA-CBL**M20 | P.168 | | | |
| | | | | | | 24VDC, 10mA | 2-wire type | FA-TH16X24D31 | P.239 | FA-CBL**YM20 | P.169 | |
| 48VDC, 5mA | 2-wire type | | | | | FA-TH16X24D31L | P.240 | FA-CBL**TMV20 | P.170 | | | |
| 100VDC, 2.5mA | 2-wire type | | | | | FA-TH16X100A31 | P.243 | | | | | |
| 100VAC, 8mA | 2-wire type | | | | | FA-TH16X100A31L | P.244 | | | | | |
| 200VAC, 7.5mA | 2-wire type | | | | | FA-TH16X200A31 | P.245 | | | | | |
| FA-TH16X200A31L | P.246 | | | | | | | | | | | |
| Negative common | Junction terminal block | Spring clamp | Screw | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 | | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 | | | | |
| | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | | |
| | | | | 1-row terminal block | 2-wire type | FA-TB1L16XYP | P.134 | FA-CBL**M20 | P.168 | | | |
| | | | | | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**YM20 | P.169 | | | |
| | | | | | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**TD | P.183 | | | |
| | | | | 3-row terminal block | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**M20 | P.168 | | | |
| | | | | | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**YM20 | P.169 | | | |
| | | | | e-CON | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**M20 | P.168 | | | |
| | | | | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | FA-CBL**YM20 | P.169 | | | |
| RX40C7-TS | Positive common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM1F18 | P.157 | | | | |
| | | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA1-CB1L**EM1F18 | P.157 |
| | | | | | | | | | Mountable module ▶ P.283 | P.236 | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | (for distributed installation) | | | |
| | | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | |
| | FA1-TH16X24RA1L20S1E | P.234 | | | | | | | | | | |
| | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E | P.230 | | | | | | | |
| | | | | FA1-TH8X24RA1H20S1E | P.232 | | | | | | | |
| | FA1-TH16X24RA1H20S1E | P.234 | | | | | | | | | | |
| | Negative common | Junction terminal block | Spring clamp | Screw | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM1F18 | P.157 | | | |
| Common | | | | | Discrete cable | 0.75mm ² type (8A max.) | | | FA1-CB3L07SQ**E1F18 | P.156 | | |
| | | | | | | 0.3mm ² type (4A max.) | | FA1-CB3L03SQ**E1F18 | P.156 | | | |
| RX40NC6B | Negative common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 | | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 | | | | |
| | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TMV20 | P.170 | | | | |
| | | | | 1-row terminal block | 2-wire type | FA-TB1L16XYP | P.134 | FA-CBL**TD | P.183 | | | |
| | | | | | 2-wire type | FA-TB161ACC1 | P.153 | FA-CBL**M20 | P.168 | | | |
| | | | | | 2-wire type | FA-TB161ACC1 | P.153 | FA-CBL**YM20 | P.169 | | | |
| | | | | 3-row terminal block | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**M20 | P.168 | | | |
| | | | | | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**YM20 | P.169 | | | |
| | | | | e-CON | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**M20 | P.168 | | | |
| | | | | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | FA-CBL**TMV20 | P.170 | | | |
| RX40PC6H | Positive common | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | |
| RX40NC6H | Negative common | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | Model | Connection cable | | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------|
| RX41C4 RX41C6HS RX42C4 | Positive common | Junction terminal block | Spring clamp | 1-wire type | FA1-TESV32XY P.126 | FA-CBL**FMV P.161 | | |
| | | | | 1-wire type | FA1-TE1S32XY P.127 | | | |
| | | | Screw | Small-size terminal block | 1-wire type | | FA-TB32XY P.132 | |
| | | | | | 1-row terminal block | | FA-TBS32XY P.133 | |
| | | | | | LED | | FA-TB32XYL P.134 | |
| | | | | 3-row terminal block | FA-TB32XYN3 P.135 | | | |
| | | | | Distributed 8-point (0 to 7) | 3-wire type | | FA-TB8XY1 P.138 | |
| | | | FA-TB8XY2 P.138 | | | | | |
| | | | FA-TB8XY3 P.138 | | | | | |
| | | | Distributed 8-point (8 to F) | | 3-wire type | | FA-TB8XY4 P.138 | |
| | | | | | | | Distributed 8-point (10 to 17) | FA-TB8XY1 P.137 |
| | | | | | | | Distributed 16-point (10 to 1F) | FA-TB16XY2N P.137 |
| | | | Distributed 16-point (0 to F) | 2-wire type | FA-TB16XY1 P.139 | | | |
| | | | | | Distributed 16-point (10 to 1F) | | FA-TB16XY2 P.139 | |
| | | | | | Distributed 16-point (10 to 1F) | | FA-TB16XY2 P.139 | |
| | | One-touch connector | | 3-wire type | FA-CB8XY1 P.146 | | | |
| | | | | | Distributed 8-point (8 to F) | FA-CB8XY2 P.146 | | |
| | | | | | Distributed 8-point (10 to 17) | FA-CB8XY3 P.146 | | |
| | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-CB8XY4 P.146 | | | |
| | | | | | Distributed 16-point (0 to F) | FA-CB16XY1 P.147 | | |
| | | Distributed 16-point (10 to 1F) | 3-wire type | FA-CB16XY2 P.147 | | | | |
| | FA-LEB32XY P.150 | | | | | | | |
| | e-CON | 3-wire type | FA-LEB32XY-3 P.150 | | | | | |
| | | | FA-LEB32XY-3A P.150 | | | | | |
| | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY P.130 | | | | |
| | | | | FA-TB16XY P.132 | | | | |
| | | | Screw | 2-wire type | FA-TB1L16XYN P.134 | | | |
| | | FA-TB16XYPN P.135 | | | | | | |
| | | 3-wire type | | FA-TB16XYPN3 P.136 | | | | |
| | | e-CON | 3-wire type | FA-LEB16XY P.149 | | | | |
| | | | | FA-LEB16XY-D P.149 | | | | |
| | | | | DIN rail installation only | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E P.236 Mountable module ▶ P.283 | FA-CBL**FM2V P.162 FA-CBL**FM2LV P.163 FA-CBL**MMH20 (for distributed installation) P.174 |
| | Module mixing possible | | | | Independent | FA1-TH8X2SC20S1E P.236 Mountable module ▶ P.283 | | |
| | 24VDC, N/O contact relay (positive common) | | | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | | |
| | | | FA1-TH8X24RA1L20S1E P.232 | | | | | |
| | | | FA1-TH16X24RA1L20S1E P.234 | | | | | |
| | 24VDC, N/O contact relay (negative common) | | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E P.230 | | | |
| | | | | | FA1-TH8X24RA1H20S1E P.232 | | | |
| | | | | | FA1-TH16X24RA1H20S1E P.234 | | | |
| | Screw | | Module mixing possible | Independent | FA-TH16XRA20S P.238 | | | |
| | | | | | 24VDC, 10mA | FA-TH16X24D31 P.239 | | |
| | | | | | 48VDC, 5mA | FA-TH16X48D31L P.240 | | |
| | | | | | 100VDC, 2.5mA | FA-TH16X100D31L P.242 | | |
| | | | | | 100VAC, 8mA | FA-TH16X100A31 P.243 | | |
| 200VAC, 7.5mA | | | | | 2-wire type | FA-TH16X100A31L P.244 | | |
| | | | | | | FA-TH16X200A31 P.245 | | |
| FA-TH16X200A31L P.246 | | | | | | | | |
| Negative common | Junction terminal block | Spring clamp | 1-wire type | FA1-TESV32XY P.126 | FA-CBL**FMVE P.164 | | | |
| | | | 1-wire type | FA1-TE1S32XY P.127 | | | | |
| | | Screw | Small-size terminal block | 1-wire type | | FA-TB32XY P.132 | | |
| | | | | 1-row terminal block | | FA-TBS32XY P.133 | | |
| | | | | LED | | FA-TB32XYH P.134 | | |
| | | | 3-row terminal block | FA-TB32XYP3 P.135 | | | | |
| | | | Distributed 8-point (0 to 7) | 3-wire type | | FA-TB8XY1 P.138 | | |
| | | Distributed 8-point (8 to F) | | | | FA-TB8XY2 P.138 | | |
| | | Distributed 8-point (10 to 17) | | | | FA-TB8XY3 P.138 | | |
| | | Distributed 8-point (18 to 1F) | | 3-wire type | | FA-TB8XY4 P.138 | | |
| | | | | | | Distributed 16-point (0 to F) | FA-TB16XY1 P.139 | |
| | | | | | | Distributed 16-point (10 to 1F) | FA-TB16XY2 P.139 | |
| | | One-touch connector | 3-wire type | FA-CB8XY1 P.146 | | | | |
| | | | | Distributed 8-point (8 to F) | | FA-CB8XY2 P.146 | | |
| | | | | Distributed 8-point (10 to 17) | | FA-CB8XY3 P.146 | | |
| | Distributed 8-point (18 to 1F) | | 3-wire type | FA-CB8XY4 P.146 | | | | |
| | | | | Distributed 16-point (0 to F) | FA-CB16XY1 P.147 | | | |
| | Distributed 16-point (10 to 1F) | | FA-CB16XY2 P.147 | | | | | |
| | e-CON | 3-wire type | FA-LEB32XY P.150 | | | | | |
| | | | FA-LEB32XY-3 P.150 | | | | | |
| | FA-LEB32XY-3A P.150 | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | |
|----------------------------------------------------------------------------------|---------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------|-------------------------------|-------------------------------|--------------------------------------------------------------|---------------------|---------------------------------------------------------------------|----------------------------------|
| RX41C4 RX41C6HS RX42C4 | Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | |
| | | Discrete cable | 40-core cable | | | | FA-TE40PA | P.131 | FA-CBL**FV FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.158 P.159 P.159 P.159 |
| | | | Stranded wire | | | | | | | |
| | | | Y-shaped solderless terminal | | | | | | | |
| Round solderless terminal | | | | | | | | | | |
| Spring clamp terminal block conversion module (only for the RX41C4 and RX41C6HS) | | | | | | | | | | |
| RX41C4-TS | Positive common | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM2F34 | P.157 | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA1-CB1L**EM2F34 FA-CBL**MMH20 (for distributed installation) | P.157 P.174 |
| | | | | | | | FA1-TH8X2SC20S1E | P.236 | | |
| | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | | | |
| | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | |
| | | 24VDC, N/O contact relay (negative common) | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | FA1-TH4X24RA1H20S1E | | | P.230 | | | | | | |
| | FA1-TH8X24RA1H20S1E | P.232 | | | | | | | | |
| | | FA1-TH16X24RA1H20S1E | P.234 | | | | | | | |
| | Negative common | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM2F34 | P.157 | |
| Common | Discrete cable | 0.75mm ² type (8A max.) | | | | FA1-CB3L07SQ**E1F34 | P.156 | FA1-CB3L03SQ**E1F34 | P.156 | |
| | | 0.3mm ² type (4A max.) | | | | | | | | |
| RX70C4 | Positive common | Junction terminal block | Spring clamp | Screw | 1-row terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 |
| | | | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 |
| | | | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TMV20 | P.170 |
| | | | 3-row terminal block | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**TD | P.183 | | |
| | | | | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**M20 | P.168 | | |
| | | | | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**YM20 | P.169 | | |
| | | | e-CON | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**TMV20 | P.170 | | |
| | | | | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**M20 | P.168 | | |
| | | | | 3-wire type | FA-LEB16XY-D | P.149 | FA-CBL**YM20 | P.169 | | |
| | Negative common | Junction terminal block | Spring clamp | Screw | 1-row terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 |
| | | | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 |
| | | | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 |
| | | | 3-row terminal block | 2-wire type | FA-TB1L16XYP | P.134 | FA-CBL**M20 | P.168 | | |
| | | | | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**YM20 | P.169 | | |
| | | | | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**TD | P.183 | | |
| | | | e-CON | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**M20 | P.168 | | |
| | | | | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**YM20 | P.169 | | |
| | | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | |
| RX71C4 RX72C4 RX61C6HS | Positive common | Junction terminal block | Spring clamp | Screw | Small-size terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FMV | P.161 |
| | | | | | | 1-wire type | FA-TB32XY | P.132 | | |
| | | | | | | 1-wire type | FA-TBS32XY | P.133 | | |
| | | | 1-row terminal block | 1-wire type | FA-TB1L32XY | P.133 | FA-CBL**FMV FA-CBL**MMH (for distributed installation) | P.161 P.171 | | |
| | | | | 2-wire type | FA-TB32XYN3 | P.135 | | | | |
| | | | | 3-wire type | 3-wire type | FA-TB8XY1 | | | P.138 | |
| | | | | | 3-wire type | FA-TB8XY2 | | | P.138 | |
| | | | | | 3-wire type | FA-TB8XY3 | | | P.138 | |
| | | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY4 | | | P.138 | |
| | | | Distributed 8-point (8 to F) | | 2-wire type | FA-TB16XY1N | P.137 | | | |
| | | | | | 2-wire type | FA-TB16XY2N | P.137 | | | |
| | | | | 3-wire type | FA-TB16XY1 | P.139 | | | | |
| | | | Distributed 8-point (10 to 17) | 3-wire type | FA-TB16XY2 | P.139 | | | | |
| | | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-CB8XY1 | P.146 | | | |
| | | | | | Distributed 16-point (0 to F) | 3-wire type | FA-CB8XY2 | P.146 | | |
| | | | 3-wire type | | | FA-CB8XY3 | P.146 | | | |
| | | | Distributed 16-point (10 to 1F) | 3-wire type | | FA-CB8XY4 | P.146 | | | |
| | | | | Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | P.147 | | | |
| | Distributed 16-point (10 to 1F) | 3-wire type | | | FA-CB16XY2 | P.147 | | | | |
| | | Distributed 16-point (10 to 1F) | 3-wire type | | FA-LEB32XY | P.150 | | | | |
| | | | e-CON | 3-wire type | FA-LEB32XY-3 | P.150 | | | | |
| | 3-wire type | | | FA-LEB32XY-3A | P.150 | | | | | |
| | | | | | | | | | | |
| | Junction terminal block | Spring clamp | Screw | 1-row terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V | P.162 | |
| | | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**FM2LV | P.163 | |
| | | | | | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**FM2LV | P.163 | |
| | | 3-row terminal block | 2-wire type | FA-TB16XYPN | P.135 | FA-CBL**FM2V FA-CBL**FM2LV | P.162 P.163 | | | |
| 3-wire type | | | FA-TB16XYPN3 | P.136 | | | | | | |
| 3-wire type | | | FA-LEB16XY | P.149 | | | | | | |
| e-CON | 3-wire type | FA-LEB16XY-D | P.149 | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | | |
|----------------------------------------------------------------------------------|-------------------------|------------------------------------|--------------------------------------------|---------------------------------|------------------------|--------------------------|----------------------------------------------|-------------------------|-------------|--------------------------|-------|----------------------------------------------|-------------------------|
| RX71C4 RX72C4 RX61C6HS | Negative common | Junction terminal block | Spring clamp | 1-wire type | FA1-TEVS32XY | P.126 | FA-CBL**FMVE | P.164 | | | | | |
| | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | | | | | |
| | | | | Small-size terminal block | 1-wire type | FA-TB32XY | | | P.132 | | | | |
| | | | | | 1-wire type | FA-TBS32XY | | | P.133 | | | | |
| | | | | | 1-wire type | FA-TB1L32XY | | | P.133 | | | | |
| | | | | 3-row terminal block | 2-wire type | FA-TB32XYP3 | | | P.135 | | | | |
| | | | Screw | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY1 | | | P.138 | | | | |
| | | | | Distributed 8-point (8 to F) | 3-wire type | FA-TB8XY2 | | | P.138 | | | | |
| | | | | Distributed 8-point (10 to 17) | 3-wire type | FA-TB8XY3 | | | P.138 | | | | |
| | | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-TB8XY4 | | | P.138 | | | | |
| | | | | Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 | | | P.139 | | | | |
| | | | | Distributed 16-point (10 to 1F) | 3-wire type | FA-TB16XY2 | | | P.139 | | | | |
| | | | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | FA-CB8XY1 | | | P.146 | | | | |
| | | | | Distributed 8-point (8 to F) | 3-wire type | FA-CB8XY2 | | | P.146 | | | | |
| | | | | Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY3 | | | P.146 | | | | |
| | | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-CB8XY4 | | | P.146 | | | | |
| | | | | Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | | | P.147 | | | | |
| | | | | Distributed 16-point (10 to 1F) | 3-wire type | FA-CB16XY2 | | | P.147 | | | | |
| | e-CON | | | 3-wire type | FA-LEB32XY | P.150 | FA-CBL**FMVE | P.164 | | | | | |
| | | | | | FA-LEB32XY-3 | P.150 | | | | | | | |
| | Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | | | |
| | | Discrete cable | | | | | | FA-CBL**FV | P.158 | | | | |
| | | | | | | | | FA-BCBL**FFBL | P.159 | | | | |
| | | | | | | | | FA-BCBL**FFBLY | P.159 | | | | |
| | | | | | FA-BCBL**FFBLR | P.159 | | | | | | | |
| Spring clamp terminal block conversion module (only for the RX71C4 and RX61C6HS) | | | | | FA1-TE40PA | P.131 | | | | | | | |
| RY10R2 | Junction terminal block | Screw | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | | | |
| | | | | 2-wire type | FA-TB161ACC2 | P.153 | | | | | | | |
| RX10-TS | Discrete cable | 0.75mm ² type (8A max.) | | | | | FA1-CB3L07SQ**E1F18 | P.156 | | | | | |
| | | 0.3mm ² type (4A max.) | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | | | | |
| RY18R2A | Junction terminal block | Screw | | | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | | |
| RY20S6 | Junction terminal block | Screw | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | | | |
| | | | | 2-wire type | FA-TB161ACC2 | P.153 | | | | | | | |
| RY40NT5P | Junction terminal block | Screw | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 | | | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | | | | | | | |
| | | | | 1-wire type | FA-TB161AC | P.152 | | | | | | | |
| | | | | 1-row terminal block | 2-wire type | FA-TB1L16XYP | | | P.134 | | | | |
| | | | | | 2-wire type | FA-TB161ACC1 | | | P.153 | | | | |
| | | | | 3-row terminal block | 3-wire type | FA-TB16XYPN | | | P.135 | | | | |
| | | | 3-wire type | | FA-TB16XYPN3 | P.136 | | | | | | | |
| | | | e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY | | | P.149 | | | | |
| | | | | | 3-wire type | FA-LEB16XY-D | | | P.149 | | | | |
| | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | | | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 |
| | | | | | | | | | | Mountable module ▶ P.284 | | | |
| | | | | | | | | | | FA1-TH8Y2SC20S1E | P.250 | | |
| | N/O contact relay | Module mixing possible | | | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | | | |
| | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | FA1-TH16Y2RA20S1E | P.254 | | | | | | |
| | Screw | N/O contact relay | | Module replaceable | 1-wire type | FA1-TH16Y1SR20S1E | P.256 | | | | | | |
| | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | | | |
| | | | | | | FA1-TH16YRA11 | P.260 | | | | | | |
| | | | | Module mixing possible | Independent | FA1-TH16YRA21 | P.261 | | | | | | |
| | | | | | | FA1-TH16YRA20 | P.262 | | | | | | |
| | | | | | | FA1-TH16YRA11S | P.263 | | | | | | |
| | | N/C contact relay | | Module replaceable | Independent | FA1-TH16YRA21S | P.264 | | | | | | |
| | | | | | | FA1-TH16YRA20S | P.265 | | | | | | |
| | | | | | | FA1-TH16YRA20SL | P.267 | | | | | | |
| | | | | C/O contact relay | Module mixing possible | Independent | FA1-TH16YRAB20SL | P.268 | | | | | |
| | | | | | | | FA1-TH16YRAC20S | P.269 | | | | | |
| | | | | | | | FA1-TH16YSR11S | P.270 | | | | | |
| | Triac, 1.0A | Module replaceable | Independent | FA1-TH16YSR21S | P.271 | | | | | | | | |
| | | | | FA1-TH16YSR20S | P.272 | | | | | | | | |
| | | | | FA1-TH16YTL11S | P.273 | | | | | | | | |
| | | Transistor, 1.0A (sink) | Module replaceable | Independent | FA1-TH16YTL21S | P.274 | | | | | | | |
| | | | | | FA1-TH16YTH11S | P.275 | | | | | | | |
| FA1-TH16YTR20S | | | | | P.277 | | | | | | | | |
| Transistor, 1.0A (source) | Module mixing possible | Independent | FA1-TH16YTR20S | P.277 | | | | | | | | | |
| | | | FA1-TH16Y2TR20 | P.278 | | | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | | Model | | Connection cable | | |
|--------------------------------------|--------------------------------------------|------------------------|--------------------------|----------------------------|----------------|--------------------------|---------------------|-------------------------------------------------------------------------------------------------|----------------------------------|
| RY40NT5P-TS | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM1F18 | P.157 |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA1-CB1L**EM1F18 FA-CBL**MMH20 (for distributed installation) | P.157 P.174 |
| | | | | | | Mountable module ▶ P.284 | | | |
| | | | FA1-TH8Y2SC20S1E | P.250 | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | |
| | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | |
| | | | | Mountable module ▶ P.284 | | | | | |
| FA1-TH16Y2RA20S1E | | | | P.254 | | | | | |
| Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y1SR20S1E | P.256 | | | | | |
| Transistor, 1.0A | | | FA1-TH16Y1TR20S1E | P.258 | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F18 | P.156 | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | |
| RY40PT5P RY40PT5B | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 |
| | | Screw | 1-row terminal block | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 |
| | | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TMV20 | P.170 |
| | | | | | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**M20 | P.168 |
| | | | 3-row terminal block | 3-wire type | FA-TB161ACC2 | P.153 | FA-CBL**YM20 | P.169 | |
| | | | | | FA-TB16XYPN | P.135 | FA-CBL**TMV20 | P.170 | |
| | | | | | FA-TB16XYPN3 | P.136 | FA-CBL**M20 | P.168 | |
| | e-CON | | | DIN rail installation only | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**YM20 | P.169 |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for distributed installation) | P.168 P.169 P.170 P.174 |
| | | | | | | Mountable module ▶ P.284 | | | |
| | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | |
| | | | Mountable module ▶ P.284 | | | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | |
| Triac, 1.0A | | | FA1-TH1E16Y1SR20S1E | | | P.257 | | | |
| Transistor, 1.0A | FA1-TH1E16Y1TR20S1E | P.252 | | | | | | | |
| Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | |
| | | | | Transistor, 1.0A (source) | FA-THE16YTH11S | P.276 | | | |
| | | | | Transistor, 1.0A | FA-THE16YTR20S | P.279 | | | |
| RY40PT5P-TS | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM1F18 | P.157 |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA1-CB1L**EM1F18 FA-CBL**MMH20 (for distributed installation) | P.157 P.174 |
| | | | | | | Mountable module ▶ P.284 | | | |
| | | | FA1-TH1E8Y2SC20S1E | P.250 | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | |
| | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2SC20S1E | P.253 | | | | |
| | | | | Mountable module ▶ P.284 | | | | | |
| FA1-TH1E16Y2RA20S1E | | | | P.255 | | | | | |
| Triac, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | |
| Transistor, 1.0A | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F18 | P.156 | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | |
|------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------|------------------------------|----------------------------|------------------------|-----------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| RY41NT2P RY42NT2P RY41NT2H | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV32XY | P.126 | FA-CBL**FMV FA-CBL**FMV FA-CBL**MMH (for distributed installation) FA-CBL**FMV FA-CBL**MMH (for distributed installation) FA-CBL**FMV FA-CBL**MMH (for distributed installation) | |
| | | | | | 1-wire type | FA1-TE1S32XY | P.127 | | |
| | | | | | 1-wire type | FA-TB32XY | P.132 | | |
| | | Screw | Small-size terminal block | | | 1-wire type | FA-TBS32XY | | P.133 |
| | | | | | | 1-wire type | FA-TB1L32XY | | P.133 |
| | | | | | | 1-wire type | FA-TB32XYL | | P.134 |
| | | | | | | 2-wire type | FA-TB32XYP3 | | P.135 |
| | | | | | 3-wire type | FA-TB8XY1 | P.138 | | |
| | | | | | | FA-TB8XY2 | P.138 | | |
| | | | | | | FA-TB8XY3 | P.138 | | |
| | | | | | | FA-TB8XY4 | P.138 | | |
| | | | | 3-wire type | FA-TB16XY1 | P.139 | | | |
| | | | | | FA-TB16XY2 | P.139 | | | |
| | | One-touch connector | Distributed 8-point (0 to 7) | | | 3-wire type | FA-CB8XY1 | | P.146 |
| | | | | | | 3-wire type | FA-CB8XY2 | | P.146 |
| | | | | 3-wire type | FA-CB8XY3 | P.146 | | | |
| | | | | 3-wire type | FA-CB8XY4 | P.146 | | | |
| | | | 3-wire type | FA-CB16XY1 | P.147 | | | | |
| | | | | FA-CB16XY2 | P.147 | | | | |
| | e-CON | | | 3-wire type | FA-LEB32XY | P.150 | | | |
| | | | | 3-wire type | FA-LEB32XY-3A | P.150 | | | |
| | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**FM2LV FA-CBL**FM2V FA-CBL**FM2LV | |
| | | | | | 1-wire type | FA-TB16XY | P.132 | | |
| | | | | | 2-wire type | FA-TB1L16XYP | P.134 | | |
| | | Screw | 1-row terminal block | | 2-wire type | FA-TB16XYPN | P.135 | | |
| | | | 3-row terminal block | | 3-wire type | FA-TB16XYPN3 | P.136 | | |
| | | | | 3-wire type | FA-LEB16XY | P.149 | | | |
| | | | | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for distributed installation) | |
| | | | | | | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 | | | |
| | | | | | | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 | | | |
| | | | N/O contact relay | | Independent | FA1-TH16Y2RA20S1E | P.254 | | |
| | | | Triaic, 1.0A | | Independent | FA1-TH16Y1SR20S1E | P.256 | | |
| Transistor, 1.0A | | | Independent | FA1-TH16Y1TR20S1E | P.258 | | | | |
| Screw | | N/O contact relay | Module replaceable | | 1-wire type | FA-TH16YRA11 | P.260 | | |
| | | | | | 2-wire type | FA-TH16YRA21 | P.261 | | |
| | | | | | Independent | FA-TH16YRA20 | P.262 | | |
| | | | | | 1-wire type | FA-TH16YRA11S | P.263 | | |
| | | | | | 2-wire type | FA-TH16YRA21S | P.264 | | |
| | | | | | Independent | FA-TH16YRA20S | P.265 | | |
| | | Module mixing possible | | Independent | FA-TH16YRA20SL | P.267 | | | |
| | | | | Independent | FA-TH16YRAB20SL | P.268 | | | |
| | | | | Independent | FA-TH16YRAC20S | P.269 | | | |
| | | N/C contact relay | Module mixing possible | | Independent | FA-TH16YSR11S | P.270 | | |
| | | | | | 1-wire type | FA-TH16YSR21S | P.271 | | |
| | | | | | 2-wire type | FA-TH16YSR20S | P.272 | | |
| | | C/O contact relay | Module replaceable | | 1-wire type | FA-TH16YTL11S | P.273 | | |
| | | | | | 2-wire type | FA-TH16YTL21S | P.274 | | |
| | | | | | 1-wire type | FA-TH16YTH11S | P.275 | | |
| Module replaceable | | 1-wire type | FA-TH16YTR20S | P.277 | | | | | |
| | | Independent | FA-TH16Y2TR20 | P.278 | | | | | |
| Junction terminal block | Screw | Small-size terminal block | | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | |
| | | | | | | | FA-CBL**FV FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.158 P.159 P.159 P.159 | |
| Spring clamp terminal block conversion module (only for the RY41NT2P and RY41NT2H) | | | | | FA1-TE40PA | P.131 | | | |
| RY41NT2P-TS | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM2F34 | P.157 | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | | FA1-CB1L**EM2F34 FA-CBL**MMH20 (for distributed installation) |
| | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 | | | | | | | | |
| | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 | | | | | | | | |
| | N/O contact relay | | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | |
| | Triaic, 1.0A | | Independent | FA1-TH16Y1SR20S1E | P.256 | | | | |
| | Transistor, 1.0A | | Independent | FA1-TH16Y1TR20S1E | P.258 | | | | |
| | Module mixing possible | | Independent | FA1-TH16YRAB20SL | P.268 | | | | |
| | | | Independent | FA1-TH16YRAC20S | P.269 | | | | |
| | Discrete cable | 0.75mm ² type (8A max.) | | | | | FA1-CB3L07SQ**E1F34 | P.156 | |
| 0.3mm ² type (4A max.) | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | | Model | | Connection cable | | | | |
|------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------|------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------|----------------|
| RY41PT1P RY42PT1P RY41PT2H | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV32XY | P.126 | FA-CBL**FMV | P.161 | | | |
| | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | | | |
| | | Screw | Small-size terminal block | | 1-wire type | FA-TB32XY | | | P.132 | FA-CBL**FMV FA-CBL**MMH (for distributed installation) | P.161 P.171 |
| | | | | | 1-wire type | FA-TBS32XY | | | P.133 | | |
| | | | 1-row terminal block | | 1-wire type | FA-TB1L32XY | | | P.133 | | |
| | | | | | 1-wire type | FA-TB32XYH | | | P.134 | | |
| | | | 3-row terminal block | | 2-wire type | FA-TB32XYN3 | | | P.135 | | |
| | | | | | 3-wire type | FA-TB8XY1 | | | P.138 | | |
| | | | FA-TB8XY2 | P.138 | | | | | | | |
| | | | FA-TB8XY3 | P.138 | | | | | | | |
| | | | FA-TB8XY4 | P.138 | | | | | | | |
| | | | Distributed 8-point (0 to 7) | | 2-wire type | FA-TB16XY1N | | | P.137 | | |
| | | FA-TB16XY2N | | | | P.137 | | | | | |
| | | Distributed 16-point (10 to 1F) | | 3-wire type | FA-TB16XY1 | P.139 | | | | | |
| | | | | | FA-TB16XY2 | P.139 | | | | | |
| | Distributed 8-point (0 to 7) | | 3-wire type | FA-CB8XY1 | P.146 | FA-CBL**FMV FA-CBL**MMH (for distributed installation) | P.161 P.171 | | | | |
| | | | | FA-CB8XY2 | P.146 | | | | | | |
| | Distributed 8-point (8 to F) | | 3-wire type | FA-CB8XY3 | P.146 | | | | | | |
| | | | | FA-CB8XY4 | P.146 | | | | | | |
| | Distributed 8-point (10 to 1F) | | 3-wire type | FA-CB16XY1 | P.147 | | | | | | |
| | | | | FA-CB16XY2 | P.147 | | | | | | |
| | Distributed 16-point (10 to 1F) | | 3-wire type | FA-LEB32XY | P.150 | FA-CBL**FMV | P.161 | | | | |
| | | | | FA-LEB32XY-3 | P.150 | | | | | | |
| | Distributed 16-point (0 to F) | | 3-wire type | FA-LEB32XY-3A | P.150 | | | | | | |
| | | | | | | | | | | | |
| | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**FM2LV | P.162 P.163 P.163 | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | | | | | |
| | | Screw | 1-row terminal block | | 2-wire type | FA-TB1L16XYN | | | P.134 | | |
| | | | | | 3-wire type | FA-TB16XYPN | | | P.135 | | |
| | | 3-row terminal block | | 3-wire type | FA-TB16XYPN3 | P.136 | | | | | |
| | | | | 3-wire type | FA-LEB16XY | P.149 | | | | | |
| | e-CON | | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | | | | | |
| | | | | | | | | | | | |
| Digital signal converter (terminal module) | Spring clamp | Installation base unit | | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for distributed installation) | P.162 P.163 P.174 | | |
| | | | | | | Mountable module ▶P.284 | | | | | |
| | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | | |
| | | Mountable module ▶P.284 | | | | | | | | | |
| | | Mountable module ▶P.284 | | | | | | | | | |
| | N/O contact relay | | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | |
| | Triac, 1.0A | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | | | |
| | Transistor, 1.0A | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | |
| | Screw | N/O contact relay | | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | |
| | | Transistor, 1.0A (source) | | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | | | |
| Transistor, 1.0A | | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | | | | | |
| Junction terminal block | Screw | | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | | |
| Discrete cable | | | | | | | FA-CBL**FV FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.158 P.159 P.159 P.159 | | | |
| Spring clamp terminal block conversion module (only for the RY41NT2P and RY41NT2H) | | | | | FA1-TE40PA | P.131 | | | | | |
| RY41PT1P-TS | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA1-CB1L**EM2F34 | P.157 | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA1-CB1L**EM2F34 FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | |
| | | | | | | | Mountable module ▶P.284 | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | |
| | | | Mountable module ▶P.284 | | | | | | | | |
| | N/O contact relay | | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | |
| | Triac, 1.0A | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | | | |
| Transistor, 1.0A | | FA1-TH1E16Y1TR20S1E | | | P.252 | | | | | | |
| Discrete cable | | 0.75mm ² type (8A max.) 0.3mm ² type (4A max.) | | | | | FA1-CB3L07SQ**E1F34 FA1-CB3L03SQ**E1F34 | P.156 P.156 | | | |
| RH42C4NT2P | | | | | For the input side, refer to the specifications of the RX41C4. For the output side, refer to the specifications of the RY41NT2P. | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

MELSEC iQ-R series <Analog modules>

| Programmable controller module type | Programmable controller module model | Unit type | | | | Model | | | Connection cable |
|---------------------------------------|--------------------------------------|-------------------------|--------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------|
| | | | | | | Mountable module | | | |
| Channel isolated analog input module | R60AD8-G R60AD16-G | Junction terminal block | Screw | Small-size terminal block | FA1-TBS40ADGN P.191 | | | FA-CBL**Q68ADGN P.196 | |
| | FA-LTB40ADGN P.192 | | | | | | | | |
| Channel isolated analog output module | R60AD6-DG | Junction terminal block | Screw | Small-size terminal block | FA1-TBS40ADDG P.191 | | | FA-CBL**Q66ADDG P.196 | |
| | FA-LTB40ADDG P.192 | | | | | | | | |
| Channel isolated analog output module | R60DA8-G R60DA16-G | Junction terminal block | Screw | Small-size terminal block | FA1-TBS40DAG P.191 | | | FA1-CBL**R60DA8G P.196 | |
| | FA-LTB40DAG P.192 | | | | | | | | |
| Analog input module | R60ADV8 | Junction terminal block | Screw | | FA-LTB20P P.145 | | | FA-CBL**Q68ADT P.197 FA-CBL**Q68ADA P.198 FA-Q6TCA P.317 | |
| | | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | | FA-CBL**ATQ8XVT P.304 FA-CBL**ATQ8XVA P.303 FA-Q6TCA P.317 |
| | | | | | | | Voltage input 0 to 5V FA-ATSVM1XV05 P.297 1 to 5V FA-ATSVM1XV15 P.297 -10 to 10V FA-ATSVM1XV1010 P.297 Current input 4 to 20mA FA-ATSVM1XA420 P.298 Distributor 4 to 20mA FA-ATSVM1XD P.299 RTD input -200 to +650°C FA-ATSVM1XRPT P.300 0 to +100°C FA-ATSVM1XRPT0010 P.300 0 to +200°C FA-ATSVM1XRPT0020 P.300 -200 to +600°C FA-ATSVM1XRJPT P.300 | | |
| | | Screw | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TB P.292 | Thermocouple input +600 to +1700°C FA-ATSVM1XTB P.301 0 to +1600°C FA-ATSVM1XTR P.301 0 to +1600°C FA-ATSVM1XTS P.301 -200 to +1200°C FA-ATSVM1XTK P.301 0 to +400°C FA-ATSVM1XTK0040 P.301 0 to +600°C FA-ATSVM1XTK0060 P.301 0 to +800°C FA-ATSVM1XTK0080 P.301 -200 to +900°C FA-ATSVM1XTE P.301 -40 to +750°C FA-ATSVM1XTJ P.301 -200 to +350°C FA-ATSVM1XTT P.301 -200 to +1250°C FA-ATSVM1XTN P.301 Pass-through module FA-ATFTMY P.316 Dummy module FA-ATNDM5 P.317 | | Cable for distributed installation FA1-CB2L**AT4EX P.318 | |
| | | | | | | 8-channel installation base unit FA-ATB8XTB P.296 | | | |
| | | Junction terminal block | Screw | | FA-LTB20P P.145 | | | FA-CBL**Q68ADT P.197 FA-CBL**Q68ADA P.198 FA-Q6TCA P.317 | |
| | | Analog signal converter | Screw | Module selectable type | Input to the programmable controller: 4 to 20mA | 8-channel installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKAA8XM P.295 | Input modules for analog signal converter | | FA-CBL**ATQ8XVT P.304 FA-CBL**ATQ8XVA P.303 FA-Q6TCA P.317 |
| | | Junction terminal block | Screw | | FA-LTB20P P.145 | | | FA-CBL**Q64ADT P.197 | |
| | | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | | FA1-CB2L**AT4XV1T P.303 |
| | | | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | |
| Junction terminal block | Screw | | FA-LTB20P P.145 | | | FA-CBL**Q64ADT P.197 | | | |
| Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | | FA1-CB2L**AT4XV1T P.303 | | |
| | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | | | |

For programmable controllers, HMIs, and CNCs

Selection chart

| Programmable controller module type | Programmable controller module model | Unit type | | | Model | | Connection cable | | |
|-------------------------------------|--------------------------------------|------------------------------------------------|------------------------------------------------|----------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | Mountable module | | | | |
| Analog output module | R60DAV8 | Junction terminal block | Screw | | FA-LTB20P | P.145 | | FA-CBL**Q68DAT P.197 FA-CBL**Q68DAA P.198 FA-Q6TCA P.317 | |
| | | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs voltage.) Voltage output 0 to 5V FA-ATSVM1YV05 P.311 0 to 10V FA-ATSVM1YV010 P.311 1 to 5V FA-ATSVM1YV15 P.311 -10 to 10V FA-ATSVM1YV1010 P.311 | FA-CBL**ATQ8YT P.314 FA-CBL**ATQ8YA P.314 FA-Q6TCA P.317 |
| | | | | | | 4-channel installation base unit FA1-AT1B4Y1TB | P.306 | Current output 0 to 20mA FA-ATSVM1YA020 P.312 4 to 20mA FA-ATSVM1YA420 P.312 | Cable for distributed installation FA1-CB2L**AT4EX P.318 |
| | | | Screw | 8-channel installation base unit FA-ATB8YTB | P.308 | Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | | | |
| | | R60DAI8 | Junction terminal block | Screw | | FA-LTB20P | P.145 | | FA-CBL**Q68DAT P.197 FA-CBL**Q68DAA P.198 FA-Q6TCA P.317 |
| | | | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs current.) Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 |
| | Screw | | | | | | 4-channel installation base unit FA1-AT1B4Y1TB | P.306 | Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 |
| | | | | | 8-channel installation base unit FA-ATB8YTB | P.308 | Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | | |
| | R60DA4 | Junction terminal block | Screw | | FA-LTB20P | P.145 | | FA-CBL**Q64DAT P.197 | |
| | | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs voltage/current.) | FA1-CB2L**AT4YA1T P.313 |
| | Screw | | 4-channel installation base unit FA1-AT1B4Y1TB | | | P.306 | | | |
| | R60DAH4 | Junction terminal block | Screw | | FA-LTB20P | P.145 | | FA-CBL**Q64DAT P.197 | |
| Analog signal converter | | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs voltage/current.) | FA1-CB2L**AT4YA1T P.313 | |
| | Screw | 4-channel installation base unit FA1-AT1B4Y1TB | | | P.306 | | | | |
| Thermocouple input module | R60TD8-G | Junction terminal block | Screw | | FA-LTB40TDG | P.193 | | FA-CBL**Q68TDG P.198 | |
| RTD input module | R60RD8-G | Junction terminal block | Screw | | FA-LTB40RD3G | P.194 | | FA-CBL**Q68RD3G P.199 | |
| Temperature control module | R60TCTR2TT2 R60TCTR2TT2BW | Junction terminal block | Screw | | FA-TB20TC | P.194 | | FA-CBLQ64TC** P.200 | |
| HART-enabled module | R60ADI8-HA | Discrete cable | Shielded | | | | | FA1-CB2L**S1B2-4 P.195 | |

MELSEC iQ-R series <Simple Motion modules and positioning modules>

| Programmable controller module type | Programmable controller module model | Servo amplifier or other devices | Type | | Conversion module or cable model | Cable between conversion module and servo amplifier | Cable between positioning module and conversion module |
|--------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------|----------------------------------|-----------------------------------------------------|--------------------------------------------------------|
| | | | | | | | |
| Simple Motion module | RD77MS2 RD77MS4 RD77MS8 RD77MS16 | MR-J4-B series MR-J3-B series | Junction terminal block | Screw | FA-LTBQ75M P.205 | | FA-CBL**Q7 P.214 |
| | | | Spring clamp terminal block conversion module (only for the RD77MS2) | | FA1-TE40PA P.131 | | |
| Positioning module (Differential driver output system) | RD75D2 RD75D4 | MR-J5-A series MR-J4-A series MR-J3-A series | Junction terminal block | Screw | FA-LTBQ75DP P.204 | FA-CBLQ7DM*J3 P.214 | FA-CBL**Q7 P.214 |
| | | | Cable with connectors | | FA-CBLQ75M2J3 P.207 | | |
| | | | | | With pulse generator | FA-CBLQ75M2J3-P P.207 | |
| | | MR-J2-A series MR-J2S-A series | Cable with connectors | | FA-CBLQ75M2J2 P.209 | | |
| | | | | | With pulse generator | FA-CBLQ75M2J2-P P.209 | |
| | | YASKAWA Σ-III series Σ-V series | Cable with connectors | | FA-CBLQ75Y2E3 P.212 | | |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP P.204 | FA-CBLQ7DG1 P.214 | FA-CBL**Q7 P.214 |
| General-purpose discrete cable | | | FA-CBLQ75G2 P.213 | | | | |
| | | | With pulse generator | FA-CBLQ75G2-P P.213 | | | |
| Positioning module (open collector output system) | RD75P2 RD75P4 | MR-J5-A series MR-J4-A series MR-J3-A series | Junction terminal block | Screw | FA-LTBQ75DP P.204 | FA-CBLQ7PM*J3 P.214 | FA-CBL**Q7 P.214 |
| | | | Cable with connectors | | FA-CBLQ75PM2J3 P.207 | | |
| | | MR-J2-A series MR-J2S-A series | Cable with connectors | | FA-CBLQ75PM2J2 P.209 | | |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP P.204 | FA-CBLQ7DG1 P.214 | FA-CBL**Q7 P.214 |
| | | | General-purpose discrete cable | | FA-CBLQ75G2 P.213 | | |
| | | | | | With pulse generator | FA-CBLQ75G2-P P.213 | |
| | | Spring clamp terminal block conversion module (only for the RD75P2) | | FA1-TE40PA P.131 | | | |

MELSEC iQ-R series <High-speed counter modules>

| Programmable controller module model | Unit type | | | Model | Connection cable |
|--------------------------------------|-----------------------------------------------|-------|---------------------------|-------------------------|-----------------------------|
| | | | | | |
| RD62P2 RD62D2 RD62P2E | Junction terminal block | Screw | Small-size terminal block | FA-TBS40P P.144 | FA-SCBL**FMV-M P.202 |
| | Spring clamp terminal block conversion module | | | FA1-TE40PA P.131 | |

MELSEC iQ-F series <I/O modules>

| Programmable controller module model | Unit type | | | | | Model | | Connection cable | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------|--------------------------|-----------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| FX5UC-32MT/D FX5-C32ET/D | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | |
| | Sink input | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 |
| | | | | | | | Mountable module ▶ P.283 | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH8X2SC20S1E | P.236 | | |
| | | | | | | | Mountable module ▶ P.283 | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | | | |
| | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | |
| | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | |
| | | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | |
| | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | P.238 | | | | |
| | | | | | FA-TH16X24D31 | P.239 | | | | |
| | | | | | FA-TH16X24D31L | P.240 | | | | |
| | | | | | FA-TH16X48D31L | P.241 | | | | |
| | | | | | FA-TH16X100D31L | P.242 | | | | |
| | | | | | FA-TH16X100A31 | P.243 | | | | |
| | Screw | 24VDC, 10mA | Module mixing possible | 2-wire type | FA-TH16X100A31L | P.244 | | | | |
| | | | | | FA-TH16X200A31 | P.245 | | | | |
| | | | | | FA-TH16X200A31L | P.246 | | | | |
| | | | | | FA-TH16X100A31L | P.244 | | | | |
| | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | |
| Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 | P.175 P.177 | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH8Y2SC20S1E | P.250 | | | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | |
| | | | | | Mountable module ▶ P.284 | | | | | |
| | | Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16Y1SR20S1E | P.256 | | | | |
| | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | |
| | | Screw | N/O contact relay | Module replaceable | 1-wire type | FA-FXTH16YRA11S | P.281 | | | |
| | | | | | | FA-FXTH16YRA20S | P.280 | | | |
| I/O combined | Junction terminal block | Screw | | 1-wire type | FA-FXTB16X16Y | P.143 | FA-FXCBL**MM2H16X16Y FA2-CB1LT**MM2H16X16Y | P.181 P.182 | | |
| FX5-C32ET/ DS-TS | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | |
| | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA2-CB1L**EM1F18E FA-CBL**MMH20 (for distributed installation) |
| | Mountable module ▶ P.283 | | | | | | | | | |
| | 24VDC, N/O contact relay (positive common) | Module mixing possible | | | Independent | FA1-TH8X2SC20S1E | P.236 | | | |
| | | | | | | Mountable module ▶ P.283 | | | | |
| | 24VDC, N/O contact relay (negative common) | Module mixing possible | | Independent | FA1-TH4X24RA1L20S1E | P.230 | | | | |
| | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | |
| | 24VDC, N/O contact relay (negative common) | Module mixing possible | | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | |
| | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | |
| | 24VDC, N/O contact relay (negative common) | Module mixing possible | | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | |
| | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | |
| | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | |
| | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | |
| | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH16Y2SC20S1E | P.259 | FA2-CB1L**EM1F18E |
| Mountable module ▶ P.284 | | | | | | | | | | |
| N/O contact relay | | Module mixing possible | | | Independent | FA1-TH16Y2RA20S1E | P.254 | | | |
| | | | FA1-TH16Y1SR20S1E | P.256 | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16Y1TR20S1E | P.258 | | | | | | |
| | | | FA1-TH16Y1TR20S1E | P.258 | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F18 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|------------------------|--------------------------|--------------------------------|--------------------------|-----------------------|-------------------|---------------------|-------|
| FX5-C32ET/ DSS-TS | Sink input | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA2-CB1L**EM1F18E | P.157 | |
| | | | | | | | Mountable module ▶ P.283 | P.236 | | | |
| | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | FA-CBL**MMH20 | | | P.174 |
| | | | | | | Mountable module ▶ P.283 | P.234 | | | | |
| | | 24VDC, N/O contact relay (negative common) | Independent | FA1-TH16X24RA1L20S1E | P.234 | (for distributed installation) | | | | | |
| | FA1-TH4X24RA1H20S1E | | | P.230 | | | | | | | |
| | 24VDC, N/O contact relay (negative common) | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | | | | |
| | | | FA1-TH16X24RA1H20S1E | P.232 | | | | | | | |
| | Source input | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | |
| Source output | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E16Y2SC20S1E | P.253 | FA2-CB1L**EM1F18E | P.157 | | |
| | | | | | | Mountable module ▶ P.284 | P.255 | | | | |
| | | | | | | N/O contact relay | Independent | | | FA1-TH1E16Y2RA20S1E | P.255 |
| Triac, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | | | |
| Transistor, 1.0A | Independent | FA1-TH1E16Y1TR20S1E | P.252 | | | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | | FA1-CB3L07SQ**E1F18 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | |
| | 0.75mm ² type (8A max.) | | | | | | | FA1-CB3L07SQ**E1F18 | P.156 | | |
| FX5UC-32MR/ DS-TS | Discrete cable | | 0.3mm ² type (4A max.) | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | |
| | 0.75mm ² type (8A max.) | | | | | | | FA1-CB3L07SQ**E1F18 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | |
| FX5UC-64MT/D FX5UC-96MT/D | Sink input | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | |
| | | | Screw | | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | |
| | | | 1-wire type | | | FA-FXTB32X | P.141 | FA-FXCBL**MM2H | P.179 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-FXCBL**MMH20 | P.175 | |
| | | | | | | | Mountable module ▶ P.283 | P.236 | | | |
| | | | | | | | FA1-TH8X2SC20S1E | P.236 | | | |
| | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | FA2-CB1LT**MM1H20 | | | P.177 |
| | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | |
| | | | | | | FA1-TH16X24RA1L20S1E | P.234 | | | | |
| | | 24VDC, N/O contact relay (negative common) | Independent | FA1-TH4X24RA1H20S1E | P.230 | FA-CBL**MMH20 | P.174 | | | | |
| | FA1-TH8X24RA1H20S1E | | | P.232 | | | | | | | |
| | FA1-TH16X24RA1H20S1E | | | P.234 | | | | | | | |
| | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | P.238 | FA-FXCBL**MMH20 | P.175 | | | |
| | | | | | 24VDC, 10mA | 2-wire type | | | FA-TH16X24D31 | P.239 | |
| | | | | | 48VDC, 5mA | 2-wire type | | | FA-TH16X48D31L | P.241 | |
| | | 100VDC, 2.5mA | 2-wire type | FA-TH16X100D31L | P.242 | | | | | | |
| | | 100VAC, 8mA | 2-wire type | FA-TH16X100A31 | P.243 | | | | | | |
| | | 200VAC, 7.5mA | 2-wire type | FA-TH16X100A31L | P.244 | | | | | | |
| Sink output | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | Screw | | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | 1-wire type | | | FA-FXTB32Y | P.142 | FA-FXCBL**MM2H | P.179 | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-FXCBL**MMH20 | P.175 | | |
| | | | | | | Mountable module ▶ P.284 | P.250 | | | | |
| | | | | | | FA1-TH8Y2SC20S1E | P.250 | | | | |
| | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | FA2-CB1LT**MM1H20 | | | P.177 | |
| | | | | | Mountable module ▶ P.284 | P.254 | | | | | |
| FA1-TH16Y2RA20S1E | | | | | P.254 | | | | | | |
| Triac, 1.0A | Independent | FA1-TH16Y1SR20S1E | P.256 | FA-CBL**MMH20 | P.174 | | | | | | |
| Transistor, 1.0A | Independent | FA1-TH16Y1TR20S1E | P.258 | | | | | | | | |
| Screw | N/O contact relay | Module replaceable | 1-wire type | FA-FXTH16YRA20 | P.282 | (for distributed installation) | | | | | |
| | | | | Module mixing possible | Independent | | FA-FXTH16YRA11S | P.281 | | | |
| I/O combined | Junction terminal block | Screw | | | 1-wire type | FA-FXTB16X16Y | P.143 | FA-FXCBL**MM2H16X16Y | P.181 | | |
| | | | | | 1-wire type | FA-FXTB16X16Y | P.143 | FA2-CB1LT**MM2H16X16Y | P.182 | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | |
|--------------------------------------|-------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|------------------------|--------------------------|--------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------|-------|
| FX5-C16EX/D | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | |
| | | | | | | | Mountable module ▶ P.283 | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | | | |
| | | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | |
| | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | |
| | | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | | |
| | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | P.238 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 | P.175 P.177 | | |
| | | | | | | 24VDC, 10mA | 2-wire type | | | FA-TH16X24D31 | P.239 |
| | | | | | | 48VDC, 5mA | 2-wire type | | | FA-TH16X24D31L | P.241 |
| | | | | | | 100VDC, 2.5mA | 2-wire type | | | FA-TH16X100D31L | P.242 |
| 100VAC, 8mA | 2-wire type | | | | | FA-TH16X100A31 | P.243 | | | | |
| 200VAC, 7.5mA | 2-wire type | | | | | FA-TH16X200A31L | P.246 | | | | |
| FX5-C32EX/D | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | |
| | | | | | | | Mountable module ▶ P.283 | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | | | |
| | | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | |
| | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | |
| | | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | | |
| | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | P.238 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 | P.175 P.177 | | |
| | | | | | | 24VDC, 10mA | 2-wire type | | | FA-TH16X24D31 | P.239 |
| | | | | | | 48VDC, 5mA | 2-wire type | | | FA-TH16X48D31L | P.241 |
| | | | | | | 100VDC, 2.5mA | 2-wire type | | | FA-TH16X100D31L | P.242 |
| 100VAC, 8mA | 2-wire type | | | | | FA-TH16X100A31 | P.243 | | | | |
| 200VAC, 7.5mA | 2-wire type | | | | | FA-TH16X200A31L | P.246 | | | | |
| FX5-C16EYT/D | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | |
| | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH8Y2SC20S1E | P.250 | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | |
| | | | | | | Mountable module ▶ P.284 | | | | | |
| | | Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | |
| | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | | |
| | | Screw | N/O contact relay | Module replaceable | Independent | FA1-TH16Y1TR20S1E | P.258 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | | |
| | | | | | | FA-FXTH16YRA20 | P.282 | | | | |
| | | | | | | FA-FXTH16YRA11S | P.281 | | | | |
| | | | | | | FA-FXTH16YRA20S | P.280 | | | | |
| FX5-C32EYT/D | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | |
| | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH8Y2SC20S1E | P.250 | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | |
| | | | | | | Mountable module ▶ P.284 | | | | | |
| | | Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | |
| | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | | |
| | | Screw | N/O contact relay | Module replaceable | Independent | FA1-TH16Y1TR20S1E | P.258 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | | |
| | | | | | | FA-FXTH16YRA20 | P.282 | | | | |
| | | | | | | FA-FXTH16YRA11S | P.281 | | | | |
| | | | | | | FA-FXTH16YRA20S | P.280 | | | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------|
| FX5UC-32MT/ DSS FX5-C32ET/DSS | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | |
| | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 |
| | | | | | | | Mountable module ▶ P.283 | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH8X24RA1L20S1E | P.232 | | |
| | | | Mountable module ▶ P.283 | | | | | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | |
| | | | | | | Mountable module ▶ P.283 | | | | |
| | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E | P.230 | | | |
| | | | | | | FA1-TH8X24RA1H20S1E | P.232 | | | |
| | | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | |
| | | | 24VDC, 10mA | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E | P.230 | | | |
| | FA1-TH8X24RA1H20S1E | | | | | P.232 | | | | |
| | FA1-TH16X24RA1H20S1E | | | | | P.234 | | | | |
| | 48VDC, 5mA | Module mixing possible | Independent | FA1-TH16XRA20S | P.238 | | | | | |
| | | | | FA-TH16X24D31 | P.239 | | | | | |
| | | | | FA-TH16X24D31L | P.240 | | | | | |
| | 100VDC, 2.5mA | Module mixing possible | Independent | FA-TH16X48D31L | P.241 | | | | | |
| FA-TH16X100D31L | | | | P.242 | | | | | | |
| FA-TH16X100A31 | | | | P.243 | | | | | | |
| 100VAC, 8mA | Module mixing possible | Independent | FA-TH16X100A31L | P.244 | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | |
| Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E8Y2SC20S1E | P.250 | | | |
| | | Mountable module ▶ P.284 | | | | | | | | |
| | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y2SC20S1E | P.253 | | | | |
| | | | | | Mountable module ▶ P.284 | | | | | |
| | Transistor, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | |
| Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | |
| | Triac, 1.0A | Module replaceable | 1-wire type | FA1-TH1E16Y1TR20S1E | P.252 | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | |
| I/O combined | Junction terminal block | Spring clamp | | 1-wire type | FA-FXTB16X16Y | P.143 | FA-FXCBL**MM2H16X16Y | P.181 | | |
| | | Screw | | 1-wire type | FA-FXTB16X16Y | P.143 | FA2-CB1LT**MM2H16X16Y | P.182 | | |
| FX5UC-32MT/ DS-TS | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | | Screw | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | Sink input | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA2-CB1L**EM1F18E FA-CBL**MMH20 (for distributed installation) | P.157 P.174 |
| | | | | | | | Mountable module ▶ P.283 | | | |
| | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH8X24RA1L20S1E | P.236 | | | | |
| | | | | | Mountable module ▶ P.283 | | | | | |
| | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | | | | Mountable module ▶ P.283 | | | | | | |
| | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | |
| | | | Screw | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | |
| Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA2-CB1L**EM1F18E | P.157 | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| | | | | | | N/O contact relay | Module mixing possible | | | Independent |
| | | | Mountable module ▶ P.284 | | | | | | | |
| | | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F18 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | |
|------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------|--------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------|--------------------------|---------------------|
| FX5UC-32MT/ DSS-TS | Sink input | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA2-CB1L**EM1F18E FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | | |
| | | | | | | | Mountable module ▶ P.283 | P.236 | | | | |
| | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | FA2-CB1L**EM1F18E | P.157 | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | FA1-TH16X24RA1H20S1E | | | P.234 | | | | |
| | Source input | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | Source output | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | | Module selectable type | Independent | | | FA1-TH1E4Y2SC20S1E | P.248 |
| | | | | | | | | | | | Mountable module ▶ P.284 | P.250 |
| | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E8Y2SC20S1E | P.253 | FA2-CB1L**EM1F18E FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | | | | |
| Mountable module ▶ P.284 | | | | | P.253 | | | | | | | |
| Triac, 1.0A | | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | | | |
| Transistor, 1.0A | FA1-TH1E16Y1SR20S1E | | | P.257 | | | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) 0.3mm ² type (4A max.) | | | Independent | FA1-TH1E16Y1TR20S1E | P.252 | FA1-CB3L07SQ**E1F18 | P.156 | | | | |
| | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | | | | | |
| FX5UC-64MT/ DSS FX5UC-96MT/ DSS | Source input | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | Screw | | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | |
| | | | | Screw | | | 1-wire type | FA-FXTB32X | P.141 | FA-FXCBL**MM2H FA2-CB1LT**MM2H | P.179 P.180 | |
| | Sink input | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | Screw | | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | |
| | | | | Screw | | | 1-wire type | FA-FXTB32X | P.141 | FA-FXCBL**MM2H FA2-CB1LT**MM2H | P.179 P.180 | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 | | |
| | | | | | | | Mountable module ▶ P.283 | P.236 | | | | |
| | | | | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | | | Independent | FA1-TH4X24RA1L20S1E |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH8X24RA1L20S1E | P.232 | | | | | |
| | | | | | | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | | |
| | | Screw | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | | | |
| | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | | | |
| | | | | | FA-TH16XRA20S | P.238 | | | | | | |
| | 24VDC, 10mA | | 2-wire type | FA-TH16X24D31 | P.239 | | | | | | | |
| | | | | FA-TH16X24D31L | P.240 | | | | | | | |
| | | | | 48VDC, 5mA | 2-wire type | FA-TH16X48D31L | P.241 | | | | | |
| 100VDC, 2.5mA | 2-wire type | FA-TH16X100D31L | P.242 | | | | | | | | | |
| 100VAC, 8mA | 2-wire type | FA-TH16X100A31 | P.243 | | | | | | | | | |
| 200VAC, 7.5mA | 2-wire type | FA-TH16X100A31L | P.244 | | | | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | |
| Source output | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | |
| | | Screw | Screw | | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | | Screw | | | 1-wire type | FA-FXTB32Y | P.142 | FA-FXCBL**MM2H FA2-CB1LT**MM2H | P.179 P.180 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 | | | |
| | | | | | | Mountable module ▶ P.284 | P.250 | | | | | |
| | | | | | | FA1-TH1E8Y2SC20S1E | P.253 | | | | | |
| | | N/O contact relay | Module mixing possible | Independent | Mountable module ▶ P.284 | P.253 | | | | | | |
| | | | | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | |
| | | | | | FA1-TH1E16Y2RA20S1E | P.255 | | | | | | |
| | Triac, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | | | |
| | Transistor, 1.0A | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | | | |
| | Screw | Module mixing possible | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | | | |
| FA1-TH1E16Y1TR20S1E | | | | P.252 | | | | | | | | |
| N/O contact relay | | | | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | |
| Transistor, 1.0A | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | | | | | | | |
| | | | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | | | | | |
| I/O combined | Junction terminal block | Screw | | | 1-wire type | FA-FXTB16X16Y | P.143 | FA-FXCBL**MM2H16X16Y FA2-CB1LT**MM2H16X16Y | P.181 P.182 | | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|------------------------|--------------------------------------------|------------------------|------------------|----------------------|--------------------------|--------------------------|-------------------|--------------------------|
| FX5-C16EX/DS | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | | Mountable module ▶ P.283 | FA2-CB1L**MM1H20E | P.176 |
| | | | | | | | FA1-TH8X2SC20S1E | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | | P.230 | | |
| | | | | | | | FA1-TH8X24RA1L20S1E | | P.232 | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | | P.234 | | |
| | | | | | | | FA1-TH4X24RA1H20S1E | | P.230 | | |
| | | | FA1-TH8X24RA1H20S1E | | P.232 | | | | | | |
| | | | FA1-TH16X24RA1H20S1E | | P.234 | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | | P.238 | | |
| | | | | | | | FA-TH16X24D31 | | P.239 | | |
| | | | | 24VDC, 10mA | | 2-wire type | FA-TH16X24D31L | | P.240 | | |
| | | | | 48VDC, 5mA | | 2-wire type | FA-TH16X48D31L | | P.241 | | |
| | | | | 100VDC, 2.5mA | | 2-wire type | FA-TH16X100D31L | | P.242 | | |
| | | | | 100VAC, 8mA | | 2-wire type | FA-TH16X100A31 | | P.243 | | |
| 200VAC, 7.5mA | | 2-wire type | FA-TH16X200A31 | | P.245 | | | | | | |
| | | | | FA-TH16X200A31L | | P.246 | | | | | |
| FX5-C32EX/DS | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | | Mountable module ▶ P.283 | FA2-CB1L**MM1H20E | P.176 |
| | | | | | | | FA1-TH8X2SC20S1E | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | | P.230 | | |
| | | | | | | | FA1-TH8X24RA1L20S1E | | P.232 | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | | P.234 | | |
| | | | | | | | FA1-TH4X24RA1H20S1E | | P.230 | | |
| | | | FA1-TH8X24RA1H20S1E | | P.232 | | | | | | |
| | | | FA1-TH16X24RA1H20S1E | | P.234 | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | | P.238 | | |
| | | | | | | | FA-TH16X24D31 | | P.239 | | |
| | | | | 24VDC, 10mA | | 2-wire type | FA-TH16X24D31L | | P.240 | | |
| | | | | 48VDC, 5mA | | 2-wire type | FA-TH16X48D31L | | P.241 | | |
| | | | | 100VDC, 2.5mA | | 2-wire type | FA-TH16X100D31L | | P.242 | | |
| | | | | 100VAC, 8mA | | 2-wire type | FA-TH16X100A31 | | P.243 | | |
| 200VAC, 7.5mA | | 2-wire type | FA-TH16X200A31 | | P.245 | | | | | | |
| | | | | FA-TH16X200A31L | | P.246 | | | | | |
| FX5-C32EX/DS-TS | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | | Mountable module ▶ P.283 | FA2-CB1L**EM1F18E | P.157 | |
| | | | | | | FA1-TH8X2SC20S1E | | | | | Mountable module ▶ P.283 |
| | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | | P.234 | | | | |
| FA1-TH16X24RA1H20S1E | | | | | P.234 | | | | | | |
| Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | | |
| | | Discrete cable | | 0.75mm ² type (8A max.) | | | FA1-CB3L07SQ**E1F18 | P.156 | | | |
| | | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | | |
| FX5-C16EYT/DSS | Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | | Mountable module ▶ P.284 | FA2-CB1L**MM1H20E | P.176 |
| | | | | | | | FA1-TH1E8Y2SC20S1E | | | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2SC20S1E | | P.253 | | |
| | | | | | | | FA1-TH1E16Y2RA20S1E | | P.255 | | |
| | | | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y1SR20S1E | | P.257 | | |
| | | | | | | | FA1-TH1E16Y1TR20S1E | | P.252 | | |
| | | | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | | P.266 | | |
| | | | | | | | FA-THE16YTH11S | | P.276 | | |
| | | | | Transistor, 1.0A | Module replaceable | 1-wire type | | | | | |
| | | | | | | | FA-THE16YTR20S | | P.279 | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | |
|--------------------------------------|--------------------------------------------|-------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------|--------------------------|------------------------|--------------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------|-------------------|-------|
| FX5-C32EYT/DSS | Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | FA2-CB1LT**MM1H20 | P.177 | | | |
| | | | Screw | | 1-wire type | FA-FXTB32Y | P.142 | FA-FXCBL**MM2H FA2-CB1LT**MM2H | P.179 P.180 | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 | | | |
| | | | | | | Mountable module ▶ P.284 | FA1-TH1E8Y2SC20S1E | | | P.250 | | |
| | | | | | | Mountable module ▶ P.284 | FA1-TH1E16Y2SC20S1E | | | P.253 | | |
| | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | | |
| | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | | | | |
| | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | | |
| | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | | |
| | | | | | Module replaceable | FA-THE16YTH1S | P.276 | | | | | |
| | | | | | | FA-THE16YTR20S | P.279 | | | | | |
| FX5-C16EYR/D-TS | | Discrete cable | 0.75mm ² type (8A max.) 0.3mm ² type (4A max.) | | | | FA1-CB3L07SQ**E1F18 | P.156 | | | | |
| | | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | | | |
| FX5-C32EYT/D-TS | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | | |
| | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA2-CB1L**EM1F18 FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | |
| | | | | | | | | Mountable module ▶ P.284 | FA1-TH1E8Y2SC20S1E | | | P.250 |
| | Mountable module ▶ P.284 | FA1-TH1E16Y2SC20S1E | | | | | | P.253 | | | | |
| | N/O contact relay | Module mixing possible | | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | | |
| | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | | | | |
| | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | | |
| | FX5-C16EYR/D-TS | | Discrete cable | 0.75mm ² type (8A max.) 0.3mm ² type (4A max.) | | | | FA1-CB3L07SQ**E1F18 | P.156 | | | |
| | | | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | | |
| | FX5-C32EYT/DSS-TS | Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA2-CB1L**EM1F18 | P.157 | | |
| | | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA2-CB1L**EM1F18E | P.157 |
| | | | | | | | | | Mountable module ▶ P.284 | FA1-TH1E8Y2SC20S1E | | |
| Mountable module ▶ P.284 | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | | | | |
| N/O contact relay | | Module mixing possible | Independent | | FA1-TH1E16Y2RA20S1E | P.255 | | | | | | |
| | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | | | | |
| | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | | |
| FX5-C16EYR/DSS-TS | | Discrete cable | 0.75mm ² type (8A max.) 0.3mm ² type (4A max.) | | | | FA1-CB3L07SQ**E1F18 | P.156 | | | | |
| | | | | | | | FA1-CB3L03SQ**E1F18 | P.156 | | | | |

MELSEC iQ-F series <Analog I/O modules>

| Programmable controller module model | Unit type | | | Model | Mountable module | Connection cable | |
|--------------------------------------|-------------------------|--------------|------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| FX5-4AD | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter Voltage input 0 to 5V FA-ATSVM1XV05 P.297 1 to 5V FA-ATSVM1XV15 P.297 -10 to 10V FA-ATSVM1XV1010 P.297 Current input 4 to 20mA FA-ATSVM1XA420 P.298 Distributor 4 to 20mA FA-ATSVM1XD P.299 RTD input -200 to +650°C FA-ATSVM1XRPT P.300 0 to +100°C FA-ATSVM1XRPT0010 P.300 0 to +200°C FA-ATSVM1XRPT0020 P.300 -200 to +600°C FA-ATSVM1XRJPT P.300 Thermocouple input +600 to +1700°C FA-ATSVM1XTB P.301 0 to +1600°C FA-ATSVM1XTR P.301 0 to +1600°C FA-ATSVM1XTS P.301 -200 to +1200°C FA-ATSVM1XTK P.301 0 to +400°C FA-ATSVM1XTK0040 P.301 0 to +600°C FA-ATSVM1XTK0060 P.301 0 to +800°C FA-ATSVM1XTK0080 P.301 -200 to +900°C FA-ATSVM1XTE P.301 -40 to +750°C FA-ATSVM1XTJ P.301 -200 to +350°C FA-ATSVM1XTT P.301 -200 to +1250°C FA-ATSVM1XTN P.301 Pass-through module FA-ATFTMXY P.316 Dummy module FA-ATNDM5 P.317 | FA2-CB2L**AT4XV1E P.302 |
| | | Screw | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | |
| | Discrete cable | Shielded | | | | FA1-CB2L**S1B2-4 P.195 | |
| FX5-8AD | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter (The programmable controller outputs voltage.) Voltage output 0 to 5V FA-ATSVM1YV05 P.311 0 to 10V FA-ATSVM1YV010 P.311 1 to 5V FA-ATSVM1YV15 P.311 -10 to 10V FA-ATSVM1YV1010 P.311 Current output 0 to 20mA FA-ATSVM1YA020 P.312 4 to 20mA FA-ATSVM1YA420 P.312 Pass-through module FA-ATFTMXY P.316 Dummy module FA-ATNDM5 P.317 | FA2-CB2L**AT8XV1E P.302 |
| | | Screw | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 8-channel installation base unit FA-ATB8XTB P.296 8-channel installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKA8XM P.295 | | Cable for distributed installation FA1-CB2L**AT4EX P.318 |
| | Discrete cable | Shielded | | | | FA1-CB2L**S1B2-4 P.195 | |
| FX5-4DA | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter (The programmable controller outputs voltage.) Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 Pass-through module FA-ATFTMXY P.316 Dummy module FA-ATNDM5 P.317 | FA2-CB2L**AT4YV1E P.313 |
| | | Screw | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | Output modules for analog signal converter (The programmable controller outputs current.) Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 Pass-through module FA-ATFTMXY P.316 Dummy module FA-ATNDM5 P.317 | FA2-CB2L**AT4YA1E P.313 |
| | Discrete cable | Shielded | | | | FA1-CB2L**S1B2-4 P.195 | |

MELSEC-Q series <I/O modules>

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | | | | | |
|-----------------------------------------------|---------------------------|--------------------------------------------|----------------------------|-------------------------|----------------------------|------------------------|----------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------|----------------------------------|-------------|----------------------|-------|
| QX10 QX50 | AC | Junction terminal block | Screw | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | | | |
| | Common | | | 2-wire type | FA-TB161ACC2 | P.153 | | | | | | | |
| QX28 | AC | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | | |
| QX40 QX40-S1 | Positive common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 | | | | | |
| | | | | Screw | 1-row terminal block | 1-wire type | FA-TB16XY | P.132 | FA-CBL**TD | P.183 | | | |
| | | 1-wire type | FA-TB161AC | | | P.152 | | | | | | | |
| | | Screw | 3-row terminal block | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 | | | | | |
| | | | | 3-wire type | FA-TB161ACC2 | P.153 | FA-CBL**TD | P.183 | | | | | |
| | | e-CON | DIN rail installation only | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 | | | | | |
| | | | | 3-wire type | FA-TB16XYPN3 | P.136 | | | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for distributed installation) | P.168 P.169 P.170 P.174 | | | |
| | | | | | | | FA1-TH8X2SC20S1E Mountable module ▶ P.283 | | | | P.236 | | |
| | | | | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | | | Independent | FA1-TH4X24RA1L20S1E | P.230 |
| | | | | | | | | | | | | FA1-TH8X24RA1L20S1E | P.232 |
| | | | | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | | | Independent | FA1-TH16X24RA1L20S1E | P.234 |
| | | | | | | | | | | | | FA1-TH4X24RA1H20S1E | P.230 |
| | | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | |
| | | | | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | |
| | | | | | | | | 24VDC, 10mA | 2-wire type | FA-TB16X24D31 | P.239 | | |
| | | | | | | | | | | FA-TB16X24D31L | P.240 | | |
| | | | | | | | | | | FA-TB16X48D31L | P.241 | | |
| | | | | | | | | | | FA-TB16X100D31L | P.242 | | |
| | | 100VDC, 2.5mA | 2-wire type | FA-TB16X100A31 | P.243 | | | | | | | | |
| | | | | FA-TB16X100A31L | P.244 | | | | | | | | |
| | | 100VAC, 8mA | 2-wire type | FA-TB16X200A31 | P.245 | | | | | | | | |
| | | | | FA-TB16X200A31L | P.246 | | | | | | | | |
| | | QX40H | Positive common | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | |
| Spring clamp | 1-wire type | | | | | FA1-TE1SV32XY | P.126 | FA-CBL**FMV | P.161 | | | | |
| | 1-wire type | | | | | FA1-TE1S32XY | P.127 | | | | | | |
| Screw | Small-size terminal block | | | | | 1-wire type | FA-TB32XY | P.132 | | | | | |
| | | | | | | | FA-TBS32XY | P.133 | | | | | |
| | | | | | | | FA-TB1L32XY | P.133 | | | | | |
| | | | | | | | FA-TB32XYL | P.134 | | | | | |
| | | | | | | | 3-row terminal block | 2-wire type | FA-TB32XYN3 | P.135 | | | |
| | | | | | | | | | FA-TB8XY1 | P.138 | | | |
| | | | | | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY2 | P.138 | | | |
| | | | | | | | | | FA-TB8XY3 | P.138 | | | |
| | | | | | | | | | FA-TB8XY4 | P.138 | | | |
| | | FA-TB16XY1N | P.137 | | | | | | | | | | |
| Distributed 8-point (8 to F) | 2-wire type | FA-TB16XY2N | P.137 | | | | | | | | | | |
| | | FA-TB16XY1 | P.139 | | | | | | | | | | |
| Distributed 8-point (10 to 17) | 3-wire type | FA-TB16XY2 | P.139 | | | | | | | | | | |
| | | FA-TB16XY2 | P.139 | | | | | | | | | | |
| Distributed 8-point (18 to 1F) | 3-wire type | FA-CB8XY1 | P.146 | | | | | | | | | | |
| | | FA-CB8XY2 | P.146 | | | | | | | | | | |
| | | FA-CB8XY3 | P.146 | | | | | | | | | | |
| | | FA-CB8XY4 | P.146 | | | | | | | | | | |
| Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | P.147 | | | | | | | | | | |
| | | FA-CB16XY2 | P.147 | | | | | | | | | | |
| Distributed 16-point (10 to 1F) | 3-wire type | FA-LEB32XY | P.150 | | | | | | | | | | |
| | | FA-LEB32XY-3A | P.150 | | | | | | | | | | |
| QX41 QX42 QX41-S1 QX41-S2 QX42-S1 | Positive common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V FA-CBL**FM2LV | P.162 P.163 | | | | | |
| | | | | Screw | 1-row terminal block | 1-wire type | FA-TB16XY | P.132 | FA-CBL**FM2LV | P.163 | | | |
| | | | | | | 2-wire type | FA-TB1L16XYN | P.134 | | | | | |
| | | | | Screw | 3-row terminal block | 3-wire type | FA-TB16XYPN | P.135 | | | | | |
| | | | | | | 3-wire type | FA-TB16XYPN3 | P.136 | | | | | |
| | | | | e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY | P.149 | | | | | |
| | | | | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | |
|-----------------------------------------------|-------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------|------------------------------|----------------------|----------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------|-------------------------|--------------|-------|
| QX41 QX42 QX41-S1 QX41-S2 QX42-S1 | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | P.236 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for distributed installation) | P.162 P.163 P.174 | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH8X24RA1L20S1E | P.236 | | | | |
| | | | | | | | FA1-TH4X24RA1L20S1E | P.230 | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH8X24RA1L20S1E | P.232 | | | | |
| | | | | | | | FA1-TH16X24RA1L20S1E | P.234 | | | | |
| | | | | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E | P.230 | | | | |
| | | | FA1-TH8X24RA1H20S1E | | | | P.232 | | | | | |
| | | | Screw | Module mixing possible | Independent | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | | | | | FA-TH16XRA20S | P.238 | | | | | |
| | | | | | | FA-TH16X24D31 | P.239 | | | | | |
| | | | | | | 2-wire type | FA-TH16X24D31L | P.240 | | | | |
| | | | | | | 2-wire type | FA-TH16X48D31L | P.241 | | | | |
| | | | | | | 2-wire type | FA-TH16X100D31L | P.242 | | | | |
| | | | | | | 2-wire type | FA-TH16X100A31 | P.243 | | | | |
| 2-wire type | FA-TH16X100A31L | P.244 | | | | | | | | | | |
| 2-wire type | 2-wire type | 2-wire type | FA-TH16X200A31 | P.245 | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | |
| Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | | | |
| | | | Discrete cable | | | | | FA-CBL**FV FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.158 P.159 P.159 P.159 | | | |
| | | | Spring clamp terminal block conversion module (only for the QX41, QX41-S1, and QX41-S2) | | | | FA1-TE40PA | P.131 | | | | |
| QX70 | Positive common | Junction terminal block | Spring clamp | 1-row terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 | | | |
| | | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 | | | |
| | | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TMV20 | P.170 | | | |
| | | | | | 2-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | |
| | | | | | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**M20 | P.168 | | | |
| | | | | | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**YM20 | P.169 | | | |
| | | | Screw | 3-row terminal block | 3-wire type | FA-TB161ACC2 | P.153 | FA-CBL**TD | P.183 | | | |
| | | | | | | FA-TB16XYPN | P.135 | | | | | |
| | | | e-CON | 3-wire type | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**M20 | P.168 | | | |
| | | | | | | FA-LEB16XY | P.149 | FA-CBL**YM20 | P.169 | | | |
| | | | QX70 | Negative common | Junction terminal block | Spring clamp | 1-row terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 |
| | | | | | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 |
| | | | | | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 |
| | | | | | | | | 2-wire type | FA-TB1L16XYP | P.134 | FA-CBL**M20 | P.168 |
| 2-wire type | FA-TB1L16XYP | P.134 | | | | | | FA-CBL**YM20 | P.169 | | | |
| 3-wire type | FA-TB161ACC2 | P.153 | | | | | | FA-CBL**TD | P.183 | | | |
| Screw | 3-row terminal block | 3-wire type | | | | FA-TB16XYPN | P.135 | | | | | |
| | | | | | | FA-TB16XYPN3 | P.136 | FA-CBL**M20 | P.168 | | | |
| e-CON | 3-wire type | 3-wire type | | | | FA-LEB16XY | P.149 | FA-CBL**YM20 | P.169 | | | |
| | | | | | | FA-LEB16XY-D | P.149 | | | | | |
| QX70H | Positive common | Junction terminal block | | | | Screw | 1-wire type | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 |
| | | | | | | | | 1-wire type | FA1-TE1SV16XY | P.130 | | |
| QX71 QX72 | Positive common | Junction terminal block | | | | Spring clamp | 1-wire type | 1-wire type | FA1-TE1SV32XY | P.126 | FA-CBL**FMV | P.161 |
| | | | | | | | | 1-wire type | FA1-TE1S32XY | P.127 | | |
| | | | Screw | 2-wire type | FA-TB32XY | | | P.132 | | | | |
| | | | | | Small-size terminal block | | | 1-wire type | FA-TBS32XY | P.133 | | |
| | | | | | 1-row terminal block | | | 2-wire type | FA-TB1L32XY | P.133 | | |
| | | | | | 3-row terminal block | | | 2-wire type | FA-TB32XYN3 | P.135 | | |
| | | | | | Distributed 8-point (0 to 7) | | | 3-wire type | FA-TB8XY1 | P.138 | | |
| | | | | | Distributed 8-point (8 to F) | | | | FA-TB8XY2 | P.138 | | |
| | | | Distributed 8-point (10 to 17) | FA-TB8XY3 | P.138 | | | | | | | |
| | | | Distributed 8-point (18 to 1F) | FA-TB8XY4 | P.138 | | | | | | | |
| | | | Distributed 16-point (0 to F) | 2-wire type | FA-TB16XY1N | | | P.137 | | | | |
| | | | Distributed 16-point (10 to 1F) | | FA-TB16XY2N | | | P.137 | | | | |
| | | | Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 | P.139 | | | | | | |
| | | | Distributed 16-point (10 to 1F) | | FA-TB16XY2 | P.139 | | | | | | |
| | | | One-touch connector | 3-wire type | 3-wire type | FA-CB8XY1 | P.146 | | | | | |
| | | | | | | FA-CB8XY2 | P.146 | | | | | |
| | | | | | | FA-CB8XY3 | P.146 | | | | | |
| | | | | | | FA-CB8XY4 | P.146 | | | | | |
| | | | | | | FA-CB16XY1 | P.147 | | | | | |
| | | | | | | FA-CB16XY2 | P.147 | | | | | |
| | | | e-CON | 3-wire type | 3-wire type | FA-LEB32XY | P.150 | | | | | |
| | | | | | | FA-LEB32XY-3 | P.150 | | | | | |
| | | | Junction terminal block | Screw | 3-wire type | FA-LEB32XY-3A | P.150 | | | | | |
| | | | | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V | P.162 | | |
| 1-wire type | FA-TB16XY | P.132 | | | | FA-CBL**FM2LV | P.163 | | | | | |
| 2-wire type | FA-TB1L16XYN | P.134 | | | | FA-CBL**FM2LV | P.163 | | | | | |
| 3-wire type | FA-TB16XYPN | P.135 | | | | | | | | | | |
| 3-wire type | FA-TB16XYPN3 | P.136 | | | | FA-CBL**FM2V | P.162 | | | | | |
| 3-wire type | FA-LEB16XY | P.149 | | | | FA-CBL**FM2LV | P.163 | | | | | |
| 3-wire type | FA-LEB16XY-D | P.149 | | | | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | Model | | Connection cable | | |
|--------------------------------------|-------------------------------------------------------------------|--------------------------------|--------------------------------|----------------------------|----------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| QX71 QX72 | Negative common | Junction terminal block | Spring clamp | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**FMVE FA-CBL**FMVE FA-CBL**MMH (for distributed installation) FA-CBL**FMVE FA-CBL**MMH (for distributed installation) FA-CBL**FMVE FA-CBL**MMH (for distributed installation) FA-CBL**FMVE FA-CBL**MMH (for distributed installation) FA-CBL**FMVE P.164 | |
| | | | | 1-wire type | FA1-TE1S32XY | P.127 | | |
| | | | Screw | Small-size terminal block | 1-wire type | FA-TB32XY | | P.132 |
| | | | | | 1-wire type | FA-TBS32XY | | P.133 |
| | | | | | 1-wire type | FA-TB1L32XY | | P.133 |
| | | | | 3-row terminal block | 2-wire type | FA-TB32XYP3 | | P.135 |
| | | | | | 3-wire type | FA-TB8XY1 | | P.138 |
| | | | | | | FA-TB8XY2 | | P.138 |
| | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY3 | P.138 | | |
| | | | | | FA-TB8XY4 | P.138 | | |
| | | | Distributed 8-point (8 to F) | 3-wire type | FA-TB16XY1 | P.139 | | |
| | | | | | FA-TB16XY2 | P.139 | | |
| | | | Distributed 8-point (10 to 17) | 3-wire type | FA-TB16XY2 | P.139 | | |
| | | | | | FA-TB16XY2 | P.139 | | |
| | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | FA-CB8XY1 | P.146 | | | |
| | | | | FA-CB8XY2 | P.146 | | | |
| | | | | FA-CB8XY3 | P.146 | | | |
| | | Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY3 | P.146 | | | |
| | | | | FA-CB8XY4 | P.146 | | | |
| | | | | FA-CB16XY1 | P.147 | | | |
| Distributed 8-point (18 to 1F) | 3-wire type | FA-CB16XY2 | P.147 | | | | | |
| | | FA-CB16XY2 | P.147 | | | | | |
| Distributed 16-point (0 to F) | 3-wire type | FA-LEB32XY | P.150 | | | | | |
| | | FA-LEB32XY-3 | P.150 | | | | | |
| Distributed 16-point (10 to 1F) | 3-wire type | FA-LEB32XY-3A | P.150 | | | | | |
| | | FA-LEB32XY-3A | P.150 | | | | | |
| e-CON | 3-wire type | FA-LEB32XY | P.150 | | | | | |
| | | FA-LEB32XY-3 | P.150 | | | | | |
| Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M P.187 FA-CBL**FV P.158 FA-BCBL**FFBL P.159 FA-BCBL**FFBLY P.159 FA-BCBL**FFBLR P.159 | |
| | | | | | Discrete cable | | | |
| | Spring clamp terminal block conversion module (only for the QX71) | | | | FA1-TE40PA | P.131 | | |
| | | | | | | | | |
| | | | | | | | | |
| QX80 | Negative common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 P.168 FA-CBL**YM20 P.169 FA-CBL**TMV20 P.170 FA-CBL**TD P.183 FA-CBL**M20 P.168 FA-CBL**YM20 P.169 FA-CBL**TMV20 P.170 FA-CBL**TD P.183 FA-CBL**M20 P.168 FA-CBL**YM20 P.169 FA-CBL**TMV20 P.170 | |
| | | | | 1-wire type | FA-TB16XY | P.132 | | |
| | | | | 1-wire type | FA-TB161AC | P.152 | | |
| | | | Screw | 1-row terminal block | 2-wire type | FA-TB1L16XYP | | P.134 |
| | | | | | | FA-TB161ACC 1 | | P.153 |
| | | | | | 3-wire type | FA-TB16XYPN | | P.135 |
| | | | 3-row terminal block | 3-wire type | FA-TB16XYPN3 | P.136 | | |
| | | | | | FA-TB16XY | P.149 | | |
| | | | e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY | | P.149 |
| | | | | | | FA-LEB16XY-D | | P.149 |
| QX80H | Negative common | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD P.183 | |
| QX81 QX81-S2 | Negative common | Junction terminal block | Spring clamp | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**DMFX FA-CBL**DMFX FA-CBL**MMH (for distributed installation) FA-CBL**DMFX FA-CBL**MMH (for distributed installation) FA-CBL**DMFX FA-CBL**MMH (for distributed installation) FA-CBL**DMFX FA-CBL**MMH (for distributed installation) FA-CBL**DMFX P.165 | |
| | | | | 1-wire type | FA1-TE1S32XY | P.127 | | |
| | | | Screw | Small-size terminal block | 1-wire type | FA-TB32XY | | P.132 |
| | | | | | | FA-TBS32XY | | P.133 |
| | | | | | | FA-TB1L32XY | | P.133 |
| | | | | | 1-wire type | FA-TB32XYH | | P.134 |
| | | | | | | 2-wire type | | FA-TB32XYP3 |
| | | | | 3-row terminal block | 3-wire type | FA-TB8XY1 | | P.138 |
| | | | | | | FA-TB8XY2 | | P.138 |
| | | | | | | FA-TB8XY3 | | P.138 |
| | | | | | | FA-TB8XY4 | | P.138 |
| | | | | | | FA-TB16XY1 | | P.139 |
| | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB16XY2 | P.139 | | |
| | | | | | FA-TB16XY2 | P.139 | | |
| | | | Distributed 8-point (8 to F) | 3-wire type | FA-CB8XY1 | P.146 | | |
| | | | | | FA-CB8XY2 | P.146 | | |
| | | | Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY3 | P.146 | | |
| | | | | | FA-CB8XY4 | P.146 | | |
| | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-CB16XY1 | P.147 | | |
| | | | | | FA-CB16XY2 | P.147 | | |
| Distributed 16-point (0 to F) | 3-wire type | FA-LEB32XY | P.150 | | | | | |
| | | FA-LEB32XY-3 | P.150 | | | | | |
| Distributed 16-point (10 to 1F) | 3-wire type | FA-LEB32XY-3A | P.150 | | | | | |
| | | FA-LEB32XY-3A | P.150 | | | | | |
| e-CON | 3-wire type | FA-LEB32XY | P.150 | | | | | |
| | | FA-LEB32XY-3 | P.150 | | | | | |
| Discrete cable | | | | | | FA-BCBL**DFBL P.160 | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | | | | | | | | |
|--------------------------------------|--------------------|---------------------------------|--------------------------------------------|--------------------------------|--------------------------------|------------------------|---------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------|---------------|---------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------|-------------------|-------|
| QX82 QX82-S1 | Negative common | Junction terminal block | Spring clamp | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**FMVE | P.164 | | | | | | | | |
| | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | | | | | | | | |
| | | | | Screw | Small-size terminal block | 1-wire type | | | FA-TB32XY | P.132 | | | | | | |
| | | | | | | 1-wire type | | | FA-TBS32XY | P.133 | | | | | | |
| | | | | | 1-row terminal block | 1-wire type | | | FA-TB1L32XY | P.133 | | | | | | |
| | | | | | LED | 1-wire type | | | FA-TB32XYH | P.134 | | | | | | |
| | | | 3-row terminal block | 2-wire type | FA-TB32XYP3 | P.135 | | | | | | | | | | |
| | | | Spring clamp | 1-wire type | | | | | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V FA-CBL**FM2LV | P.162 P.163 | | | | |
| | | | | Screw | Distributed 8-point (0 to 7) | 3-wire type | | | FA-TB8XY1 | P.138 | FA-CBL**FMVE FA-CBL**MMH (for distributed installation) | P.164 P.171 | | | | |
| | | | | | | | | | FA-TB8XY2 | P.138 | | | | | | |
| | | | | | Distributed 8-point (10 to 17) | FA-TB8XY3 | | | P.138 | | | | | | | |
| | | | | | | FA-TB8XY4 | | | P.138 | | | | | | | |
| | | Distributed 16-point (0 to F) | | 3-wire type | FA-TB16XY1 | P.139 | FA-CBL**FMVE FA-CBL**MMH (for distributed installation) | P.164 P.171 | | | | | | | | |
| | | | FA-TB16XY2 | | P.139 | | | | | | | | | | | |
| | | One-touch connector | Distributed 8-point (0 to F) | 3-wire type | FA-CB8XY1 | P.146 | FA-CBL**FMVE FA-CBL**MMH (for distributed installation) | P.164 P.171 | | | | | | | | |
| | | | | | FA-CB8XY2 | P.146 | | | | | | | | | | |
| | | | | | FA-CB8XY3 | P.146 | | | | | | | | | | |
| | | | Distributed 8-point (10 to 17) | FA-CB8XY4 | P.146 | | | | | | | | | | | |
| | | | | Distributed 8-point (18 to 1F) | FA-CB16XY1 | P.147 | | | | | | | | | | |
| | | | Distributed 16-point (0 to F) | | 3-wire type | FA-CB16XY2 | | | P.147 | | | | | | | |
| | | Distributed 16-point (10 to 1F) | | FA-LEB32XY | | P.150 | FA-CBL**FMVE | P.164 | | | | | | | | |
| | | | e-CON | 3-wire type | | | | | FA-LEB32XY-3 | P.150 | | | | | | |
| | | Screw | | Small-size terminal block | 1-wire type | | | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | | | | |
| | | | Discrete cable | | | | | FA-CBL**FV FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.158 P.159 P.159 P.159 | | | | | | | |
| QX90H | Negative common | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | | | | | |
| QY10 QY22 | | Junction terminal block | Screw | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TD | P.183 | | | | | | | | |
| | | | | 2-wire type | FA-TB161ACC2 | P.153 | | | | | | | | | | |
| QY18A QY68A | | Junction terminal block | Screw | | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | | | | | |
| QY40P QY50 | | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 | | | | | | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | | | | | | | | | | |
| | | | | 1-wire type | FA-TB161AC | P.152 | | | FA-CBL**TD | P.183 | | | | | | |
| | | | | Screw | 1-row terminal block | 2-wire type | | | FA-TB1L16XYP | P.134 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 | | | | |
| | | | | | | 2-wire type | | | FA-TB161ACC1 | P.153 | | | | | | |
| | | | | | 3-row terminal block | 3-wire type | | | FA-TB16XYPN | P.135 | | | | | | |
| | | | 3-wire type | | | FA-TB16XYPN3 | | | P.136 | | | | | | | |
| | | | e-CON | DIN rail installation only | | | | | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 | P.168 P.169 P.170 | | | |
| | | | | | | | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | |
| | | | Digital signal converter (terminal module) | | Spring clamp | Installation base unit | | | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**TMV20 FA-CBL**MMH20 (for distributed installation) | P.168 P.169 P.170 P.174 | | |
| | | | | | | | | | | | Mountable module ▶ P.284 | | | | FA1-TH8Y2SC20S1E | P.250 |
| | | | | | | | | | | | Mountable module ▶ P.284 | | | | FA1-TH16Y2SC20S1E | P.259 |
| | | N/O contact relay | | | | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | | | |
| | | | | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | | | | |
| | | | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | | | | |
| | | Screw | | | N/O contact relay | Module replaceable | 1-wire type | FA-TH16YRA11 | P.260 | | | | | | | |
| | | | | | | | 2-wire type | FA-TH16YRA21 | P.261 | | | | | | | |
| | | | | | | | Independent | FA-TH16YRA20 | P.262 | | | | | | | |
| | | | | | | | 1-wire type | FA-TH16YRA11S | P.263 | | | | | | | |
| | | | | | | | 2-wire type | FA-TH16YRA21S | P.264 | | | | | | | |
| | | | | | | | Independent | FA-TH16YRA20S | P.265 | | | | | | | |
| | | | | | C/O contact relay | Module mixing possible | Independent | FA-TH16YRA20SL | P.267 | | | | | | | |
| | | | | | | | | FA-TH16YRAB20SL | P.268 | | | | | | | |
| | | | | | | | | FA-TH16YRAC20S | P.269 | | | | | | | |
| Triac, 1.0A | Module replaceable | | | | | Independent | 1-wire type | FA-TH16YSR11S | P.270 | | | | | | | |
| | | | | | | | 2-wire type | FA-TH16YSR21S | P.271 | | | | | | | |
| | | | | | | | Module mixing possible | Independent | FA-TH16YSR20S | P.272 | | | | | | |
| Transistor, 1.0A (sink) | Module replaceable | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | | | | | | | | | | |
| | | | 2-wire type | FA-TH16YTL21S | P.274 | | | | | | | | | | | |
| | | | 1-wire type | FA-TH16YTH11S | P.275 | | | | | | | | | | | |
| Transistor, 1.0A (source) | Module replaceable | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | | | | | | | | |
| | | | Independent | FA-TH16Y2TR20 | P.278 | | | | | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | Model | Connection cable | | | |
|------------------------------------------------------------------------------|---------------------------------|--------------------------------------------|--------------------------------|----------------------------|-------------------------|----------------------|--------------------------|----------------------------------------------------------------------------------------------------|
| QY41P QY41H QY42P | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV32XY P.126 | FA-CBL**FMV P.161 | | | |
| | | | 1-wire type | FA1-TE1S32XY P.127 | | | | |
| | | | 1-wire type | FA-TB32XY P.132 | | | | |
| | | Screw | Small-size terminal block | 1-wire type | | FA-TBS32XY P.133 | | |
| | | | | 1-wire type | | FA-TB1L32XY P.133 | | |
| | | | LED | 1-wire type | | FA-TB32XYL P.134 | | |
| | | | 3-row terminal block | 2-wire type | | FA-TB32XYP3 P.135 | | |
| | | | Distributed 8-point (0 to 7) | 3-wire type | | FA-TB8XY1 P.138 | | |
| | | | Distributed 8-point (8 to F) | | | FA-TB8XY2 P.138 | | |
| | | | Distributed 8-point (10 to 17) | | | FA-TB8XY3 P.138 | | |
| | | | Distributed 8-point (18 to 1F) | FA-TB8XY4 P.138 | | | | |
| | | Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 P.139 | | | | |
| | | Distributed 16-point (10 to 1F) | FA-TB16XY2 P.139 | | | | | |
| | | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | | FA-CB8XY1 P.146 | | |
| | | | | | | FA-CB8XY2 P.146 | | |
| | FA-CB8XY3 P.146 | | | | | | | |
| | Distributed 8-point (18 to 1F) | | FA-CB8XY4 P.146 | | | | | |
| | Distributed 16-point (0 to F) | | 3-wire type | FA-CB16XY1 P.147 | | | | |
| | Distributed 16-point (10 to 1F) | FA-CB16XY2 P.147 | | | | | | |
| | e-CON | 3-wire type | FA-LEB32XY P.150 | | | | | |
| | | | FA-LEB32XY-3 P.150 | | | | | |
| | | | FA-LEB32XY-3A P.150 | | | | | |
| | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY P.130 | FA-CBL**FM2V P.162 | | | |
| | | | 1-wire type | FA-TB16XY P.132 | FA-CBL**FM2LV P.163 | | | |
| | | Screw | 1-row terminal block | 2-wire type | FA-TB1L16XYP P.134 | FA-CBL**FM2LV P.163 | | |
| | | | | 3-wire type | FA-TB16XYPN P.135 | | | |
| | | | 3-row terminal block | 3-wire type | FA-TB16XYPN3 P.136 | FA-CBL**FM2V P.162 | | |
| | | e-CON | 3-wire type | FA-LEB16XY P.149 | FA-CBL**FM2LV P.163 | | | |
| | | | | DIN rail installation only | FA-LEB16XY-D P.149 | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E P.248 | FA-CBL**FM2V P.162 FA-CBL**FM2LV P.163 FA-CBL**MMH20 P.174 (for distributed installation) |
| | | | | | | | Mountable module ▶ P.284 | |
| | | | | | | | FA1-TH8Y2SC20S1E P.250 | |
| | N/O contact relay | | Module mixing possible | Independent | FA1-TH16Y2RA20S1E P.254 | | | |
| | | | | | FA1-TH16Y1SR20S1E P.256 | | | |
| | | | | | FA1-TH16Y1TR20S1E P.258 | | | |
| | Screw | | N/O contact relay | Module replaceable | 1-wire type | FA-TH16YRA11 P.260 | | |
| | | | | | 2-wire type | FA-TH16YRA21 P.261 | | |
| | | | | | Independent | FA-TH16YRA20 P.262 | | |
| | | | | | 1-wire type | FA-TH16YRA11S P.263 | | |
| | | | | | 2-wire type | FA-TH16YRA21S P.264 | | |
| | | | N/C contact relay | Module mixing possible | Independent | FA-TH16YRA20S P.265 | | |
| | | | | | | FA-TH16YRA20SL P.267 | | |
| C/O contact relay | | | Module replaceable | Independent | FA-TH16YRAB20SL P.268 | | | |
| | | | | | FA-TH16YRAC20S P.269 | | | |
| Triac, 1.0A | | | Module replaceable | Independent | 1-wire type | FA-TH16YSR11S P.270 | | |
| | 2-wire type | | | | FA-TH16YSR21S P.271 | | | |
| Transistor, 1.0A (sink) | Module replaceable | | Independent | FA-TH16YSR20S P.272 | | | | |
| | | | | 1-wire type | FA-TH16YTL11S P.273 | | | |
| Transistor, 1.0A (source) | Module replaceable | | Independent | 2-wire type | FA-TH16YTL21S P.274 | | | |
| | | | | 1-wire type | FA-TH16YTH11S P.275 | | | |
| Transistor, 1.0A | Module mixing possible | | Independent | FA-TH16YTR20S P.277 | | | | |
| | | FA-TH16Y2TR20 P.278 | | | | | | |
| Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P P.144 | FA-CBL**FMV-M P.187 | | | |
| Discrete cable | | | | | FA-CBL**FV P.158 | | | |
| | | | | | FA-BCBL**FFBL P.159 | | | |
| | | | | | FA-BCBL**FFBLY P.159 | | | |
| | | | | | FA-BCBL**FFBLR P.159 | | | |
| Spring clamp terminal block conversion module (only for the QY41P and QY41H) | | | | FA1-TE40PA P.131 | | | | |
| QY70 | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY P.130 | FA-CBL**M20 P.168 | | | |
| | | | 1-wire type | FA-TB16XY P.132 | FA-CBL**YM20 P.169 | | | |
| | | | 1-wire type | FA-TB161AC P.152 | FA-CBL**TMV20 P.170 | | | |
| | | Screw | 1-row terminal block | 2-wire type | FA-TB161AC P.152 | FA-CBL**TD P.183 | | |
| | | | | | FA-TB1L16XYP P.134 | FA-CBL**M20 P.168 | | |
| | | | 3-row terminal block | 3-wire type | FA-TB161ACC1 P.153 | FA-CBL**YM20 P.169 | | |
| | | | | | FA-TB16XYPN P.135 | FA-CBL**TMV20 P.170 | | |
| | | e-CON | DIN rail installation only | 3-wire type | FA-TB16XYPN3 P.136 | FA-CBL**M20 P.168 | | |
| | | | | | FA-LEB16XY P.149 | FA-CBL**YM20 P.169 | | |
| | | | | | FA-LEB16XY-D P.149 | FA-CBL**TMV20 P.170 | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | | Model | Connection cable | | | |
|-----------------------------------------------|--------------------------------------------|--------------------------------|------------------------------|------------------------|---------------|--------------------------|---------------|---------------|-------|
| QY71 | Junction terminal block | Spring clamp | | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**FMV | P.161 | |
| | | | | | 1-wire type | FA1-TE1S32XY | | | P.127 |
| | | | | | | FA-TB32XY | | | P.132 |
| | | Screw | Small-size terminal block | 1-row terminal block | 1-wire type | FA-TBS32XY | | | P.133 |
| | | | | | | FA-TB1L32XY | | | P.133 |
| | | | LED | 1-wire type | | FA-TB32XYL | | | P.134 |
| | | | | | | FA-TB32XYP3 | | | P.135 |
| | | | Distributed 8-point (0 to 7) | 3-wire type | | FA-TB8XY1 | | | P.138 |
| | | | | | | FA-TB8XY2 | | | P.138 |
| | | | | | | FA-TB8XY3 | | | P.138 |
| | | | | | | FA-TB8XY4 | | | P.138 |
| | | Distributed 8-point (10 to 17) | 3-wire type | | FA-TB16XY1 | P.139 | | | |
| | | | | | FA-TB16XY2 | P.139 | | | |
| | | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | | FA-CB8XY1 | | | P.146 |
| | | | | | | FA-CB8XY2 | | | P.146 |
| | | | | | FA-CB8XY3 | P.146 | | | |
| | Distributed 8-point (10 to 17) | | 3-wire type | | FA-CB8XY4 | P.146 | | | |
| | | | | | FA-CB16XY1 | P.147 | | | |
| | Distributed 16-point (0 to 1F) | | 3-wire type | | FA-CB16XY2 | P.147 | | | |
| | | | | | | | | | |
| | e-CON | | | 3-wire type | FA-LEB32XY | P.150 | | | |
| | | | | | FA-LEB32XY-3 | P.150 | | | |
| | | | | | FA-LEB32XY-3A | P.150 | | | |
| | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V | P.162 | |
| | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**FM2LV | P.163 | |
| | | Screw | 1-row terminal block | 2-wire type | FA-TB1L16XYP | P.134 | FA-CBL**FM2LV | P.163 | |
| | | | | 3-wire type | FA-TB16XYPN | P.135 | | | |
| 3-row terminal block | | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**FM2V | P.162 | | | |
| | | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**FM2LV | P.163 | | | |
| e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | | | | | |
| | | | | | | | | | |
| Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | |
| Discrete cable | | | | | | FA-CBL**FV | P.158 | | |
| | | | | | | FA-BCBL**FFBL | P.159 | | |
| | | | | | | FA-BCBL**FFBLY | P.159 | | |
| | | | | | | FA-BCBL**FFBLR | P.159 | | |
| Spring clamp terminal block conversion module | | | | | FA1-TE40PA | P.131 | | | |
| QY80 | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 | |
| | | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 |
| | | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**TMV20 | P.170 |
| | | Screw | 1-row terminal block | 2-wire type | | FA-TB1L16XYN | P.134 | FA-CBL**TD | P.183 |
| | | | | | | FA-TB1L16XYN | P.134 | FA-CBL**M20 | P.168 |
| | | | 3-row terminal block | 3-wire type | | FA-TB161ACC2 | P.153 | FA-CBL**YM20 | P.169 |
| | | | | | | FA-TB16XYPN | P.135 | FA-CBL**TMV20 | P.170 |
| | | 3-row terminal block | 3-wire type | | FA-TB16XYPN3 | P.136 | FA-CBL**M20 | P.168 | |
| | | | | | FA-TB16XYPN3 | P.136 | FA-CBL**YM20 | P.169 | |
| | e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**TMV20 | P.170 | | |
| | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**M20 | P.168 |
| | | | | | | Mountable module ▶ P.284 | | | |
| | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | |
| | | | Mountable module ▶ P.284 | | | | | | |
| FA1-TH1E16Y2SC20S1E | | | P.253 | | | | | | |
| Mountable module ▶ P.284 | | | | | | | | | |
| N/O contact relay | | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | FA-CBL**YM20 | P.169 | | |
| | | | | FA1-TH1E16Y1SR20S1E | P.257 | FA-CBL**TMV20 | P.170 | | |
| Triac, 1.0A | | Module mixing possible | Independent | FA1-TH1E16Y1TR20S1E | P.252 | FA-CBL**MMH20 | P.174 | | |
| | | | | | | | | | |
| Screw | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | |
| | | | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | | Model | | Connection cable | | |
|--------------------------------------------|---------------------------------|--------------------------------|--------------------------------|---------------------------------|--------------------------|----------------|------------------|-------|-------|
| QY81P | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE5V32XY | P.126 | FA-CBL**DMFY | P.166 | |
| | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | |
| | | Screw | | Small-size terminal block | 1-wire type | FA-TB32XY | | | P.132 |
| | | | | | 1-wire type | FA-TBS32XY | | | P.133 |
| | | | | 1-row terminal block | 1-wire type | FA-TB1L32XY | | | P.133 |
| | | | | LED | 1-wire type | FA-TB32XYH | | | P.134 |
| | | Screw | | 3-row terminal block | 2-wire type | FA-TB32XYN3 | | | P.135 |
| | | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY1 | | | P.138 |
| | | | | Distributed 8-point (8 to F) | | FA-TB8XY2 | | | P.138 |
| | | | | Distributed 8-point (10 to 17) | | FA-TB8XY3 | | | P.138 |
| | | Distributed 8-point (18 to 1F) | FA-TB8XY4 | P.138 | | | | | |
| | | Screw | | Distributed 16-point (0 to F) | 2-wire type | FA-TB16XY1N | | | P.137 |
| | | | | Distributed 16-point (10 to 1F) | 2-wire type | FA-TB16XY2N | | | P.137 |
| | | | | Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 | | | P.139 |
| | | | | Distributed 16-point (10 to 1F) | | FA-TB16XY2 | | | P.139 |
| | One-touch connector | | Distributed 8-point (0 to 7) | 3-wire type | FA-CB8XY1 | P.146 | | | |
| | | | Distributed 8-point (8 to F) | | FA-CB8XY2 | P.146 | | | |
| | | | Distributed 8-point (10 to 17) | | FA-CB8XY3 | P.146 | | | |
| | | | Distributed 8-point (18 to 1F) | | FA-CB8XY4 | P.146 | | | |
| | | | Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | P.147 | | | |
| | Distributed 16-point (10 to 1F) | FA-CB16XY2 | P.147 | | | | | | |
| | e-CON | | | | 3-wire type | FA-LEB32XY | P.150 | | |
| | | | | | 3-wire type | FA-LEB32XY-3 | P.150 | | |
| | e-CON | | | | 3-wire type | FA-LEB32XY-3A | P.150 | | |
| | | | | | 3-wire type | FA-LEB32XY-3A | P.150 | | |
| | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**DM2FY | P.167 | |
| | | | | 1-wire type | FA-TB16XY | P.132 | | | |
| Screw | | 3-wire type | FA-TB16XYPN | P.135 | | | | | |
| | | 3-wire type | FA-TB16XYPN3 | P.136 | | | | | |
| e-CON | | DIN rail installation only | | 3-wire type | FA-LEB16XY | P.149 | | | |
| | | | | 3-wire type | FA-LEB16XY-D | P.149 | | | |
| Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**DM2FY | P.167 | |
| | | | | | Mountable module ▶ P.284 | P.250 | | | |
| | | | | | FA1-TH1E8Y2SC20S1E | P.253 | | | |
| | | Mountable module ▶ P.284 | P.253 | | | | | | |
| | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | |
| | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | |
| | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | |
| | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | |
| | | | | | FA1-TH1E16Y2RA20S | P.266 | | | |
| | | | | | FA-THE16YTH11S | P.276 | | | |
| Screw | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-THE16YTR20S | P.279 | | | | |
| | | | | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | |
| Discrete cable | | | | | | FA-BCBL**DFBL | P.160 | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | | Model | | Connection cable | | | | |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|---------------------------------|------------------------|-----------------------------------------------------------------|----------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------|----------------|
| QY82P | Junction terminal block | Spring clamp | | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**FMV | P.161 | | | |
| | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | | | |
| | | Screw | | Small-size terminal block | 1-wire type | FA-TB32XY | | | P.132 | FA-CBL**FMV FA-CBL**MMH (for distributed installation) | P.161 P.171 |
| | | | | | 1-row terminal block | FA-TB1L32XY | | | P.133 | | |
| | | | | LED | 1-wire type | FA-TB32XYH | | | P.134 | | |
| | | | | 3-row terminal block | 2-wire type | FA-TB32XYN3 | | | P.135 | | |
| | | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY1 | | | P.138 | | |
| | | Distributed 8-point (8 to F) | FA-TB8XY2 | P.138 | | | | | | | |
| | | Distributed 8-point (10 to 17) | FA-TB8XY3 | P.138 | | | | | | | |
| | | Distributed 8-point (18 to 1F) | FA-TB8XY4 | P.138 | | | | | | | |
| | | Distributed 16-point (0 to F) | 2-wire type | FA-TB16XY1N | P.137 | | | | | | |
| | | Distributed 16-point (10 to 1F) | | FA-TB16XY2N | P.137 | | | | | | |
| | | Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 | P.139 | | | | | | |
| | | Distributed 16-point (10 to 1F) | | FA-TB16XY2 | P.139 | | | | | | |
| | | One-touch connector | | Distributed 8-point (0 to 7) | 3-wire type | FA-CB8XY1 | P.146 | FA-CBL**FMV FA-CBL**MMH (for distributed installation) | P.161 P.171 | | |
| | | | | | | Distributed 8-point (8 to F) | FA-CB8XY2 | | | P.146 | |
| | | | | Distributed 8-point (10 to 17) | FA-CB8XY3 | P.146 | | | | | |
| | | | | Distributed 8-point (18 to 1F) | FA-CB8XY4 | P.146 | | | | | |
| | | | | Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | P.147 | | | | |
| | | | | Distributed 16-point (10 to 1F) | | FA-CB16XY2 | P.147 | | | | |
| | e-CON | | 3-wire type | | FA-LEB32XY-3 | P.150 | FA-CBL**FMV | P.161 | | | |
| | | | | | FA-LEB32XY-3A | P.150 | | | | | |
| | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V | P.162 | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**FM2LV | P.163 | | | |
| | | Screw | | 1-row terminal block | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**FM2LV | P.163 | | |
| | | | | 3-row terminal block | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**FM2V | P.162 | | |
| | | | | | | FA-TB16XYPN3 | P.136 | FA-CBL**FM2LV | P.163 | | |
| | | e-CON | | 3-wire type | | FA-LEB16XY | P.149 | FA-CBL**FM2V | P.162 | | |
| | | | | | | FA-LEB16XY-D | P.149 | FA-CBL**FM2LV | P.163 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for distributed installation) | P.162 P.163 P.174 | |
| | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | |
| | Mountable module ▶ P.284 | | | | | | | | | | |
| | FA1-TH1E16Y2SC20S1E | | | P.253 | | | | | | | |
| | Mountable module ▶ P.284 | | | | | | | | | | |
| Screw | N/O contact relay | | Module mixing possible | Independent | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | |
| | | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | | |
| | | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | |
| | | | | | | FA1-TH1E16Y2RA20S | P.266 | | | | |
| | | FA-THE16YTH11S | | | | P.276 | | | | | |
| Transistor, 1.0A (source) | Module replaceable | 1-wire type | Independent | FA-THE16YTR20S | P.279 | | | | | | |
| | | | | | | Transistor, 1.0A | Module mixing possible | Independent | | | |
| Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | | | |
| Discrete cable | | | | | | FA-CBL**FV FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.158 P.159 P.159 P.159 | | | | |
| QX48Y57 | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**TD | P.183 | | | | |
| QH42P QX41Y41P | For the input side, refer to the specifications of the QX41. For the output side, refer to the specifications of the QY41P. | | | | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

MELSEC-Q series <Analog modules>

| Programmable controller module type | Programmable controller module model | Unit type | | | Model | | Connection cable | | |
|---------------------------------------|--------------------------------------|-------------------------|------------------------|----------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------|---------------------|----------------------------------------------------------------------------------|
| | | | | | | | Mountable module | | |
| Channel isolated analog input module | Q68AD-G | Junction terminal block | Screw | Small-size terminal block | FA1-TBS40ADGN P.191 | | FA-CBL**Q68ADGN | P.196 | |
| | | | | | FA-LTB40ADGN P.192 | | | | |
| | Q66AD-DG | Junction terminal block | Screw | Small-size terminal block | FA1-TBS40ADDG P.191 | | FA-CBL**Q66ADDG | P.196 | |
| | | | | | FA-LTB40ADDG P.192 | | | | |
| | Q62AD-DGH | Junction terminal block | Screw | | FA-LTB20P P.145 | | FA-CBL**Q64DAT | P.197 | |
| Channel isolated analog output module | Q66DA-G | Junction terminal block | Screw | Small-size terminal block | FA1-TBS40DAG P.191 | | FA-CBL**Q66DAG | P.196 | |
| | | | | | FA-LTB40DAG P.192 | | | | |
| Analog input module | Q68ADV | Junction terminal block | Screw | | FA-LTB20P P.145 | | FA-CBL**Q68ADT | P.197 | |
| | | | | | | | FA-CBL**Q68ADA | P.198 | |
| | | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | | FA-CBL**ATQ8XVT P.304 |
| | | | | | | | Voltage input | | |
| | | | | | | | 0 to 5V | FA-ATSVM1XV05 P.297 | |
| | | | 1 to 5V | | | | FA-ATSVM1XV15 P.297 | | |
| | | | -10 to 10V | | | | FA-ATSVM1XV1010 P.297 | | |
| | | | Current input | | | | | | |
| | | 4 to 20mA | FA-ATSVM1XA420 P.298 | | | | | | |
| | | Distributor | | | | | | | |
| | | 4 to 20mA | FA-ATSVM1XD P.299 | | | | | | |
| | | RTD input | | | | | | | |
| -200 to +650°C | FA-ATSVM1XRPT P.300 | | | | | | | | |
| 0 to +100°C | FA-ATSVM1XRPT0010 P.300 | | | | | | | | |
| 0 to +200°C | FA-ATSVM1XRPT0020 P.300 | | | | | | | | |
| -200 to +600°C | FA-ATSVM1XRJPT P.300 | | | | | | | | |
| Thermocouple input | | | | | | | | | |
| +600 to +1700°C | FA-ATSVM1XTB P.301 | | | | | | | | |
| 0 to +1600°C | FA-ATSVM1XTR P.301 | | | | | | | | |
| 0 to +1600°C | FA-ATSVM1XTS P.301 | | | | | | | | |
| -200 to +1200°C | FA-ATSVM1XTK P.301 | | | | | | | | |
| 0 to +400°C | FA-ATSVM1XTK0040 P.301 | | | | | | | | |
| 0 to +600°C | FA-ATSVM1XTK0060 P.301 | | | | | | | | |
| 0 to +800°C | FA-ATSVM1XTK0080 P.301 | | | | | | | | |
| -200 to +900°C | FA-ATSVM1XTE P.301 | | | | | | | | |
| -40 to +750°C | FA-ATSVM1XTJ P.301 | | | | | | | | |
| -200 to +350°C | FA-ATSVM1XTT P.301 | | | | | | | | |
| -200 to +1250°C | FA-ATSVM1XTN P.301 | | | | | | | | |
| Pass-through module | FA-ATFTMX5 P.316 | | | | | | | | |
| Dummy module | FA-ATNDM5 P.317 | | | | | | | | |
| FA1-CB2L**AT4EX | P.318 | | | | | | | | |
| FA-CBL**ATQ8XVA | P.303 | | | | | | | | |
| FA-Q6TCA | P.317 | | | | | | | | |
| FA-CBL**Q68ADT | P.197 | | | | | | | | |
| FA-CBL**Q68ADA | P.198 | | | | | | | | |
| FA-Q6TCA | P.317 | | | | | | | | |
| FA-CBL**ATQ8XVT | P.304 | | | | | | | | |
| FA-CBL**ATQ8XVA | P.303 | | | | | | | | |
| FA-Q6TCA | P.317 | | | | | | | | |
| FA-CBL**Q64ADT | P.197 | | | | | | | | |
| FA1-CB2L**AT4XV1T | P.303 | | | | | | | | |
| FA-CBL**ATF | P.304 | | | | | | | | |
| Q68ADI | Junction terminal block | Screw | | FA-LTB20P P.145 | | FA-CBL**Q68ADT | P.197 | | |
| | | | | | | FA-CBL**Q68ADA | P.198 | | |
| | | | | | | FA-Q6TCA | P.317 | | |
| | Analog signal converter | Screw | Module selectable type | Input to the programmable controller: 4 to 20mA | Installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKAA8XM P.295 | Input modules for analog signal converter | FA-CBL**ATQ8XVT | P.304 | |
| | | | | | | | FA-CBL**ATQ8XVA | P.303 | |
| | | | | | | | FA-Q6TCA | P.317 | |
| Q64AD | Junction terminal block | Screw | | FA-LTB20P P.145 | | FA-CBL**Q64ADT | P.197 | | |
| Q64ADH | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | FA1-CB2L**AT4XV1T | P.303 | |
| | | Screw | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | | | |
| Q64AD-GH | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | FA-CBL**ATF | P.304 | |
| | | | | | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 |
| | | Screw | | | 8-channel installation base unit FA-ATB8XTB P.296 | | | | |
| | | | | | Input to the programmable controller: 4 to 20mA | | | | Installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKAA8XM P.295 |

| Programmable controller module type | Programmable controller module model | Unit type | | | | Model | | Connection cable | | |
|--------------------------------------------|---------------------------------------------------|-------------------------|----------------------------------------------------------|---------------------------------------------------|----------------------------------------------------|----------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| | | | | | | | Mountable module | | | |
| Analog output module | Q68DAVN | Junction terminal block | Screw | | | FA-LTB20P | P.145 | | FA-CBL**Q68DAT P.197 FA-CBL**Q68DAA P.198 FA-Q6TCA P.317 | |
| | | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs voltage.) Voltage output 0 to 5V FA-ATSVM1YV05 P.311 0 to 10V FA-ATSVM1YV010 P.311 1 to 5V FA-ATSVM1YV15 P.311 -10 to 10V FA-ATSVM1YV1010 P.311 Current output 0 to 20mA FA-ATSVM1YA020 P.312 4 to 20mA FA-ATSVM1YA420 P.312 Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | FA-CBL**ATQ8YT P.314 FA-CBL**ATQ8YA P.314 FA-Q6TCA P.317 | |
| | | | Screw | | | 4-channel installation base unit FA1-AT1B4Y1TB | P.306 | | Cable for distributed installation FA1-CB2L**AT4EX P.318 | |
| | | | | 8-channel installation base unit FA-ATB8YTB | P.308 | | | | | |
| | | Q68DAIN | Junction terminal block | Screw | | | FA-LTB20P | P.145 | | FA-CBL**Q68DAT P.197 FA-CBL**Q68DAA P.198 FA-Q6TCA P.317 |
| | | | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs current.) Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | FA-CBL**ATQ8YT P.314 FA-CBL**ATQ8YA P.314 FA-Q6TCA P.317 |
| | Screw | | | 4-channel installation base unit FA1-AT1B4Y1TB | | | P.306 | | | |
| | | | | 8-channel installation base unit FA-ATB8YTB | P.308 | | | | | |
| | Q64DAN Q64DAH Q62DAN | | Junction terminal block | Screw | | | FA-LTB20P | P.145 | | FA-CBL**Q64DAT P.197 |
| | | | Analog signal converter (only for the Q64DAN and Q64DAH) | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs voltage.) | FA1-CB2L**AT4YA1T P.313 |
| | | Screw | | 4-channel installation base unit FA1-AT1B4Y1TB | | | P.306 | | | |
| | | | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE | P.306 | Output modules for analog signal converter (The programmable controller outputs current.) | FA1-CB2L**AT4YA1T P.313 | |
| Screw | 4-channel installation base unit FA1-AT1B4Y1TB | | P.306 | | | | | | | |
| Channel isolated thermocouple input module | Q68TD-G-H01 Q68TD-G-H02 | Junction terminal block | Screw | | | FA-LTB40TDG | P.193 | FA-CBL**Q68TDG P.198 | | |
| Thermocouple input module | Q64TD Q64TDV-GH | Junction terminal block | Screw | | | FA-TB20TD | P.193 | FA-CBLQ64TD** P.199 | | |
| RTD input module | Q68RD3-G | Junction terminal block | Screw | | | FA-LTB40RD3G | P.194 | FA-CBL**Q68RD3G P.199 | | |
| Temperature control module | Q64TCTT | Junction terminal block | Screw | | | FA-TB20TC | P.194 | FA-CBLQ64TC** P.200 | | |
| | Q64TCTTN | | | | | | | | | |
| | Q64TCTTBW | | | | | | | | | |
| | Q64TCTTBWN | | | | | | | | | |

MELSEC-Q series <Simple Motion modules and positioning modules>

| Programmable controller module type | Programmable controller module model | Servo amplifier or other devices | Type | | Conversion module or cable model | | Cable between conversion module and servo amplifier | | Cable between positioning module and conversion module | |
|-------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------|----------------------|----------------------------------|-------|-----------------------------------------------------|------------|--------------------------------------------------------|-------|
| | | | | | | | | | | |
| Simple Motion module | QD77MS2 QD77MS4 QD77MS16 | MR-J4-B series MR-J3-B series | Junction terminal block | Screw | FA-LTBQ75M | P.205 | | | FA-CBL**Q7 | P.214 |
| | | Spring clamp terminal block conversion module (only for the QD77MS2) | | | FA1-TE40PA | P.131 | | | | |
| Positioning module (Differential driver output system) | QD70D4 QD70D8 | MR-J5-A series MR-J4-A series MR-J3-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| Positioning module (Differential driver output system) | QD75D1N QD75D1 | MR-J5-A series MR-J4-A series MR-J3-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | | Cable with connectors | | FA-CBLQ75M2J3-1 | P.207 | | | | |
| | | MR-J2-A series MR-J2S-A series | Cable with connectors | | FA-CBLQ75M2J2-1 | P.209 | | | | |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | | General-purpose discrete cable | With pulse generator | FA-CBLQ75G2-1 | P.213 | | | | |
| | | | | | FA-CBLQ75G2-1P | P.213 | | | | |
| | | Spring clamp terminal block conversion module | | | FA1-TE40PA | P.131 | | | | |
| | QD75D2N QD75D2 QD75D4N QD75D4 | MR-J5-A series MR-J4-A series MR-J3-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | | Cable with connectors | | FA-CBLQ75M2J3 | P.207 | | | | |
| | | | | With pulse generator | FA-CBLQ75M2J3-P | P.207 | | | | |
| | | MR-J2-A series MR-J2S-A series | Cable with connectors | | FA-CBLQ75M2J2 | P.209 | | | | |
| | | | | With pulse generator | FA-CBLQ75M2J2-P | P.209 | | | | |
| | | YASKAWA Σ-III series Σ-V series | Cable with connectors | | FA-CBLQ75Y2E3 | P.212 | | | | |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | General-purpose discrete cable | With pulse generator | FA-CBLQ75G2 | P.213 | | | | | |
| | | | FA-CBLQ75G2-P | P.213 | | | | | | |
| | Spring clamp terminal block conversion module (only for the QD75D2N and QD75D2) | | | FA1-TE40PA | P.131 | | | | | |
| Positioning module (open collector output system) | QD75P1N QD75P1 | MR-J5-A series MR-J4-A series MR-J3-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7PM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | | Cable with connectors | | FA-CBLQ75PM2J3-1 | P.207 | | | | |
| | | MR-J2-A series MR-J2S-A series | Cable with connectors | | FA-CBLQ75PM2J2-1 | P.209 | | | | |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | | General-purpose discrete cable | With pulse generator | FA-CBLQ75G2-1 | P.213 | | | | |
| | | | | | FA-CBLQ75G2-1P | P.213 | | | | |
| | | Spring clamp terminal block conversion module | | | FA1-TE40PA | P.131 | | | | |
| | QD75P2N QD75P2 QD75P4N QD75P4 | MR-J5-A series MR-J4-A series MR-J3-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7PM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | | Cable with connectors | | FA-CBLQ75PM2J3 | P.207 | | | | |
| | | MR-J2-A series MR-J2S-A series | Cable with connectors | | FA-CBLQ75PM2J2 | P.209 | | | | |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | | General-purpose discrete cable | With pulse generator | FA-CBLQ75G2 | P.213 | | | | |
| | | | | FA-CBLQ75G2-P | P.213 | | | | | |
| | | Spring clamp terminal block conversion module (only for the QD75P2N and QD75P2) | | | FA1-TE40PA | P.131 | | | | |
| QD75M1 QD75M2 QD75M4 QD75MH1 QD75MH2 QD75MH4 | MR-J4-B series MR-J3-B series | Junction terminal block | Screw | FA-LTBQ75M | P.205 | | | FA-CBL**Q7 | P.214 | |
| | External device | | | | | | | | | |

MELSEC-Q series <High-speed counter modules>

| Programmable controller module model | Unit type | | | Model | | Connection cable | |
|--------------------------------------|-----------------------------------------------|-------|---------------------------|------------------|-------|------------------|-------|
| | | | | | | | |
| QD63P6 QD64D2 | Junction terminal block (only for the QD64D2) | Screw | 5V signal input | FA-LTB40D63P6V5 | P.201 | FA-CBL**QD63P6 | P.202 |
| | | | 12V signal input | FA-LTB40D63P6V12 | P.201 | | |
| | | | 24V signal input | FA-LTB40D63P6V24 | P.201 | | |
| | Spring clamp terminal block conversion module | | | FA1-TE40PA | P.131 | | |
| QD62 QD62E QD62D | Junction terminal block | Screw | Small-size terminal block | FA-TBS40P | P.144 | FA-SCBL**FMV-M | P.202 |
| | Spring clamp terminal block conversion module | | | FA1-TE40PA | P.131 | | |

MELSEC-F series

| Programmable controller module model | Unit type | | | | | Model | Connection cable | |
|----------------------------------------------------------------------------------|---------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------------|--------------------------------|-----------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| FX3GC-32MT/D FX3UC-16MT/D FX3UC-32MT/D FX3UC-32MT-LT FX3UC-32MT-LT-2 | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY P.130 | FA-FXCBL**MMH20 P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY P.140 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) P.175 P.177 P.174 |
| | | | | | | | FA1-TH8X2SC20S1E Mountable module ▶ P.283 | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | |
| | | | | | | | FA1-TH8X24RA1L20S1E P.232 | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E P.234 | |
| | | | | | | | FA1-TH4X24RA1H20S1E P.230 | |
| | | | FA1-TH8X24RA1H20S1E P.232 | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH16XRA20S P.238 | |
| | | | | | | | FA-TH16X24D31 P.239 | |
| | | | | 24VDC, 10mA | 2-wire type | FA-TH16X24D31L P.240 | | |
| | 48VDC, 5mA | FA-TH16X48D31L P.241 | | | | | | |
| | 100VDC, 2.5mA | 2-wire type | | FA-TH16X100D31L P.242 | | | | |
| | 100VAC, 8mA | | | FA-TH16X100A31L P.243 | | | | |
| | 200VAC, 7.5mA | 2-wire type | FA-TH16X100A31L P.244 | | | | | |
| | | | FA-TH16X200A31 P.245 | | | | | |
| | FA-TH16X200A31L P.246 | | | | | | | |
| | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY P.130 | FA-FXCBL**MMH20 P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY P.140 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | FA-FXCBL**MMH20 FA-CBL**MMH20 (for distributed installation) P.175 P.174 |
| | | | | | | | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 | |
| | | | | | | | FA1-TH16Y2RA20S1E P.254 | |
| Triac, 1.0A | | | | Module mixing possible | Independent | FA1-TH16Y1SR20S1E P.256 | | |
| | | | | | | FA1-TH16Y1TR20S1E P.258 | | |
| Screw | | | N/O contact relay | Module replaceable | FA-FXTH16YRA20 P.282 | | | |
| | | | | | Module mixing possible | FA-FXTH16YRA11S P.281 | | |
| FA-FXTH16YRA20S P.280 | | | | | | | | |
| I/O combined | | | Junction terminal block | Screw | 1-wire type | | FA-FXTB16X16Y P.143 | FA-FXCBL**MM2H16X16Y P.181 |
| FX3UC-64MT/D FX3UC-96MT/D | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY P.130 | FA-FXCBL**MMH20 P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY P.140 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) P.175 P.177 P.174 |
| | | | | | | | FA1-TH8X2SC20S1E Mountable module ▶ P.283 | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | |
| | | | | | | | FA1-TH8X24RA1L20S1E P.232 | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E P.234 | |
| | | | | | | | FA1-TH4X24RA1H20S1E P.230 | |
| | | | FA1-TH8X24RA1H20S1E P.232 | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH16XRA20S P.238 | |
| | | | | | | | FA-TH16X24D31 P.239 | |
| | | | | 24VDC, 10mA | 2-wire type | FA-TH16X24D31L P.240 | | |
| | 48VDC, 5mA | FA-TH16X48D31L P.241 | | | | | | |
| | 100VDC, 2.5mA | 2-wire type | | FA-TH16X100D31L P.242 | | | | |
| | 100VAC, 8mA | | | FA-TH16X100A31 P.243 | | | | |
| | 200VAC, 7.5mA | 2-wire type | FA-TH16X100A31L P.244 | | | | | |
| | | | FA-TH16X200A31 P.245 | | | | | |
| | FA-TH16X200A31L P.246 | | | | | | | |
| | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY P.130 | FA-FXCBL**MMH20 P.175 | |
| | | | Screw | | 1-wire type | FA-FXTB16XY P.140 | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) P.175 P.177 P.180 |
| | | | | | | | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 | |
| | | | | | | | FA1-TH16Y2RA20S1E P.254 | |
| Triac, 1.0A | | | | Module mixing possible | Independent | FA1-TH16Y1SR20S1E P.256 | | |
| | | | | | | FA1-TH16Y1TR20S1E P.258 | | |
| Screw | | | N/O contact relay | Module replaceable | FA-FXTH16YRA20 P.282 | | | |
| | | | | | Module mixing possible | FA-FXTH16YRA11S P.281 | | |
| FA-FXTH16YRA20S P.280 | | | | | | | | |
| I/O combined | | | Junction terminal block | Screw | 1-wire type | | FA-FXTB16X16Y P.143 | FA-FXCBL**MM2H16X16Y P.181 |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | | |
|--------------------------------------|------------------------|--------------------------------------------|---------------------|-----------------------------------------------|------------------------|-------------------|----------------------------------------------|------------------------|-----------------------------------------------------------------------------------------|-------------------------|-------------|---------------------|-------|
| FX2NC-16EX | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | | | |
| | | | | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | | | Independent | FA1-TH8X2SC20S1E | P.236 |
| | | | | | | | | | | | | FA1-TH4X24RA1L20S1E | P.230 |
| | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | | |
| | | | FA1-TH8X24RA1H20S1E | | | | P.232 | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | | | | | | FA-TH16XRA20S | P.238 | | | | | |
| | | | | | | | FA-TH16X24D31 | P.239 | | | | | |
| | | | | 24VDC, 10mA | Module mixing possible | Independent | FA-TH16X24D31L | P.240 | | | | | |
| | | | | | | | FA-TH16X48D31L | P.241 | | | | | |
| FA-TH16X100D31L | P.242 | | | | | | | | | | | | |
| 48VDC, 5mA | Module mixing possible | Independent | FA-TH16X100A31 | P.243 | | | | | | | | | |
| | | | FA-TH16X100A31L | P.244 | | | | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | | | | |
| 100VDC, 2.5mA | Module mixing possible | Independent | FA-TH16X200A31L | P.246 | | | | | | | | | |
| | | | FA-TH16X100A31 | P.243 | | | | | | | | | |
| | | | FA-TH16X100A31L | P.244 | | | | | | | | | |
| 100VAC, 8mA | Module mixing possible | Independent | FA-TH16X200A31 | P.245 | | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | | |
| | | | FA-TH16X100A31 | P.243 | | | | | | | | | |
| 200VAC, 7.5mA | Module mixing possible | Independent | FA-TH16X100A31L | P.244 | | | | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | | |
| FX2NC-32EX | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | | FA-FXCBL**MM2H | P.179 | | | |
| | | | | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | | | Independent | FA1-TH8X2SC20S1E | P.236 |
| | | | | | | | | | | | | FA1-TH4X24RA1L20S1E | P.230 |
| | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | | |
| | | | FA1-TH8X24RA1H20S1E | | | | P.232 | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | | | | | | FA-TH16XRA20S | P.238 | | | | | |
| | | | | | | | FA-TH16X24D31 | P.239 | | | | | |
| | | | | 24VDC, 10mA | Module mixing possible | Independent | FA-TH16X24D31L | P.240 | | | | | |
| | | | | | | | FA-TH16X48D31L | P.241 | | | | | |
| FA-TH16X100D31L | P.242 | | | | | | | | | | | | |
| 48VDC, 5mA | Module mixing possible | Independent | FA-TH16X100A31 | P.243 | | | | | | | | | |
| | | | FA-TH16X100A31L | P.244 | | | | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | | | | |
| 100VDC, 2.5mA | Module mixing possible | Independent | FA-TH16X200A31L | P.246 | | | | | | | | | |
| | | | FA-TH16X100A31 | P.243 | | | | | | | | | |
| | | | FA-TH16X100A31L | P.244 | | | | | | | | | |
| 100VAC, 8mA | Module mixing possible | Independent | FA-TH16X200A31 | P.245 | | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | | |
| | | | FA-TH16X100A31 | P.243 | | | | | | | | | |
| 200VAC, 7.5mA | Module mixing possible | Independent | FA-TH16X100A31L | P.244 | | | | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | | |
| FX2NC-16EX-DS FX2NC-32EX-DS | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | | FA-FXCBL**MMH20 FA2-CB1LT**MM1H20 FA-CBL**MMH20 (for distributed installation) | P.175 P.177 P.174 | | | |
| | | | | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | | | Independent | FA1-TH8X2SC20S1E | P.236 |
| | | | | | | | | | | | | FA1-TH4X24RA1L20S1E | P.230 |
| | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | | |
| | | | FA1-TH8X24RA1H20S1E | | | | P.232 | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | | | | | | FA-TH16XRA20S | P.238 | | | | | |
| | | | | | | | FA-TH16X24D31 | P.239 | | | | | |
| | | | | 24VDC, 10mA | Module mixing possible | Independent | FA-TH16X24D31L | P.240 | | | | | |
| | | | | | | | FA-TH16X48D31L | P.241 | | | | | |
| FA-TH16X100D31L | P.242 | | | | | | | | | | | | |
| 48VDC, 5mA | Module mixing possible | Independent | FA-TH16X100A31 | P.243 | | | | | | | | | |
| | | | FA-TH16X100A31L | P.244 | | | | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | | | | |
| 100VDC, 2.5mA | Module mixing possible | Independent | FA-TH16X200A31L | P.246 | | | | | | | | | |
| | | | FA-TH16X100A31 | P.243 | | | | | | | | | |
| | | | FA-TH16X100A31L | P.244 | | | | | | | | | |
| 100VAC, 8mA | Module mixing possible | Independent | FA-TH16X200A31 | P.245 | | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | | |
| | | | FA-TH16X100A31 | P.243 | | | | | | | | | |
| 200VAC, 7.5mA | Module mixing possible | Independent | FA-TH16X100A31L | P.244 | | | | | | | | | |
| | | | FA-TH16X200A31 | P.245 | | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | | |
| FX2NC-16EYT | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | | FA-FXCBL**MMH20 FA-CBL**MMH20 (for distributed installation) | P.175 P.174 | | | |
| | | | | | | | N/O contact relay | Module mixing possible | | | Independent | FA1-TH8Y2SC20S1E | P.250 |
| | | | | | | | | | | | | FA1-TH16Y2SC20S1E | P.259 |
| | | | | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 | P.259 | | | | | | | | |
| | | | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | |
| | | | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | | |
| | | | FA1-TH16Y1TR20S1E | | | | P.258 | | | | | | |
| | | | Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16Y1SR20S1E | P.256 | | | | | | |
| | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | | | |
| | | | | | | FA-FXTH16YRA20 | P.282 | | | | | | |
| | | | Screw | N/O contact relay | Module replaceable | 1-wire type | FA-FXTH16YRA11S | P.281 | | | | | |
| | | | | | | | Module mixing possible | Independent | FA-FXTH16YRA20S | P.280 | | | |
| FA-FXTH16YRA20S | P.280 | | | | | | | | | | | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | |
|----------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------|------------------------|--------------------------|--------------------------|------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------|
| FX2NC-32EYT | Sink output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB32Y | P.142 | | | FA-FXCBL**MM2H | P.179 |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | | P.248 | FA-FXCBL**MMH20 FA-CBL**MMH20 (for distributed installation) | P.175 P.174 | |
| | | | | | | Mountable module ▶ P.284 | | | | | |
| | | | | | | FA1-TH8Y2SC20S1E | | P.250 | | | |
| | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | FA1-TH16Y2SC20S1E | | P.259 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | | |
| | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | | P.254 | | | | |
| | | | | | FA1-TH16Y1SR20S1E | | P.256 | | | | |
| | | | | | FA1-TH16Y1TR20S1E | | P.258 | | | | |
| Screw | N/O contact relay | Module replaceable | Independent | FA-FXTH16YRA20 | | P.282 | | | | | |
| | | | | FA-FXTH16YRA11S | | P.281 | | | | | |
| | | | | FA-FXTH16YRA20S | | P.280 | | | | | |
| FX3GC-32MT/DSS FX3UC-16MT/DSS FX3UC-32MT/DSS | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | |
| | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | | P.236 | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 |
| | | | | | | | Mountable module ▶ P.283 | | | | |
| | | | | | | | FA1-TH8X2SC20S1E | | P.236 | | |
| | | | | Mountable module ▶ P.283 | | | | | | | |
| | | | | FA1-TH4X24RA1L20S1E | | P.230 | | | | | |
| | | | | FA1-TH8X24RA1L20S1E | | P.232 | | | | | |
| | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | | P.234 | | | |
| | | | | | | FA1-TH4X24RA1H20S1E | | P.230 | | | |
| FA1-TH8X24RA1H20S1E | | | | | | P.232 | | | | | |
| Screw | | | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH16X24RA1H20S1E | | P.234 | | | |
| | | | | | | FA-TH16XRA20S | | P.238 | | | |
| | | | | | | 24VDC, 10mA | | 2-wire type | FA-TH16X24D31 | | |
| | | 48VDC, 5mA | | | | 2-wire type | FA-TH16X24D31L | P.240 | | | |
| | | 100VDC, 2.5mA | | | | 2-wire type | FA-TH16X100D31L | P.242 | | | |
| | | 200VAC, 8mA | | | | 2-wire type | FA-TH16X100A31 | P.243 | | | |
| Screw | | 200VAC, 7.5mA | Module mixing possible | Independent | FA-TH16X100A31L | | P.244 | | | | |
| | FA-TH16X200A31 | | | | P.245 | | | | | | |
| | FA-TH16X200A31L | | | | P.246 | | | | | | |
| | FA-TH16X200A31L | | | | P.246 | | | | | | |
| | FA-TH16X200A31L | | | | P.246 | | | | | | |
| | FA-TH16X200A31L | | | | P.246 | | | | | | |
| Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | |
| | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | | P.248 | FA2-CB1L**MM1H20E | P.176 | |
| | | | | | | Mountable module ▶ P.284 | | | | | |
| | | | | | | FA1-TH1E8Y2SC20S1E | | P.250 | | | |
| | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | FA1-TH1E16Y2SC20S1E | | P.253 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | | |
| | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | | P.255 | | | | |
| | | | | | FA1-TH1E16Y1SR20S1E | | P.257 | | | | |
| | | | | | FA1-TH1E16Y1TR20S1E | | P.252 | | | | |
| | | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | | P.266 | | | |
| Module replaceable | | | | | | 1-wire type | FA-THE16YTH11S | P.276 | | | |
| Module mixing possible | | | | | | Independent | FA-THE16YTR20S | P.279 | | | |
| I/O combined | Junction terminal block | Screw | | 1-wire type | FA-FXTB16X16Y | P.143 | FA-FXCBL**MM2H16X16Y | P.181 | | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------|------------------------|------------------------|------------------------------------------------|----------------------------------------------|-------------------|--------------------------------------------------------------------------------------------|------------------------------------------------|----------------------|-------------------------------------------------|-------|
| FX3UC-64MT/DSS FX3UC-96MT/DSS | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | |
| | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 | | | |
| | | | | | | | Module mixing possible | Independent | | | FA1-TH4X24RA1L20S1E | | P.230 |
| | | | | | | | | | | | FA1-TH8X24RA1L20S1E | | P.232 |
| | | | | FA1-TH16X24RA1L20S1E | | P.234 | | | | | | | |
| | | | | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E | | P.230 | | | | | |
| | | | | | | FA1-TH8X24RA1H20S1E | | P.232 | | | | | |
| | | | FA1-TH16X24RA1H20S1E | | | P.234 | | | | | | | |
| | | | Screw | Module mixing possible | Independent | FA-TH16XRA20S | | P.238 | | | | | |
| | | | | | | FA-TH16X24D31 | | P.239 | | | | | |
| | | | | | | FA-TH16X24D31L | | P.240 | | | | | |
| | | | | 2-wire type | FA-TH16X48D31L | | P.241 | | | | | | |
| | | | | | FA-TH16X100D31L | | P.242 | | | | | | |
| | | FA-TH16X100A31 | | | P.243 | | | | | | | | |
| | | 2-wire type | FA-TH16X100A31L | | P.244 | | | | | | | | |
| | | | FA-TH16X200A31 | | P.245 | | | | | | | | |
| | | | FA-TH16X200A31L | | P.246 | | | | | | | | |
| | | | FA-TH16XRA20S | | P.238 | | | | | | | | |
| | | | FA-TH16X24D31 | | P.239 | | | | | | | | |
| | | | FA-TH16X24D31L | | P.240 | | | | | | | | |
| | | 2-wire type | FA-TH16X48D31L | | P.241 | | | | | | | | |
| FA-TH16X100D31L | | | P.242 | | | | | | | | | | |
| FA-TH16X100A31 | | | P.243 | | | | | | | | | | |
| FA-TH16X100A31L | | | P.244 | | | | | | | | | | |
| FA-TH16X200A31 | | | P.245 | | | | | | | | | | |
| FA-TH16X200A31L | | | P.246 | | | | | | | | | | |
| Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | | |
| | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E Mountable module ▶ P.284 | | FA2-CB1L**MM1H20E | P.176 | | | | |
| | | | | | | Module mixing possible | Independent | | | FA1-TH1E8Y2SC20S1E Mountable module ▶ P.284 | | P.250 | |
| | | | | | | | | | | Module mixing possible | Independent | FA1-TH1E16Y2SC20S1E Mountable module ▶ P.284 | |
| | | | FA1-TH1E16Y2RA20S1E | | P.255 | | | | | | | | |
| | | | FA1-TH1E16Y1SR20S1E | | P.257 | | | | | | | | |
| | | | Module mixing possible | Independent | FA1-TH1E16Y1TR20S1E | | P.252 | | | | | | |
| | | Module mixing possible | | | Independent | FA1-TH1E16Y2RA20S | | P.266 | | | | | |
| | | | | | | Module replaceable | 1-wire type | FA-THE16YTH11S | | P.276 | | | |
| | | | Independent | FA-THE16YTR20S | | | | P.279 | | | | | |
| | | FA-FXTB16X16Y | | P.143 | | | | | | | | | |
| I/O combined | | Junction terminal block | | Screw | | 1-wire type | FA-FXCBL**MM2H16X16Y | P.181 | | | | | |
| FX2C-16EX-DS | | Source input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | |
| | Screw | | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | | |
| | Sink input | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | | |
| | | | Screw | | 1-wire type | FA-FXTB16XY | P.140 | | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | | FA2-CB1L**MM1H20E FA2-CB1LT**MM1H20E FA-CBL**MMH20 (for distributed installation) | P.176 P.178 P.174 | | | |
| | | | | | | | Module mixing possible | Independent | | | FA1-TH8X2SC20S1E | | P.236 |
| | | | | | | | | | | | FA1-TH16X24RA1L20S1E | | P.234 |
| | | | | FA1-TH16X24RA1H20S1E | | P.234 | | | | | | | |
| | | | | Module mixing possible | Independent | FA-TH16XRA20S | | P.238 | | | | | |
| | | | | | | FA-TH16X24D31 | | P.239 | | | | | |
| | | | FA-TH16X24D31L | | | P.240 | | | | | | | |
| | | | Screw | 2-wire type | FA-TH16X48D31L | | P.241 | | | | | | |
| | | | | | FA-TH16X100D31L | | P.242 | | | | | | |
| | | | | | FA-TH16X100A31 | | P.243 | | | | | | |
| | | | | 2-wire type | FA-TH16X100A31L | | P.244 | | | | | | |
| | | | | | FA-TH16X200A31 | | P.245 | | | | | | |
| | | FA-TH16X200A31L | | | P.246 | | | | | | | | |

| Programmable controller module model | | Unit type | | | | | Model | | Connection cable | | | |
|--------------------------------------|---------------|--------------------------------------------|--------------------|--------------------------|------------------------|---------------|--------------------------|-----------------|------------------|-------|-------------------|-------|
| FX2NC-16EYT-DSS | Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MMH20 | P.175 | | | |
| | | | Screw | | | FA-FXTB16XY | P.140 | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | | | P.248 | FA2-CB1L**MM1H20E | P.176 |
| | | | | | | | Mountable module ▶ P.284 | | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | | | P.250 | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | | | P.255 | | |
| | | | | | | | FA1-TH1E16Y1SR20S1E | | | P.257 | | |
| | | | | Transistor, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y1TR20S1E | | | P.252 | | |
| | | | | | | | FA1-TH1E16Y2RA20S | | | P.266 | | |
| | | N/O contact relay | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | | | | | |
| | | | | | FA-THE16YTR20S | P.279 | | | | | | |
| FX2NC-32EYT-DSS | Source output | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-FXCBL**MM2H | P.179 | | | |
| | | | Screw | | | FA-FXTB16XY | P.140 | | | | | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | | | P.248 | FA2-CB1L**MM1H20E | P.176 |
| | | | | | | | Mountable module ▶ P.284 | | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | | | P.250 | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | | | P.255 | | |
| | | | | | | | FA1-TH1E16Y1SR20S1E | | | P.257 | | |
| | | | | Transistor, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y1TR20S1E | | | P.252 | | |
| | | | | | | | FA1-TH1E16Y2RA20S | | | P.266 | | |
| | | N/O contact relay | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | | | | | |
| | | | | | FA-THE16YTR20S | P.279 | | | | | | |

MELSEC-F series <Analog I/O modules>

| Programmable controller module type | Programmable controller module model | Unit type | | | Model | | Connection cable | | | |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | Mountable module | | | | | |
| Analog input module | FX3U-4AD | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | FA2-CB2L**AT4XV1E P.302 | | |
| | | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | Voltage input 0 to 5V FA-ATSVM1XV05 P.297 1 to 5V FA-ATSVM1XV15 P.297 -10 to 10V FA-ATSVM1XV1010 P.297 | | | |
| | | | | | | 8-channel installation base unit FA-ATB8XTB P.296 | Current input 4 to 20mA FA-ATSVM1XA420 P.298 Distributor 4 to 20mA FA-ATSVM1XD P.299 RTD input -200 to +650°C FA-ATSVM1XRPT P.300 0 to +100°C FA-ATSVM1XRPT0010 P.300 0 to +200°C FA-ATSVM1XRPT0020 P.300 -200 to +600°C FA-ATSVM1XRJPT P.300 | | | |
| | | | Screw | | | Input to the programmable controller: 4 to 20mA | 8-channel installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKA8XM P.295 | | Thermocouple input +600 to +1700°C FA-ATSVM1XTB P.301 0 to +1600°C FA-ATSVM1XTR P.301 0 to +1600°C FA-ATSVM1XTS P.301 -200 to +1200°C FA-ATSVM1XTK P.301 0 to +400°C FA-ATSVM1XTK0040 P.301 0 to +600°C FA-ATSVM1XTK0060 P.301 0 to +800°C FA-ATSVM1XTK0080 P.301 -200 to +900°C FA-ATSVM1XTE P.301 -40 to +750°C FA-ATSVM1XTJ P.301 -200 to +350°C FA-ATSVM1XTT P.301 -200 to +1250°C FA-ATSVM1XTN P.301 Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | |
| | | | | | | | 4-channel installation base unit FA1-AT1B4X1TE P.292 | | Input modules for analog signal converter | |
| | | | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | | |
| | 8-channel installation base unit FA-ATB8XTB P.296 | | | | | | | | | |
| | 8-channel installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKA8XM P.295 | | | | | | | | | |
| | 8-channel installation base unit FA-ATB8XTB P.296 | | | | | | | | | |
| | 8-channel installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKA8XM P.295 | | | | | | | | | |
| | FX3U-4AD-ADP FX3UC-4AD FX2N-8AD | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | | FA-CBL**ATF P.304 Cable for distributed installation FA1-CB2L**AT4EX P.318 | |
| | | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | | | |
| 8-channel installation base unit FA-ATB8XTB P.296 | | | | | | | | | | |
| Screw | | | Input to the programmable controller: 4 to 20mA | | | 8-channel installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKA8XM P.295 | | | | |
| | | | | | | 4-channel installation base unit FA1-AT1B4X1TE P.292 | | | | |
| | | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | | | |
| 8-channel installation base unit FA-ATB8XTB P.296 | | | | | | | | | | |
| 8-channel installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKA8XM P.295 | | | | | | | | | | |
| 8-channel installation base unit FA-ATB8XTB P.296 | | | | | | | | | | |
| Analog output module | FX3U-4DA FX3U-4DA-ADP | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter (The programmable controller outputs voltage.) | FA-CBL**ATYF P.315 | | |
| | | | | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | Voltage output 0 to 5V FA-ATSAM1YV05 P.311 0 to 10V FA-ATSAM1YV010 P.311 1 to 5V FA-ATSAM1YV15 P.311 -10 to 10V FA-ATSAM1YV1010 P.311 | | | |
| | | | | | | 8-channel installation base unit FA-ATB8YTB P.308 | Current output 0 to 20mA FA-ATSVM1YA020 P.312 4 to 20mA FA-ATSVM1YA420 P.312 Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | | | |
| | | | Screw | | | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | | Output modules for analog signal converter (The programmable controller outputs current.) | |
| | | | | | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | | | Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 |
| | | | | | | | 8-channel installation base unit FA-ATB8YTB P.308 | | | Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 |
| | Spring clamp | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter (The programmable controller outputs voltage.) | | | | | | |
| | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | | Voltage output 0 to 5V FA-ATSVM1YV05 P.311 0 to 10V FA-ATSVM1YV010 P.311 1 to 5V FA-ATSVM1YV15 P.311 -10 to 10V FA-ATSVM1YV1010 P.311 | | | | | |
| | | | 8-channel installation base unit FA-ATB8YTB P.308 | | Current output 0 to 20mA FA-ATSVM1YA020 P.312 4 to 20mA FA-ATSVM1YA420 P.312 Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | | | | | |
| | Screw | | Output from the programmable controller: 4 to 20mA | | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter (The programmable controller outputs current.) | | | | |
| | | | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | | Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 | | | |
| | | | | | 8-channel installation base unit FA-ATB8YTB P.308 | | Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 Pass-through module FA-ATFTMX Y P.316 Dummy module FA-ATNDM5 P.317 | | | |

MELSEC-L series <I/O modules>

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | | | | |
|--------------------------------------|----------------------------|-------------------------|------------------------|--------------------------------------------|----------------------|------------------------|------------------------|---------------------|--------------------------|--------------|-------------|-------|
| LX10 | AC | Junction terminal block | Screw | 1-wire type | FA-TB161AC | P.152 | FA-CBL**D | P.184 | | | | |
| | | | | 2-wire type | FA-TB161ACC2 | P.153 | | | | | | |
| LX28 | AC | Junction terminal block | Screw | 1-wire type | FA-TB18XY | P.152 | FA-CBL**D | P.184 | | | | |
| LX40C6 | Positive common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 | | | | |
| | | | | 1-wire type | FA-TB16XY | P.132 | FA-CBL**YM20 | P.169 | | | | |
| | | | | 1-wire type | FA-TB161AC | P.152 | FA-CBL**D | P.184 | | | | |
| | | | | Screw | 1-row terminal block | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**M20 | P.168 | | |
| | | | | | 3-row terminal block | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**D | P.184 | | |
| | | | | | | 3-wire type | FA-TB16XYPN | P.135 | | | | |
| | | | e-CON | DIN rail installation only | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**M20 | P.168 | | | |
| | | | | | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**YM20 | P.169 | | | |
| | | | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | |
| | | | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-CBL**M20 | P.168 |
| | | | | | | | | | Mountable module ▶ P.283 | | | |
| | | | | | | Module mixing possible | Independent | FA1-TH8X24RA1L20S1E | P.230 | FA-CBL**YM20 | | |
| | | FA1-TH8X24RA1L20S1E | P.232 | | | | | FA-CBL**MMH20 | P.174 | | | |
| | | FA1-TH16X24RA1L20S1E | P.234 | | | | | | | | | |
| | | FA1-TH4X24RA1H20S1E | P.230 | | | | | | | | | |
| | | Screw | Module mixing possible | | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | | |
| | | | | | | FA1-TH8X24RA1H20S1E | P.232 | | | | | |
| | | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | | | | | FA1-TH16XRA20S | P.238 | | | | | |
| | | | | | | 2-wire type | FA-TH16X24D31 | P.239 | | | | |
| | | | | | | 2-wire type | FA-TH16X48D31L | P.240 | | | | |
| | | Screw | Module mixing possible | Independent | 2-wire type | FA-TH16X48D31L | P.241 | FA-CBL**M20 | P.168 | | | |
| | | | | | 2-wire type | FA-TH16X100D31L | P.242 | FA-CBL**YM20 | P.169 | | | |
| | | | | | 2-wire type | FA-TH16X100A31 | P.243 | | | | | |
| | | | | | 2-wire type | FA-TH16X100A31L | P.244 | | | | | |
| | | | | | 2-wire type | FA-TH16X200A31 | P.245 | | | | | |
| | | | | | 2-wire type | FA-TH16X200A31L | P.246 | | | | | |
| | | LX41C4 LX42C4 | Positive common | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 | P.168 | | |
| 1-wire type | FA-TB16XY | | | | | P.132 | FA-CBL**YM20 | P.169 | | | | |
| 1-wire type | FA-TB161AC | | | | | P.152 | FA-CBL**D | P.184 | | | | |
| Screw | 1-row terminal block | | | | | 2-wire type | FA-TB1L16XYP | P.134 | FA-CBL**M20 | P.168 | | |
| | 3-row terminal block | | | | | 2-wire type | FA-TB161ACC2 | P.153 | FA-CBL**YM20 | P.169 | | |
| | | | | | | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**D | P.184 | | |
| e-CON | DIN rail installation only | | | | 3-wire type | FA-TB16XYPN3 | P.136 | FA-CBL**M20 | P.168 | | | |
| | | | | | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**YM20 | P.169 | | | |
| | | | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | |
| | Junction terminal block | | | | Screw | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FMV | P.161 | |
| | | | | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | |
| | | | | | | | 1-wire type | FA-TB32XY | P.132 | | | |
| FA-TBS32XY | | P.133 | | | | | | | | | | |
| FA-TB1L32XY | | P.133 | | | | | | | | | | |
| 2-wire type | | FA-TB32XYL | P.134 | | | | | | | | | |
| | | FA-TB32XYN3 | P.135 | | | | | | | | | |
| | | 3-wire type | FA-TB8XY1 | P.138 | | | | | | | | |
| | | | FA-TB8XY2 | P.138 | | | | | | | | |
| | | | FA-TB8XY3 | P.138 | | | | | | | | |
| | | 3-wire type | FA-TB8XY4 | P.138 | | | | | | | | |
| 2-wire type | | | FA-TB16XY1N | P.137 | | | | | | | | |
| | | | FA-TB16XY2N | P.137 | | | | | | | | |
| | | | FA-TB16XY1 | P.139 | | | | | | | | |
| 3-wire type | | | FA-TB16XY2 | P.139 | | | | | | | | |
| | | | One-touch connector | 3-wire type | FA-CB8XY1 | P.146 | FA-CBL**FMV | P.161 | | | | |
| | | FA-CB8XY2 | | | P.146 | | | | | | | |
| | | FA-CB8XY3 | | | P.146 | | | | | | | |
| | 3-wire type | FA-CB8XY4 | | P.146 | | | | | | | | |
| | | FA-CB16XY1 | | P.147 | | | | | | | | |
| FA-CB16XY2 | | P.147 | | | | | | | | | | |
| e-CON | 3-wire type | FA-LEB32XY | P.150 | FA-CBL**FMV | P.161 | | | | | | | |
| | | FA-LEB32XY-3 | P.150 | | | | | | | | | |
| | | FA-LEB32XY-3A | P.150 | | | | | | | | | |
| | Junction terminal block | Spring clamp | 1-wire type | | | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V | P.162 | | | |
| | | | 1-wire type | | | FA-TB16XY | P.132 | FA-CBL**FM2LV | P.163 | | | |
| | | | 2-wire type | | | FA-TB1L16XYN | P.134 | FA-CBL**FM2LV | P.163 | | | |
| Screw | | 3-wire type | FA-TB16XYPN | P.135 | | | | | | | | |
| | | | FA-TB16XYPN3 | P.136 | FA-CBL**FM2V | P.162 | | | | | | |
| | | 3-wire type | FA-LEB16XY | P.149 | FA-CBL**FM2LV | P.163 | | | | | | |
| e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | | | | | |
|---------------------------------------------------------------------|-------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------|-----------------------------|------------------|----------------------------------------------------------------------------------|-------------------------|---------------|--------------------------|-------|-----------------------------|----------------|-------|
| LX41C4 LX42C4 | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for distributed installation) | P.162 P.163 P.174 | | | | | | |
| | | | | | | | Mountable module ▶ P.283 | | | | | | | | | |
| | | | | FA1-TH8X2SC20S1E | | P.236 | Mountable module ▶ P.283 | | | | | | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | | | | | | | | |
| | | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | | | | |
| | | | | | | | FA1-TH16X24RA1L20S1E | P.234 | | | | | | | | |
| | | | FA1-TH4X24RA1H20S1E | | | | P.230 | | | | | | | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | | | | | | |
| | | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module replaceable | Independent | FA-TH16XRA20S | P.238 | | | | | | | | |
| | | | | | | | 24VDC, 10mA | 2-wire type | | | FA-TH16X24D31 | P.239 | | | | |
| | | | | 48VDC, 5mA | 2-wire type | FA-TH16X48D31L | P.241 | | | | | | | | | |
| | | | | | | FA-TH16X100D31L | P.242 | | | | | | | | | |
| | | | | 100VAC, 2.5mA | 2-wire type | FA-TH16X100A31 | P.243 | | | | | | | | | |
| | FA-TH16X100A31L | P.244 | | | | | | | | | | | | | | |
| | 100VAC, 8mA | 2-wire type | FA-TH16X200A31 | P.245 | | | | | | | | | | | | |
| | | | FA-TH16X200A31L | P.246 | | | | | | | | | | | | |
| | Negative common | Junction terminal block | Screw | Spring clamp | 1-wire type | FA1-TE1S32XY | P.126 | FA-CBL**FMVE | P.164 | | | | | | | |
| | | | | | | FA1-TE1S32XY | P.127 | | | | | | | | | |
| | | | | Small-size terminal block | 1-wire type | FA-TB32XY | P.132 | | | | | | | | | |
| | | | | | | FA-TBS32XY | P.133 | | | | | | | | | |
| | | | | | | FA-TB1L32XY | P.133 | | | | | | | | | |
| | | | | | | FA-TB32XYH | P.134 | | | | | | | | | |
| | | | | LED | 1-wire type | FA-TB32XYP3 | P.135 | | | | | | | | | |
| | | | | | | FA-TB32XYP3 | P.135 | | | | | | | | | |
| | | | | 3-row terminal block | 2-wire type | FA-TB8XY1 | P.138 | | | | | | | | | |
| | | | | | | FA-TB8XY2 | P.138 | | | | | | | | | |
| | | | | | | FA-TB8XY3 | P.138 | | | | | | | | | |
| FA-TB8XY4 | | | | | | P.138 | | | | | | | | | | |
| Distributed 8-point (0 to 7) | | | | 3-wire type | FA-TB16XY1 | P.139 | | | | | | | | | | |
| | | | | | FA-TB16XY2 | P.139 | | | | | | | | | | |
| Distributed 8-point (8 to F) | | 3-wire type | FA-CB8XY1 | P.146 | | | | | | | | | | | | |
| | | | FA-CB8XY2 | P.146 | | | | | | | | | | | | |
| Distributed 8-point (10 to 17) | | 3-wire type | FA-CB8XY3 | P.146 | | | | | | | | | | | | |
| | | | FA-CB8XY4 | P.146 | | | | | | | | | | | | |
| Distributed 8-point (18 to 1F) | | 3-wire type | FA-CB16XY1 | P.147 | | | | | | | | | | | | |
| | | | FA-CB16XY2 | P.147 | | | | | | | | | | | | |
| One-touch connector | | Distributed 8-point (0 to 7) | 3-wire type | FA-LEB32XY | P.150 | | | | | | | | | | | |
| | | | | FA-LEB32XY-3 | P.150 | | | | | | | | | | | |
| | | Distributed 8-point (8 to F) | 3-wire type | FA-LEB32XY-3A | P.150 | | | | | | | | | | | |
| | | | | FA-TBS40P | P.144 | | | | | | | | | | | |
| | | Distributed 8-point (10 to 17) | 3-wire type | FA-CBL**FMV-M | P.187 | | | | | | | | | | | |
| | | | | FA-CBL**FMV | P.158 | | | | | | | | | | | |
| Distributed 8-point (18 to 1F) | | 3-wire type | FA-BCBL**FFBL | P.159 | | | | | | | | | | | | |
| | | | FA-BCBL**FFBLR | P.159 | | | | | | | | | | | | |
| e-CON | 3-wire type | FA-CBL**FMV-M | P.187 | | | | | | | | | | | | | |
| | | FA-CBL**FMV | P.158 | | | | | | | | | | | | | |
| Common | Junction terminal block | Discrete cable | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | | | | | | | | |
| | | | | FA-CBL**FMV | P.158 | | | | | | | | | | | |
| Spring clamp terminal block conversion module (only for the LX41C4) | | | | | | FA1-TE40PA | P.131 | FA-CBL**FV | P.158 | | | | | | | |
| LY10R2 | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TB161AC | P.152 | FA-CBL**D | P.184 | | | | | | | | |
| | | | | | FA-TB161ACC2 | P.153 | | | | | | | | | | |
| LY18R2A LY28S1A | Junction terminal block | Screw | Small-size terminal block | 2-wire type | FA-TB18XY | P.152 | FA-CBL**D | P.184 | | | | | | | | |
| | | | | | FA-TB161ACC2 | P.153 | | | | | | | | | | |
| LY20S6 | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TB161AC | P.152 | FA-CBL**D | P.184 | | | | | | | | |
| | | | | | FA-TB161ACC2 | P.153 | | | | | | | | | | |
| LY40NT5P | Junction terminal block | Screw | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | | | | | | | | |
| | | | | | FA1-TB16XY | P.132 | | | | | | | | | | |
| | | | | | FA-TB161AC | P.152 | | | | | | | | | | |
| | | | | | 1-row terminal block | 2-wire type | | | FA-TB116XYP | P.134 | | | | | | |
| | | | | | | | | | FA-TB161ACC1 | P.153 | | | | | | |
| | | | | | 3-row terminal block | 3-wire type | | | FA-TB16XYPN | P.135 | | | | | | |
| | | | | | | | | | FA-TB16XYPN3 | P.136 | | | | | | |
| | | | | | e-CON | 3-wire type | | | FA-LEB16XY | P.149 | | | | | | |
| | | | | | | | | | FA-LEB16XY-D | P.149 | | | | | | |
| | | | | | Digital signal converter (terminal module) | Spring clamp | | | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | |
| | | | | | | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | | | | | | | | | | FA1-TH8Y2SC20S1E | | | | P.250 |
| | | | | | | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | | | | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | |
| Mountable module ▶ P.284 | | | | | | | | | | | | | | | | |
| Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | | | | | | | | |
| | | | FA1-TH16Y1SR20S1E | P.256 | | | | | | | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16Y1TR20S1E | P.258 | | | | | | | | | | | | |
| | | | FA1-TH16Y1TR20S1E | P.258 | | | | | | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | | | | | | | | | | |
|--------------------------------------|--------------------------------------------|---------------------------------|-------------------------|------------------------|------------------------|--------------------------------|--------------------------|-----------------------------|-----------------------------|----------------|------------------------|---------------------|---------------------------|-------------|---------------|-------|-------------|-------|
| LY40NT5P | Digital signal converter (terminal module) | Screw | N/O contact relay | Module replaceable | 1-wire type | FA-TH16YRA11 | P.260 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | | | | | | | | | |
| | | | | Module replaceable | 2-wire type | FA-TH16YRA21 | P.261 | | | | | | | | | | | |
| | | | | Module replaceable | Independent | FA-TH16YRA20 | P.262 | | | | | | | | | | | |
| | | | | Module mixing possible | 1-wire type | FA-TH16YRA11S | P.263 | | | | | | | | | | | |
| | | | | Module mixing possible | 2-wire type | FA-TH16YRA21S | P.264 | | | | | | | | | | | |
| | | | | Module mixing possible | Independent | FA-TH16YRA20S | P.265 | | | | | | | | | | | |
| | | | N/C contact relay | Module mixing possible | Independent | FA-TH16YRAB20SL | P.267 | | | | | | | | | | | |
| | | | | Module mixing possible | Independent | FA-TH16YRAB20SL | P.268 | | | | | | | | | | | |
| | | | C/O contact relay | Module replaceable | Independent | FA-TH16YRAC20S | P.269 | | | | | | | | | | | |
| | | | | Module replaceable | 1-wire type | FA-TH16YSR11S | P.270 | | | | | | | | | | | |
| | | | Triac, 1.0A | Module replaceable | 2-wire type | FA-TH16YSR21S | P.271 | | | | | | | | | | | |
| | | | | Module mixing possible | Independent | FA-TH16YSR20S | P.272 | | | | | | | | | | | |
| | | | Transistor, 1.0A (sink) | Module replaceable | 1-wire type | FA-TH16YTL11S | P.273 | | | | | | | | | | | |
| | | | | Module replaceable | 2-wire type | FA-TH16YTL21S | P.274 | | | | | | | | | | | |
| Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-TH16YTH11S | P.275 | | | | | | | | | | | | | | |
| | Module mixing possible | Independent | FA-TH16YTR20S | P.277 | | | | | | | | | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA-TH16YTR20S | P.277 | | | | | | | | | | | | | | |
| | Module mixing possible | Independent | FA-TH16Y2TR20 | P.278 | | | | | | | | | | | | | | |
| LY40PT5P | Digital signal converter (terminal module) | Screw | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | | | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | | | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | | | | | |
| | | | | | | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | | | | | |
| | | | | | | | N/O contact relay | Independent | | | FA1-TH1E16Y2RA20S1E | P.255 | | | | | | |
| | | | | | | | Triac, 1.0A | Module mixing possible | | | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | |
| | | | | | | | Transistor, 1.0A | Independent | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | | |
| | | | | | | | Screw | N/O contact relay | | | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | |
| | | | | | | | | Transistor, 1.0A (source) | | | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | | | |
| | | | | | | | | Transistor, 1.0A | | | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | | | |
| | | | | | | | LY41NT1P LY42NT1P | Junction terminal block | | | Screw | Spring clamp | Small-size terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FMV | P.161 |
| | | | | | | | | | | | | | | | FA1-TE1SV16XY | P.130 | | |
| FA-TB32XY | P.132 | | | | | | | | | | | | | | | | | |
| FA-TBS32XY | P.133 | | | | | | | | | | | | | | | | | |
| FA-TB1L32XY | P.133 | | | | | | | | | | | | | | | | | |
| LED | 1-wire type | FA-TB32XYL | P.134 | | | | | | | | | | | | | | | |
| 3-row terminal block | 2-wire type | FA-TB32XYP3 | P.135 | | | | | | | | | | | | | | | |
| Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY1 | P.138 | | | | | | | | | | | | | | | |
| | | FA-TB8XY2 | P.138 | | | | | | | | | | | | | | | |
| | | FA-TB8XY3 | P.138 | | | | | | | | | | | | | | | |
| | | FA-TB8XY4 | P.138 | | | | | | | | | | | | | | | |
| Distributed 8-point (8 to F) | 3-wire type | FA-TB16XY1 | P.139 | | | | | | | | | | | | | | | |
| | | FA-TB16XY2 | P.139 | | | | | | | | | | | | | | | |
| Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY1 | P.146 | | | | | | | | | | | | | | | |
| | | FA-CB8XY2 | P.146 | | | | | | | | | | | | | | | |
| Distributed 8-point (18 to 1F) | 3-wire type | FA-CB8XY3 | P.146 | | | | | | | | | | | | | | | |
| | | FA-CB8XY4 | P.146 | | | | | | | | | | | | | | | |
| Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | P.147 | | | | | | | | | | | | | | | |
| | | FA-CB16XY2 | P.147 | | | | | | | | | | | | | | | |
| Distributed 16-point (10 to 1F) | 3-wire type | FA-LEB32XY | P.150 | | | | | | | | | | | | | | | |
| | | FA-LEB32XY-3 | P.150 | | | | | | | | | | | | | | | |
| e-CON | 3-wire type | FA-LEB32XY-3A | P.150 | | | | | | | | | | | | | | | |
| | | FA-LEB32XY-3A | P.150 | | | | | | | | | | | | | | | |
| Junction terminal block | Screw | Spring clamp | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V | P.162 | | | | | | | | | | | |
| | | | | FA-TB16XY | P.132 | FA-CBL**FM2LV | P.163 | | | | | | | | | | | |
| | | | | FA-TB1L16XYP | P.134 | FA-CBL**FM2LV | P.163 | | | | | | | | | | | |
| | | | | FA-TB16XYPN | P.135 | | | | | | | | | | | | | |
| | | | | FA-TB16XYPN3 | P.136 | FA-CBL**FM2V | P.162 | | | | | | | | | | | |
| | | | | FA-LEB16XY | P.149 | FA-CBL**FM2LV | P.163 | | | | | | | | | | | |
| | | | | FA-LEB16XY-D | P.149 | | | | | | | | | | | | | |
| | | | | One-touch connector | 3-wire type | Distributed 8-point (0 to 7) | FA-CB8XY1 | P.146 | | | | | | | | | | |
| | | | | | | Distributed 8-point (8 to F) | FA-CB8XY2 | P.146 | | | | | | | | | | |
| | | | | | | Distributed 8-point (10 to 17) | FA-CB8XY3 | P.146 | | | | | | | | | | |
| Distributed 8-point (18 to 1F) | FA-CB8XY4 | P.146 | | | | | | | | | | | | | | | | |
| Distributed 16-point (0 to F) | 3-wire type | Distributed 16-point (0 to F) | FA-CB16XY1 | P.147 | | | | | | | | | | | | | | |
| | | Distributed 16-point (10 to 1F) | FA-CB16XY2 | P.147 | | | | | | | | | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | | Model | Connection cable | | | | | |
|-----------------------------------------------------------------------|--------------------------------------------|--------------------------------|------------------------|------------------------|-------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------|-------------------------|-------|
| LY41NT1P LY42NT1P | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | P.248 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for distributed installation) | P.162 P.163 P.174 | | |
| | | | | | | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 | P.250 | | | | |
| | | | | | | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 | P.259 | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | |
| | | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | |
| | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | |
| | | Screw | N/O contact relay | Module replaceable | Independent | 1-wire type | FA-TH16YRA11 | | | P.260 | |
| | | | | | | 2-wire type | FA-TH16YRA21 | | | P.261 | |
| | | | | | | Independent | FA-TH16YRA20 | | | P.262 | |
| | | | N/C contact relay | Module mixing possible | Independent | 1-wire type | FA-TH16YRA11S | | | P.263 | |
| | | | | | | 2-wire type | FA-TH16YRA21S | | | P.264 | |
| | | | | | | Independent | FA-TH16YRA20S | | | P.265 | |
| | C/O contact relay | Module replaceable | Independent | Independent | FA-TH16YRA20SL | P.267 | | | | | |
| | | | | | FA-TH16YRAB20SL | P.268 | | | | | |
| | | | | | FA-TH16YRAC20S | P.269 | | | | | |
| | | Triac, 1.0A | Module replaceable | Independent | Independent | 1-wire type | FA-TH16YSR11S | P.270 | | | |
| | | | | | | 2-wire type | FA-TH16YSR21S | P.271 | | | |
| | | | | | | Independent | FA-TH16YSR20S | P.272 | | | |
| | Transistor, 1.0A (sink) | Module replaceable | Independent | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | | | |
| | | | | | 2-wire type | FA-TH16YTL21S | P.274 | | | | |
| | Transistor, 1.0A (source) | Module replaceable | Independent | Independent | 1-wire type | FA-TH16YTH11S | P.275 | | | | |
| | | | | | 2-wire type | FA-TH16YTR20S | P.277 | | | | |
| | Transistor, 1.0A | Module mixing possible | Independent | Independent | FA-TH16YTR20S | P.277 | | | | | |
| FA-TH16Y2TR20 | | | | | P.278 | | | | | | |
| Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMV-M | P.187 | | | | |
| Discrete cable | | | | | | FA-CBL**FV FA-BCBL**FFBL FA-BCBL**FFBL FA-BCBL**FFBLR | P.158 P.159 P.159 P.159 | | | | |
| Spring clamp terminal block conversion module (only for the LY41NT1P) | | | | | FA1-TE40PA | P.131 | | | | | |
| LY41PT1P LY42PT1P | Junction terminal block | Spring clamp | | | | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**FMV | P.161 | |
| | | | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | |
| | | | | | | | FA-TB32XY | P.132 | | | |
| | | | | | | Small-size terminal block | 1-wire type | FA-TBS32XY | | | P.133 |
| | | | | | | | | FA-TB1L32XY | | | P.133 |
| | | | | | | LED | 1-wire type | FA-TB32XYH | | | P.134 |
| | | 3-row terminal block | 2-wire type | FA-TB32XYN3 | P.135 | | | | | | |
| | | | | FA-TB8XY1 | P.138 | | | | | | |
| | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY2 | P.138 | | | | | | |
| | | | | FA-TB8XY3 | P.138 | | | | | | |
| | | | | FA-TB8XY4 | P.138 | | | | | | |
| | | Distributed 8-point (10 to 17) | 2-wire type | FA-TB16XY1N | P.137 | | | | | | |
| | | | | FA-TB16XY2N | P.137 | | | | | | |
| | | Distributed 8-point (18 to 1F) | 3-wire type | FA-TB16XY1 | P.139 | | | | | | |
| | | | | FA-TB16XY2 | P.139 | | | | | | |
| | | Distributed 16-point (0 to 7) | 3-wire type | FA-CB8XY1 | P.146 | | | | | | |
| | | | | FA-CB8XY2 | P.146 | | | | | | |
| | | | | FA-CB8XY3 | P.146 | | | | | | |
| | FA-CB8XY4 | | | P.146 | | | | | | | |
| | FA-CB16XY1 | | | P.147 | | | | | | | |
| | Distributed 16-point (10 to 1F) | 3-wire type | FA-CB16XY2 | P.147 | | | | | | | |
| | | | FA-LEB32XY | P.150 | | | | | | | |
| | Distributed 8-point (8 to F) | 3-wire type | FA-LEB32XY-3 | P.150 | | | | | | | |
| FA-LEB32XY-3A | | | P.150 | | | | | | | | |
| FA-CB8XY1 | | | P.146 | | | | | | | | |
| Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY2 | P.146 | | | | | | | | |
| | | FA-CB8XY3 | P.146 | | | | | | | | |
| Distributed 8-point (18 to 1F) | 3-wire type | FA-CB8XY4 | P.146 | | | | | | | | |
| | | FA-CB16XY1 | P.147 | | | | | | | | |
| Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY2 | P.147 | | | | | | | | |
| | | FA-LEB32XY | P.150 | | | | | | | | |
| Distributed 16-point (10 to 1F) | 3-wire type | FA-LEB32XY-3 | P.150 | | | | | | | | |
| | | FA-LEB32XY-3A | P.150 | | | | | | | | |
| Junction terminal block | Spring clamp | | | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**FM2LV | P.162 P.163 P.163 | |
| | | | | | | 1-wire type | FA-TB16XY | P.132 | | | |
| | | | | | | 2-wire type | FA-TB1L16XYN | P.134 | | | |
| | Screw | 1-row terminal block | 2-wire type | FA-TB16XYPN | P.135 | | | | | | |
| | | | | FA-TB16XYPN3 | P.136 | | | | | | |
| | 3-row terminal block | 3-wire type | FA-LEB16XY | P.149 | | | | | | | |
| FA-LEB16XY-D | | | P.149 | | | | | | | | |
| e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY | P.149 | | | | | | | |
| | | | FA-LEB16XY-D | P.149 | | | | | | | |
| Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E Mountable module ▶ P.284 | P.248 | FA-CBL**FM2V FA-CBL**FM2LV FA-CBL**MMH20 (for distributed installation) | P.162 P.163 P.174 | | | |
| | | | | | FA1-TH1E8Y2SC20S1E Mountable module ▶ P.284 | P.250 | | | | | |
| | | | | | FA1-TH1E16Y2SC20S1E Mountable module ▶ P.284 | P.253 | | | | | |
| | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | |
| | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | | | |
| | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | |
| | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | |
| | | | | | Transistor, 1.0A (source) | Module replaceable | | | 1-wire type | FA-THE16YTH11S | P.276 |
| | | | | | | | | | | FA-THE16YTR20S | P.279 |
| | Transistor, 1.0A | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | | | | | |

*: For the restrictions, refer to the precautions described in the corresponding manual.

| Programmable controller module model | Unit type | | | | Model | Connection cable |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------|-------------|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| LY41PT1P LY42PT1P | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P P.144 | FA-CBL**FMV-M P.187 |
| | Discrete cable | | | | | FA-CBL**FV P.158 FA-BCBL**FFBL P.159 FA-BCBL**FFBLY P.159 FA-BCBL**FFBLR P.159 |
| | Spring clamp terminal block conversion module (only for the LY41NT1P) | | | | FA1-TE40PA P.131 | |
| LH42C4NT1P | For the input side, refer to the specifications of the LX41C4. For the output side, refer to the specifications of the LY41NT1P. | | | | | |
| LH42C4PT1P | For the input side, refer to the specifications of the LX41C4. For the output side, refer to the specifications of the LY41PT1P. | | | | | |
| L02SCPU L02SCPU-P L02CPU L02CPU-P L06CPU L06CPU-P L26CPU L26CPU-P L26CPU-BT L26CPU-PBT | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P P.144 | FA-CBL**FMV-M P.187 |
| | Junction terminal block | Screw | Conversion of positioning pulse output to differential driver output | | FA-PT1LBD P.206 | FA-SCBL10FM2LV-LB P.217 |
| | Junction terminal block | Screw | | | FA-LTB20P P.145 | FA-SCBL10FM2LV-LB P.217 |

*: For the restrictions, refer to the precautions described in the corresponding manual.

MELSEC-L series <Analog modules>

| Programmable controller module type | Programmable controller module model | Unit type | | | | Model | | Connection cable |
|-------------------------------------|--------------------------------------|-------------------------|------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------|
| | | | | | | Mountable module | | |
| Analog input module | L60ADVL8 | Analog signal converter | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | | FA-CBL**ATF P.304 Cable for distributed installation FA1-CB2L**AT4EX P.318 |
| | | | | | | Voltage input 0 to 5V FA-ATSV1XV05 P.297 1 to 5V FA-ATSV1XV15 P.297 -10 to 10V FA-ATSV1XV1010 P.297 Current input 4 to 20mA FA-ATSV1XA420 P.298 Distributor 4 to 20mA FA-ATSV1XD P.299 RTD input -200 to +650°C FA-ATSV1XRPT P.300 0 to +100°C FA-ATSV1XRPT0010 P.300 0 to +200°C FA-ATSV1XRPT0020 P.300 -200 to +600°C FA-ATSV1XRJPT P.300 Thermocouple input +600 to +1700°C FA-ATSV1XTB P.301 0 to +1600°C FA-ATSV1XTR P.301 0 to +1600°C FA-ATSV1XTS P.301 -200 to +1200°C FA-ATSV1XTK P.301 0 to +400°C FA-ATSV1XTK0040 P.301 0 to +600°C FA-ATSV1XTK0060 P.301 0 to +800°C FA-ATSV1XTK0080 P.301 -200 to +900°C FA-ATSV1XTE P.301 -40 to +750°C FA-ATSV1XTJ P.301 -200 to +350°C FA-ATSV1XTT P.301 -200 to +1250°C FA-ATSV1XTN P.301 Pass-through module FA-ATFTMX P.316 Dummy module FA-ATNDM5 P.317 | | |
| | L60ADIL8 | Analog signal converter | Module selectable type | Input to the programmable controller: 4 to 20mA | Installation base unit FA-ATKB8XTB P.294 + Adapter FA-ATKAA8XM P.295 | Input modules for analog signal converter | | FA-CBL**ATF P.304 |
| Analog output module | L60DA4 | Analog signal converter | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter (The programmable controller outputs voltage.) | | FA-CBL**ATYF P.315 Cable for distributed installation FA1-CB2L**AT4EX P.318 |
| | | | | | | Voltage output 0 to 5V FA-ATSAM1YV05 P.311 0 to 10V FA-ATSAM1YV010 P.311 1 to 5V FA-ATSAM1YV15 P.311 -10 to 10V FA-ATSAM1YV1010 P.311 Current output 0 to 20mA FA-ATSV1YA020 P.312 4 to 20mA FA-ATSV1YA420 P.312 Pass-through module FA-ATFTMX P.316 Dummy module FA-ATNDM5 P.317 | | |
| | | | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter (The programmable controller outputs current.) | | FA-CBL**ATYF P.315 Cable for distributed installation FA1-CB2L**AT4EX P.318 |
| | | | | | | Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 Pass-through module FA-ATFTMX P.316 Dummy module FA-ATNDM5 P.317 | | |

| Programmable controller module type | Programmable controller module model | Unit type | | | | Model | | | Connection cable |
|-------------------------------------|--------------------------------------|-------------------------|--------------|------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------|
| | | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | Mountable module | | | |
| Analog output module | L60DAVL8 | | | | | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V |
| | | P.306 | | | | | | | |
| | L60DAIL8 | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TB | Output modules for analog signal converter (The programmable controller outputs current.) | FA-CBL**ATYF | P.315 |
| | | | | | | P.306 | | | |
| | | | | | | | | | |
| | | | | | | | | | |

MELSEC-L series <Positioning modules>

| Programmable controller module type | Programmable controller module model | Servo amplifier or other devices | Type | | Conversion module or cable model | | Cable between conversion module and servo amplifier | | Cable between positioning modules | |
|----------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|----------------------|----------------------------------|-----------------|-----------------------------------------------------|-------|-----------------------------------|-------|
| | | | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| Positioning module (Differential driver output system) | LD75D1 | MR-J5-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | MR-J4-A series | Cable with connectors | | FA-CBLQ75M2J3-1 | P.207 | | | | |
| | | MR-J3-A series | Cable with connectors | | FA-CBLQ75M2J2-1 | P.209 | | | | |
| | | MR-J2-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | MR-J2S-A series | Cable with connectors | | FA-CBLQ75G2-1 | P.213 | | | | |
| | | For general-purpose stepping motors and servo amplifiers | General-purpose discrete cable | | With pulse generator | FA-CBLQ75G2-1P | P.213 | | | |
| | | | Spring clamp terminal block conversion module | | FA1-TE40PA | P.131 | | | | |
| | LD75D2 LD75D4 | MR-J5-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | MR-J4-A series | Cable with connectors | | With pulse generator | FA-CBLQ75M2J3 | P.207 | | | |
| | | MR-J3-A series | Cable with connectors | | With pulse generator | FA-CBLQ75M2J3-P | P.207 | | | |
| | | MR-J2-A series | Cable with connectors | | With pulse generator | FA-CBLQ75M2J2 | P.209 | | | |
| | | MR-J2S-A series | Cable with connectors | | With pulse generator | FA-CBLQ75M2J2-P | P.209 | | | |
| YASKAWA Σ-III series Σ-V series | | Cable with connectors | | | FA-CBLQ75Y2E3 | P.212 | | | | |
| | | For general-purpose stepping motors and servo amplifiers | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | | General-purpose discrete cable | | With pulse generator | FA-CBLQ75G2 | P.213 | | | |
| | | | General-purpose discrete cable | | With pulse generator | FA-CBLQ75G2-P | P.213 | | | |
| | | | Spring clamp terminal block conversion module (only for the LD75D2) | | FA1-TE40PA | P.131 | | | | |
| Positioning module (open collector output system) | LD75P1 | MR-J5-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7PM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | MR-J4-A series | Cable with connectors | | FA-CBLQ75PM2J3-1 | P.207 | | | | |
| | | MR-J3-A series | Cable with connectors | | FA-CBLQ75PM2J2-1 | P.209 | | | | |
| | | MR-J2-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | MR-J2S-A series | Cable with connectors | | FA-CBLQ75G2-1 | P.213 | | | | |
| | | For general-purpose stepping motors and servo amplifiers | General-purpose discrete cable | | With pulse generator | FA-CBLQ75G2-1P | P.213 | | | |
| | | | Spring clamp terminal block conversion module | | FA1-TE40PA | P.131 | | | | |
| | LD75P2 LD75P4 | MR-J5-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7PM*J3 | P.214 | FA-CBL**Q7 | P.214 |
| | | MR-J4-A series | Cable with connectors | | FA-CBLQ75PM2J3 | P.207 | | | | |
| | | MR-J3-A series | Cable with connectors | | FA-CBLQ75PM2J2 | P.209 | | | | |
| | | MR-J2-A series | Junction terminal block | Screw | FA-LTBQ75DP | P.204 | FA-CBLQ7DG* | P.214 | FA-CBL**Q7 | P.214 |
| | | MR-J2S-A series | Cable with connectors | | FA-CBLQ75G2 | P.213 | | | | |
| For general-purpose stepping motors and servo amplifiers | | General-purpose discrete cable | | With pulse generator | FA-CBLQ75G2-P | P.213 | | | | |
| | | Spring clamp terminal block conversion module (only for the LD75P2) | | FA1-TE40PA | P.131 | | | | | |

MELSEC-L series <High-speed counter modules>

| Programmable controller module model | Unit type | | | Model | | | Connection cable | |
|--------------------------------------|-----------------------------------------------|-------|---------------------------|------------|-------|--|------------------|-------|
| LD62 | Junction terminal block | Screw | Small-size terminal block | FA-TBS40P | P.144 | | FA-SCBL**FMV-M | P.202 |
| LD62D | Spring clamp terminal block conversion module | | | FA1-TE40PA | P.131 | | | |

CC-Link IE TSN <I/O modules>

| Programmable controller module model | Unit type | | | | | Model | Connection cable | | |
|--------------------------------------|------------------------|--------------------------------------------|-------------------------|------------------------|--------------------------------------------|--------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| NZ2GN2B1-32D | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E P.236 | FA-CBL**M20 P.168 FA-CBL**YM20 P.169 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | | | | Mountable module ▶ P.283 | | |
| | | | | | | | FA1-TH8X2SC20S1E P.236 | | |
| | | | | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | | | |
| | | | | | | FA1-TH8X24RA1L20S1E P.232 | | | |
| | | | | | | FA1-TH16X24RA1L20S1E P.234 | | | |
| | | | Screw | Module mixing possible | Independent | 24VDC, N/O contact relay (positive common) | FA1-TH4X24RA1H20S1E P.230 | | |
| | | | | | | 24VDC, N/O contact relay (negative common) | FA1-TH8X24RA1H20S1E P.232 | | |
| | | | | | | 24VDC, N/O contact relay | FA1-TH16X24RA1H20S1E P.234 | | |
| | | | | | | 24VDC, 10mA | FA1-TH16XRA20S P.238 | | |
| | | | | | | 48VDC, 5mA | FA-TH16X24D31 P.239 | | |
| | | | | | | 100VDC, 2.5mA | FA-TH16X24D31L P.240 | | |
| | | | | | | 100VAC, 8mA | FA-TH16X48D31L P.241 | | |
| | | | | | | 200VAC, 7.5mA | FA-TH16X100D31L P.242 | | |
| NZ2GN2S1-16D | Positive common | Digital signal converter (terminal module) | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY P.130 | FA3-CB1L**EM1F18X P.157 | |
| | | | | Discrete cable | | | 0.75mm ² type (8A max.) P.156 | | 0.3mm ² type (4A max.) P.156 |
| | | | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E P.236 | FA3-CB1L**EM1F18X P.157 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | | | | Mountable module ▶ P.283 | | |
| | | | | | | | FA1-TH8X2SC20S1E P.236 | | |
| | | | | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | | | |
| | | | | | | FA1-TH8X24RA1L20S1E P.232 | | | |
| | | | | | | FA1-TH16X24RA1L20S1E P.234 | | | |
| | | | Screw | Module mixing possible | Independent | 24VDC, N/O contact relay (positive common) | FA1-TH16X24RA1H20S1E P.230 | | |
| | | | | | | 24VDC, N/O contact relay (negative common) | FA1-TH4X24RA1H20S1E P.230 | | |
| | | | | | | 24VDC, N/O contact relay | FA1-TH8X24RA1H20S1E P.232 | | |
| | | | | | | 24VDC, 10mA | FA1-TH16X20A31 P.244 | | |
| | | | | | | 48VDC, 5mA | FA-TH16X100A31 P.243 | | |
| | | | Discrete cable | Module mixing possible | Independent | 100VDC, 2.5mA | FA-TH16X100A31L P.244 | | |
| 100VAC, 8mA | FA-TH16X100A31L P.245 | | | | | | | | |
| 200VAC, 7.5mA | FA-TH16X200A31 P.245 | | | | | | | | |
| | FA-TH16X200A31L P.246 | | | | | | | | |
| NZ2GN2S1-16T | Positive common | Digital signal converter (terminal module) | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY P.130 | FA3-CB1L**EM1F18X P.157 | |
| | | | | Discrete cable | | | 0.75mm ² type (8A max.) P.156 | | 0.3mm ² type (4A max.) P.156 |
| | | | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E P.248 | FA3-CB1L**EM1F18X P.157 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | | | | Mountable module ▶ P.284 | | |
| | | | | | | | FA1-TH8Y2SC20S1E P.250 | | |
| | | | | Module mixing possible | Independent | FA1-TH16Y2SC20S1E P.259 | | | |
| | | | | | | FA1-TH16Y2RA20S1E P.254 | | | |
| | | | | | | FA1-TH16Y1SR20S1E P.256 | | | |
| | | | Screw | Module mixing possible | Independent | N/O contact relay | FA1-TH16Y1TR20S1E P.258 | | |
| | | | | | | Triac, 1.0A | FA1-TH16Y1SR20S1E P.256 | | |
| | | | | | | Transistor, 1.0A | FA1-TH16Y1TR20S1E P.258 | | |
| | | | | | | Discrete cable | 0.75mm ² type (8A max.) P.156 | | 0.3mm ² type (4A max.) P.156 |
| | | | | | | | FA1-CB3L07SQ**E1F18 P.156 | | FA1-CB3L03SQ**E1F18 P.156 |
| | | | NZ2GN2S1-16TE | Positive common | Digital signal converter (terminal module) | Junction terminal block | Spring clamp | | 1-wire type |
| Discrete cable | | 0.75mm ² type (8A max.) P.156 | | | | | 0.3mm ² type (4A max.) P.156 | | |
| Spring clamp | Installation base unit | Module selectable type | | | | Independent | FA1-TH1E4Y2SC20S1E P.248 | | FA3-CB1L**EM1F18X P.157 FA-CBL**MMH20 P.174 (for distributed installation) |
| | | | | | | | Mountable module ▶ P.284 | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E P.250 | | |
| | Module mixing possible | Independent | | | | FA1-TH1E16Y2SC20S1E P.253 | | | |
| | | | | | | FA1-TH1E16Y2RA20S1E P.255 | | | |
| | | | | | | FA1-TH1E16Y1SR20S1E P.257 | | | |
| Screw | Module mixing possible | Independent | | | | N/O contact relay | FA1-TH1E16Y1TR20S1E P.252 | | |
| | | | | | | Triac, 1.0A | FA1-TH1E16Y1SR20S1E P.257 | | |
| | | | | | | Transistor, 1.0A | FA1-TH1E16Y1TR20S1E P.252 | | |
| | | | | | | Discrete cable | 0.75mm ² type (8A max.) P.156 | 0.3mm ² type (4A max.) P.156 | |
| | | | | | | | FA1-CB3L07SQ**E1F18 P.156 | FA1-CB3L03SQ**E1F18 P.156 | |
| NZ2GN2S1-32D | Positive common | Digital signal converter (terminal module) | | | | Junction terminal block | Spring clamp | | |
| | | | Discrete cable | | 0.75mm ² type (8A max.) P.156 | | 0.3mm ² type (4A max.) P.156 | | |
| | | | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E P.236 | FA3-CB1L**EM2F34X P.157 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | | | | Mountable module ▶ P.283 | | |
| | | | | | | | FA1-TH8X2SC20S1E P.236 | | |
| | | | | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | | | |
| | | | | | | FA1-TH8X24RA1L20S1E P.232 | | | |
| | | | | | | FA1-TH16X24RA1L20S1E P.234 | | | |
| | | | Screw | Module mixing possible | Independent | 24VDC, N/O contact relay (positive common) | FA1-TH4X24RA1H20S1E P.230 | | |
| | | | | | | 24VDC, N/O contact relay (negative common) | FA1-TH8X24RA1H20S1E P.232 | | |
| | | | | | | 24VDC, N/O contact relay | FA1-TH16X24RA1H20S1E P.234 | | |
| | | | | | | 24VDC, 10mA | FA1-TH4X24RA1H20S1E P.230 | | |
| | | | | | | 48VDC, 5mA | FA1-TH8X24RA1H20S1E P.232 | | |
| | | | | | | 100VDC, 2.5mA | FA1-TH16X20A31 P.244 | | |
| 100VAC, 8mA | FA-TH16X100A31 P.243 | | | | | | | | |
| 200VAC, 7.5mA | FA-TH16X100A31L P.244 | | | | | | | | |

For programmable controllers, HMIs, and CNCs

Selection chart

| Programmable controller module model | Unit type | | | | Model | | Connection cable | | | |
|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------|---------------------------------|------------------------|--------------------------|--------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------|
| NZ2GN2S1-32T | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| | | | FA1-TH8Y2SC20S1E | P.250 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | |
| | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | | |
| Mountable module ▶ P.284 | | | | | | | | | | |
| Triac, 1.0A | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | | | |
| Transistor, 1.0A | Independent | FA1-TH16Y1SR20S1E | P.256 | | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | |
| NZ2GN2S1-32TE | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| | | | FA1-TH8Y2SC20S1E | P.250 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | |
| | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | | |
| Mountable module ▶ P.284 | | | | | | | | | | |
| Triac, 1.0A | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | | | |
| Transistor, 1.0A | Independent | FA1-TH16Y1SR20S1E | P.256 | | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | |
| NZ2GN2S1-32DT | Input side | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 | |
| | | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 |
| | | | | | | | Mountable module ▶ P.283 | | | |
| | | | | FA1-TH8X2SC20S1E | P.236 | | | | | |
| | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | P.230 | | | | | |
| | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | |
| 24VDC, N/O contact relay (negative common) | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | | | | |
| | | FA1-TH4X24RA1H20S1E | P.230 | | | | | | | |
| FA1-TH8X24RA1H20S1E | P.232 | | | | | | | | | |
| FA1-TH16X24RA1H20S1E | P.234 | | | | | | | | | |
| Output side | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | |
| | | | | | | Mountable module ▶ P.284 | | | | |
| | | | FA1-TH8Y2SC20S1E | P.250 | | | | | | |
| N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2SC20S1E | P.259 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | |
| Triac, 1.0A | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | | | |
| Transistor, 1.0A | Independent | FA1-TH16Y1SR20S1E | P.256 | | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | |
| NZ2GN2S1-32DTE | Input side | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 | |
| | | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 | |
| | Output side | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 |
| | | | | | | | Mountable module ▶ P.284 | | | |
| | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | |
| N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | |
| Triac, 1.0A | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | | | |
| Transistor, 1.0A | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | | | |
| Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 | | |
| | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | |
| NZ2GNCF1-32D | Positive common | Junction terminal block | Screw | Spring clamp | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**FMH FA-FCBL**FMH | P.185 P.186 | |
| | | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | |
| | | | | Small-size terminal block | 1-wire type | FA-TB32XY | P.132 | | | |
| | | | | | | FA-TBS32XY | P.133 | | | |
| | | | | 1-row terminal block | 1-wire type | FA-TB1L32XY | P.133 | | | |
| | | | | LED | 1-wire type | FA-TB32XYL | P.134 | | | |
| | | | | 3-row terminal block | 2-wire type | FA-TB32XYN3 | P.135 | | | |
| | | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY1 | P.138 | | | |
| | | | | Distributed 8-point (8 to F) | | FA-TB8XY2 | P.138 | | | |
| | | | | Distributed 8-point (10 to 17) | | FA-TB8XY3 | P.138 | | | |
| | | | | Distributed 8-point (18 to 1F) | | FA-TB8XY4 | P.138 | | | |
| | | | | Distributed 16-point (0 to F) | 2-wire type | FA-TB16XY1N | P.137 | | | |
| | | | | Distributed 16-point (10 to 1F) | | FA-TB16XY2N | P.137 | | | |
| | | | | Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 | P.139 | | | |
| Distributed 16-point (10 to 1F) | FA-TB16XY2 | P.139 | | | | | | | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|---------------------------------|------------------------|-----------------------------|---------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------|----------------|
| NZ2GNCF1-32D | Positive common | Junction terminal block | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | FA-CB8XY1 | P.146 | FA-CBL**FMH FA-FCBL**FMH FA-CBL**MMH (for distributed installation) | P.185 P.186 P.171 | |
| | | | | Distributed 8-point (8 to F) | | FA-CB8XY2 | P.146 | | | |
| | | | | Distributed 8-point (10 to 17) | | FA-CB8XY3 | P.146 | | | |
| | | | | Distributed 8-point (18 to 1F) | FA-CB8XY4 | P.146 | | | | |
| | | | | Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | P.147 | | | |
| | | | | Distributed 16-point (10 to 1F) | | FA-CB16XY2 | P.147 | | | |
| | | e-CON | 3-wire type | FA-LEB32XY | P.150 | FA-CBL**FMH FA-FCBL**FMH | P.185 P.186 | | | |
| | | | | FA-LEB32XY-3 | P.150 | | | | | |
| | | | | FA-LEB32XY-3A | P.150 | | | | | |
| | | Junction terminal block | Spring clamp | Screw | 1-row terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2H | P.172 |
| | | | | | | 2-wire type | FA-TB16XY | P.132 | FA-CBL**FM2LH | P.173 |
| | | | Screw | 3-row terminal block | 2-wire type | FA-TB1L16XYN | P.134 | FA-CBL**FM2LH | P.173 | |
| | | | | | 3-wire type | FA-TB16XYPN | P.135 | FA-CBL**FM2H FA-CBL**FM2LH | P.172 P.173 | |
| | | | e-CON | DIN rail installation only | 3-wire type | FA-TB16XYPN3 | P.136 | | | |
| | 3-wire type | | | | FA-LEB16XY | P.149 | | | | |
| | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH20 (for distributed installation) | P.172 P.173 P.174 | |
| | | | | | | Mountable module ▶ P.283 | | | | |
| | | | | | | FA1-TH8X2SC20S1E | P.236 | | | |
| | | | | | | Mountable module ▶ P.283 | | | | |
| | | | | | | FA1-TH4X24RA1L20S1E | P.230 | | | |
| | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | |
| | | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | | |
| | | | | FA1-TH8X24RA1H20S1E | P.232 | | | | | |
| | | Screw | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH16X24RA1H20S1E | P.234 | | | |
| | | | | | | FA1-TH16XRA20S | P.238 | | | |
| | | | | | | FA1-TH16X24D31 | P.239 | | | |
| FA1-TH16X48D31L | | | | | | P.240 | | | | |
| FA1-TH16X48D31L | P.241 | | | | | | | | | |
| FA1-TH16X100D31L | P.242 | | | | | | | | | |
| FA1-TH16X100A31 | P.243 | | | | | | | | | |
| Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA1-TH16X100A31L | P.244 | | | | | |
| | | | | FA1-TH16X200A31 | P.245 | | | | | |
| | | | | FA1-TH16X200A31L | P.246 | | | | | |
| | | | | FA1-TH16X24D31 | P.239 | | | | | |
| | | | | FA1-TH16X48D31L | P.241 | | | | | |
| | | | | FA1-TH16X100D31L | P.242 | | | | | |
| Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-M | P.188 | | |
| | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.159 P.159 P.159 | | |
| NZ2GN2B1-32T | Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 |
| | | | | | | | Mountable module ▶ P.284 | | | |
| | | | | | | | FA1-TH8Y2SC20S1E | P.250 | | |
| | | | | | | | Mountable module ▶ P.284 | | | |
| | | | | | | | FA1-TH16Y2SC20S1E | P.259 | | |
| | | | | | | | Mountable module ▶ P.284 | | | |
| | | | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | |
| | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | |
| | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | |
| | | | | | FA1-TH16YRA11 | P.260 | | | | |
| | | Screw | N/O contact relay | Module replaceable | Independent | 1-wire type | FA1-TH16YRA21 | P.261 | | |
| | | | | | | 2-wire type | FA1-TH16YRA20 | P.262 | | |
| | | | | | | 1-wire type | FA1-TH16YRA11S | P.263 | | |
| | | | | | | 2-wire type | FA1-TH16YRA21S | P.264 | | |
| | | | | | | Independent | FA1-TH16YRA20S | P.265 | | |
| | | | | | | Independent | FA1-TH16YRA20SL | P.267 | | |
| | | | | | | Module mixing possible | Independent | FA1-TH16YRAB20SL | P.268 | |
| | | | | | | Module replaceable | Independent | FA1-TH16YRAC20S | P.269 | |
| | | | | | | 1-wire type | FA1-TH16YSR11S | P.270 | | |
| | | | | | | 2-wire type | FA1-TH16YSR21S | P.271 | | |
| Independent | FA1-TH16YSR20S | | | | | P.272 | | | | |
| 1-wire type | FA1-TH16YTL11S | | | | | P.273 | | | | |
| 2-wire type | FA1-TH16YTL21S | | | | | P.274 | | | | |
| 1-wire type | FA1-TH16YTH11S | | | | | P.275 | | | | |
| Independent | FA1-TH16YTR20S | P.277 | | | | | | | | |
| Independent | FA1-TH16YTR20 | P.278 | | | | | | | | |

For programmable controllers, HMIs, and CNCs

Selection chart

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | |
|--------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------|------------------------|--------------------------|---------------------------------------------------|-------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------|
| NZ2GNCF1-32T | Sink output | Junction terminal block | Spring clamp | Small-size terminal block | 1-wire type | FA1-TESV32XY | P.126 | FA-CBL**FMH FA-FCBL**FMH | P.185 P.186 | | |
| | | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | | |
| | | | | 1-row terminal block | 1-wire type | FA-TB32XY | P.132 | | | | |
| | | | | | 1-wire type | FA-TBS32XY | P.133 | | | | |
| | | | | LED | 1-wire type | FA-TB1L32XY | P.133 | | | | |
| | | | | | 1-wire type | FA-TB32XYL | P.134 | | | | |
| | | | Screw | 3-row terminal block | 2-wire type | FA-TB32XYP3 | P.135 | | | | |
| | | | | | 3-wire type | FA-TB8XY1 | P.138 | | | | |
| | | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY2 | P.138 | | | | |
| | | | | | 3-wire type | FA-TB8XY3 | P.138 | | | | |
| | | | | Distributed 8-point (8 to F) | 3-wire type | FA-TB8XY4 | P.138 | | | | |
| | | | | | 3-wire type | FA-TB8XY4 | P.138 | | | | |
| | | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | FA-TB16XY1 | P.139 | | | | | |
| | | | | 3-wire type | FA-TB16XY2 | P.139 | | | | | |
| | | | Distributed 8-point (8 to F) | 3-wire type | FA-CB8XY1 | P.146 | | | | | |
| | | | | 3-wire type | FA-CB8XY2 | P.146 | | | | | |
| | | | Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY3 | P.146 | | | | | |
| | | | | 3-wire type | FA-CB8XY4 | P.146 | | | | | |
| | | Distributed 16-point (0 to F) | 3-wire type | FA-CB16XY1 | P.147 | | | | | | |
| | | | 3-wire type | FA-CB16XY2 | P.147 | | | | | | |
| | | e-CON | Distributed 16-point (10 to 1F) | 3-wire type | FA-LEB32XY | P.150 | | | | | |
| | | | | 3-wire type | FA-LEB32XY-3 | P.150 | | | | | |
| | | Junction terminal block | Spring clamp | 1-row terminal block | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2H FA-CBL**FM2LH | P.172 P.173 | | |
| | | | | | 1-wire type | FA1-TB16XY | P.132 | | | | |
| 3-row terminal block | 2-wire type | | | FA-TB1L16XYP | P.134 | | | | | | |
| | 3-wire type | | | FA-TB16XYPN | P.135 | | | | | | |
| e-CON | 3-wire type | | | FA-TB16XYPN3 | P.136 | | | | | | |
| | 3-wire type | | | FA-LEB16XY | P.149 | | | | | | |
| DIN rail installation only | 3-wire type | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | | |
| | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | | |
| | 3-wire type | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | | |
| | | | 3-wire type | FA-LEB16XY-D | P.149 | | | | | | |
| | NZ2GNCF1-32T | | Sink output | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH (for distributed installation) | P.172 P.173 P.171 |
| | | | | | | | | Mountable module ▶ P.284 | | | |
| FA1-TH8Y2SC20S1E | | P.250 | | | | | | | | | |
| N/O contact relay | | Module mixing possible | | | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | |
| | | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | |
| | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | |
| Screw | | N/O contact relay | | | Module replaceable | 1-wire type | FA-TH16YRA11 | P.260 | | | |
| | | | | | | 2-wire type | FA-TH16YRA21 | P.261 | | | |
| | | | | | | Independent | FA-TH16YRA20 | P.262 | | | |
| | | | | | Module mixing possible | 1-wire type | FA-TH16YRA11S | P.263 | | | |
| | | | | | | 2-wire type | FA-TH16YRA21S | P.264 | | | |
| | | | | | | Independent | FA-TH16YRA20S | P.265 | | | |
| | | N/C contact relay | | Module mixing possible | Independent | FA-TH16YRA20SL | P.267 | | | | |
| | | | | | | FA-TH16YRAB20SL | P.268 | | | | |
| | | | | | | FA-TH16YRAC20S | P.269 | | | | |
| | | | | C/O contact relay | Module replaceable | Independent | 1-wire type | FA-TH16YSR11S | P.270 | | |
| | | | | | | | 2-wire type | FA-TH16YSR21S | P.271 | | |
| | | | | | | | Independent | FA-TH16YSR20S | P.272 | | |
| Triac, 1.0A | | Module replaceable | | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | | | |
| | | | | | 2-wire type | FA-TH16YTL21S | P.274 | | | | |
| | | | | | Independent | FA-TH16YTR20S | P.277 | | | | |
| Transistor, 1.0A (sink) | | Module replaceable | | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | |
| | | | | | 2-wire type | FA-TH16YTR20S | P.277 | | | | |
| | | | | | Independent | FA-TH16YTR20S | P.277 | | | | |
| Transistor, 1.0A (source) | Module replaceable | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | | | |
| | | | 2-wire type | FA-TH16YTR20S | P.277 | | | | | | |
| | | | Independent | FA-TH16YTR20S | P.277 | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | | | |
| | | | 2-wire type | FA-TH16YTR20S | P.277 | | | | | | |
| | | | Independent | FA-TH16YTR20S | P.277 | | | | | | |
| Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-M | P.188 | | | |
| | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.159 P.159 P.159 | | | |
| NZ2GN2B1-32DT | I/O combined | For the input side, refer to the specifications of the NZ2GN2B1-32D. For the output side, refer to the specifications of the NZ2GN2B1-32T. | | | | | | | | | |
| NZ2GN2B1-32TE | Source output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH (for distributed installation) | P.168 P.169 P.171 | |
| | | | | | | | Mountable module ▶ P.284 | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2SC20S1E | P.253 | | | | |
| | | | | | | Mountable module ▶ P.284 | | | | | |
| | | | | | | FA1-TH1E16Y2RA20S1E | P.255 | | | | |
| | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH1E16Y1SR20S1E | P.257 | | | | | |
| | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | | | |
| | | | | | FA1-TH1E16Y2RA20S | P.266 | | | | | |
| | | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | |
| FA1-TH1E16Y2RA20S | P.266 | | | | | | | | | | |
| Transistor, 1.0A (source) | Module replaceable | | 1-wire type | FA-THE16YTH11S | P.276 | | | | | | |
| | | | | FA-THE16YTR20S | P.279 | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | | | | | | |
| | | | FA-THE16YTR20S | P.279 | | | | | | | |
| NZ2GN2B1-32DTE | I/O combined | The input side cannot be used. For the output side, refer to the specifications of the NZ2GN2B1-32TE. | | | | | | | | | |

CC-Link IE TSN <I/O modules with safety functions>

| Programmable controller module model | Unit type | | Model | Connection cable |
|-----------------------------------------------|----------------|------------------------------------|-------|----------------------------------|
| NZ2GNSS2-8D NZ2GNSS2-8TE NZ2GNSS2-16DTE | Discrete cable | 0.75mm ² type (8A max.) | | FA1-CB3L07SQ**E1F40 P.156 |
| | | 0.3mm ² type (4A max.) | | FA1-CB3L03SQ**E1F40 P.156 |

CC-Link IE TSN <Analog modules>

| Programmable controller module model | Unit type | | | Model | Connection cable | | | | | | |
|--------------------------------------------|-----------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------|--------------------------------|----------------------------------------------------------------|---------------------------------------------------|--|
| | | | | | Mountable module | | | | | | |
| Analog input module | NZ2GN2S-60AD4 | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | | FA3-CB2L**AT4XV1E P.302 | | |
| | | | | | | | Voltage input | | | | |
| | | | 0 to 5V FA-ATSV1XV05 P.297 | | | | | | | | |
| | | | 1 to 5V FA-ATSV1XV15 P.297 | | | | | | | | |
| | | | -10 to 10V FA-ATSV1XV1010 P.297 | | | | | | | | |
| | | | Current input | | | | | | | | |
| | 4 to 20mA FA-ATSV1XA420 P.298 | | | | | | | | | | |
| | Screw | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TB P.292 | Distributor | | | | | | |
| | | | | | 4 to 20mA FA-ATSV1XD P.299 | | | | | | |
| | RTD input | | | | | | | | | | |
| -200 to +650°C FA-ATSV1XRPT P.300 | | | | | | | | | | | |
| 0 to +100°C FA-ATSV1XRPT0010 P.300 | | | | | | | | | | | |
| 0 to +200°C FA-ATSV1XRPT0020 P.300 | | | | | | | | | | | |
| -200 to +600°C FA-ATSV1XRJPT P.300 | | | | | | | | | | | |
| Thermocouple input | | | | | | | | | | | |
| +600 to +1700°C FA-ATSV1XTB P.301 | | | | | | | | | | | |
| 0 to +1600°C FA-ATSV1XTR P.301 | | | | | | | | | | | |
| 0 to +1600°C FA-ATSV1XTS P.301 | | | | | | | | | | | |
| -200 to +1200°C FA-ATSV1XTK P.301 | | | | | | | | | | | |
| 0 to +400°C FA-ATSV1XTK0040 P.301 | | | | | | | | | | | |
| 0 to +600°C FA-ATSV1XTK0060 P.301 | | | | | | | | | | | |
| 0 to +800°C FA-ATSV1XTK0080 P.301 | | | | | | | | | | | |
| -200 to +900°C FA-ATSV1XTE P.301 | | | | | | | | | | | |
| -40 to +750°C FA-ATSV1XTJ P.301 | | | | | | | | | | | |
| -200 to +350°C FA-ATSV1XTT P.301 | | | | | | | | | | | |
| -200 to +1250°C FA-ATSV1XTN P.301 | | | | | | | | | | | |
| Pass-through module FA-ATFTMX P.316 | | | | | | | | | | | |
| Dummy module FA-ATNDM5 P.317 | | | | | | | | | | | |
| NZ2GN2B-60AD4 | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | FA-CBL**ATF P.304 | | | | |
| | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | | | | | |
| | | Screw | | Input to the programmable controller: 4 to 20mA | 8-channel installation base unit FA-ATB8XTB P.296 | | | | | | |
| | | | | | Installation base unit FA-ATKB8XTB + Adapter FA-ATKAA8XM P.295 | | | | | | |
| NZ2GN2S-60AD4 | Discrete cable | Shielded | | | | | FA1-CB2L**S1B2-4 P.195 | | | | |
| Analog output module | NZ2GN2S-60DA4 | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter | | FA3-CB2L**AT4YV1E P.313 | | |
| | | | | | | | (The programmable controller outputs voltage.) | | | | |
| | | | Voltage output | | | | | | | | |
| | | | 0 to 5V FA-ATSAM1YV05 P.311 | | | | | | | | |
| | | | 0 to 10V FA-ATSAM1YV010 P.311 | | | | | | | | |
| | | | 1 to 5V FA-ATSAM1YV15 P.311 | | | | | | | | |
| | -10 to 10V FA-ATSAM1YV1010 P.311 | | | | | | | | | | |
| | Screw | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | Current output | | | | | | |
| | | | | | 0 to 20mA FA-ATSV1YA020 P.312 | | | | | | |
| | 4 to 20mA FA-ATSV1YA420 P.312 | | | | | | | | | | |
| Pass-through module FA-ATFTMX P.316 | | | | | | | | | | | |
| Dummy module FA-ATNDM5 P.317 | | | | | | | | | | | |
| NZ2GN2B-60AD4 | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter | | FA3-CB2L**AT4YV1E P.313 | | | |
| | | | | | | (The programmable controller outputs current.) | | | | | |
| | | Voltage output | | | | | | | | | |
| | | 0 to 5V FA-ATSAM1YV05 P.309 | | | | | | | | | |
| 0 to 10V FA-ATSAM1YV010 P.309 | | | | | | | | | | | |
| 1 to 5V FA-ATSAM1YV15 P.309 | | | | | | | | | | | |
| -10 to 10V FA-ATSAM1YV1010 P.309 | | | | | | | | | | | |
| Screw | Module selectable type | Output from the programmable controller: 4 to 20mA | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | Current output | | | | | | | |
| | | | | 0 to 20mA FA-ATSAM1YA020 P.310 | | | | | | | |
| 4 to 20mA FA-ATSAM1YA420 P.310 | | | | | | | | | | | |
| Pass-through module FA-ATFTMX P.316 | | | | | | | | | | | |
| Dummy module FA-ATNDM5 P.317 | | | | | | | | | | | |
| NZ2GN2B-60AD4 | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter | | FA-CBL**ATYF P.315 | | | |
| | | | | | | (The programmable controller outputs voltage.) | | | | | |
| | | Screw | | | | Module selectable type | Input to the programmable controller: 4 to 20mA | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | Output modules for analog signal converter | |
| | | | | | | | | | | (The programmable controller outputs current.) | |
| Voltage output | | | | | | | | | | | |
| 0 to 5V FA-ATSAM1YV05 P.309 | | | | | | | | | | | |
| 0 to 10V FA-ATSAM1YV010 P.309 | | | | | | | | | | | |
| 1 to 5V FA-ATSAM1YV15 P.309 | | | | | | | | | | | |
| -10 to 10V FA-ATSAM1YV1010 P.309 | | | | | | | | | | | |
| Current output | | | | | | | | | | | |
| 0 to 20mA FA-ATSAM1YA020 P.310 | | | | | | | | | | | |
| 4 to 20mA FA-ATSAM1YA420 P.310 | | | | | | | | | | | |
| Pass-through module FA-ATFTMX P.316 | | | | | | | | | | | |
| Dummy module FA-ATNDM5 P.317 | | | | | | | | | | | |
| NZ2GN2S-60AD4 | Discrete cable | Shielded | | | | | FA1-CB2L**S1B2-4 P.195 | | | | |

CC-Link IE Field Basic <I/O modules>

| Programmable controller module model | | Unit type | | | | | Model | Connection cable | | | | |
|--------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------|-------------------------|------------------------|-------------------------------------------|-------|
| NZ2MFB1-32D | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for distributed installation) | P.168 P.169 P.174 | | | |
| | | | | | | | FA1-TH8X2SC20S1E Mountable module ▶ P.283 | | | | | |
| | | | | | | | FA1-TH4X24RA1L20S1E | | | P.230 | | |
| | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | | | |
| | | | | FA1-TH16X24RA1L20S1E | P.234 | | | | | | | |
| | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | | | | |
| | | | Screw | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E | P.232 | | | | |
| | | | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | |
| | | | | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA-TH16XRA20S | P.238 | |
| | | | | | | | 24VDC, 10mA | | | FA-TH16X24D31 | P.239 | |
| | | | | 48VDC, 5mA | FA-TH16X24D31L | P.240 | | | | | | |
| | | | | 100VDC, 2.5mA | FA-TH16X48D31L | P.241 | | | | | | |
| | | | | 200VAC, 7.5mA | Module mixing possible | 2-wire type | FA-TH16X100D31L | P.242 | | | | |
| | | | | | | | FA-TH16X100A31 | P.243 | | | | |
| FA-TH16X100A31L | P.244 | | | | | | | | | | | |
| FA-TH16X200A31 | P.245 | | | | | | | | | | | |
| FA-TH16X200A31L | P.246 | | | | | | | | | | | |
| NZ2MFB1-32T | Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | | | |
| | | | | | | | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 | | | | | |
| | | | | | | | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 | | | | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | | | P.254 | | |
| | | | | Triac, 1.0A | | | FA1-TH16Y1SR20S1E | | | P.256 | | |
| | | | | Transistor, 1.0A | | | FA1-TH16Y1TR20S1E | | | P.258 | | |
| | | | Screw | N/O contact relay | Module replaceable | Independent | 1-wire type | FA-TH16YRA11 | P.260 | | | |
| | | | | | | | 2-wire type | FA-TH16YRA21 | P.261 | | | |
| | | | | | | | Independent | FA-TH16YRA20 | P.262 | | | |
| | | | | | | | 1-wire type | FA-TH16YRA11S | P.263 | | | |
| | | | | | | | 2-wire type | FA-TH16YRA21S | P.264 | | | |
| | | | | | | | Independent | FA-TH16YRA20S | P.265 | | | |
| | | | | N/C contact relay | Module mixing possible | Independent | FA-TH16YRA20SL | P.267 | | | | |
| | | | | | | | FA-TH16YRAB20SL | P.268 | | | | |
| | | | | | | | FA-TH16YRAC20S | P.269 | | | | |
| | | | | | | | C/O contact relay | Module replaceable | Independent | 1-wire type | FA-TH16YSR11S | P.270 |
| | | | | | | | 2-wire type | | | FA-TH16YSR21S | P.271 | |
| | | | | | | | Independent | | | FA-TH16YSR20S | P.272 | |
| Triac, 1.0A | Module mixing possible | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | | | | | | |
| | | | 2-wire type | FA-TH16YTL21S | P.274 | | | | | | | |
| | | | Independent | FA-TH16YTR20S | P.277 | | | | | | | |
| Transistor, 1.0A (sink) | Module replaceable | 1-wire type | FA-TH16YTH11S | P.275 | | | | | | | | |
| | | | Transistor, 1.0A (source) | Module mixing possible | Independent | FA-TH16YTR20S | P.277 | | | | | |
| | | | Transistor, 1.0A | | | FA-TH16Y2TR20 | P.278 | | | | | |
| NZ2MFB1-32DT | I/O combined | For the input side, refer to the specifications of the NZ2MFB1-32D. For the output side, refer to the specifications of the NZ2MFB1-32T. | | | | | | | | | | |
| NZ2MFB1-32TE1 | Source output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E Mountable module ▶ P.284 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E Mountable module ▶ P.284 | | | | | |
| | | | | | | | FA1-TH1E16Y2SC20S1E Mountable module ▶ P.284 | | | | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | | | P.253 | | |
| | | | | Triac, 1.0A | | | FA1-TH1E16Y1SR20S1E | | | P.257 | | |
| | | | | Transistor, 1.0A | | | FA1-TH1E16Y1TR20S1E | | | P.252 | | |
| | | | Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | |
| | | | | | | | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | |
| | | | | Transistor, 1.0A | Module mixing possible | Independent | FA-THE16YTR20S | | | P.279 | | |
| | | | | NZ2MFB1-32DE1 | I/O combined | The input side cannot be used. For the output side, refer to the specifications of the NZ2MFB1-32TE1. | | | | | | |
| NZ2MF2S1-32D | Positive common | Digital signal converter (terminal module) | Junction terminal block | Spring clamp | 1-wire type | Independent | FA1-TE1SV16XY | FA3-CB1L**EM2F34X | P.157 P.174 | | | |
| | | | | | | | Installation base unit | | | Module selectable type | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | |
| | | | | | | | | | | | FA1-TH8X2SC20S1E Mountable module ▶ P.283 | |
| | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E | | P.230 | | | | |
| | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | |
| | | | | | | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E | P.230 | | | | | | | | |
| | | | FA1-TH8X24RA1H20S1E | P.232 | | | | | | | | |
| | | | FA1-TH16X24RA1H20S1E | P.234 | | | | | | | | |

| Programmable controller module model | | Unit type | | | | | Model | | Connection cable | | | | | |
|--------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------|--------------------------|-------------------------------------|------------------------------------|--------------------------|--------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------|---------------------|----------------|---------------------|
| NZ2MF2S1-32D | Positive common | Digital signal converter (terminal module) | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S | P.238 | FA3-CB1L**EM2F34X FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | | | | |
| | | | | 24VDC, 10mA | | 2-wire type | FA-TH16X24D31 | P.239 | | | | | | |
| | | | | 48VDC, 5mA | | 2-wire type | FA-TH16X24D31L | P.240 | | | | | | |
| | | | | 100VDC, 2.5mA | | 2-wire type | FA-TH16X48D31L | P.241 | | | | | | |
| | | | | 100VDC, 2.5mA | | 2-wire type | FA-TH16X100D31L | P.242 | | | | | | |
| | | | | 100VAC, 8mA | | 2-wire type | FA-TH16X100A31 | P.243 | | | | | | |
| | | | | 100VAC, 8mA | | 2-wire type | FA-TH16X100A31L | P.244 | | | | | | |
| | | | | 200VAC, 7.5mA | | 2-wire type | FA-TH16X200A31 | P.245 | | | | | | |
| | | | | 200VAC, 7.5mA | | 2-wire type | FA-TH16X200A31L | P.246 | | | | | | |
| | | | | | Discrete cable | 0.75mm ² type (8A max.) | | | | | | | | FA1-CB3L07SQ**E1F34 |
| | | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | | | | |
| NZ2MF2S1-32T | Digital signal converter (terminal module) | Junction terminal block | Spring clamp | N/O contact relay | Module replaceable | Independent | FA1-TH4Y2SC20S1E | P.248 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | | FA1-TH8Y2SC20S1E | P.250 | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | | FA1-TH16Y2SC20S1E | P.259 | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | | N/O contact relay | Module mixing possible | | | Independent | FA1-TH16Y2RA20S1E | P.254 | |
| | | | | | | | Triac, 1.0A | | | | Independent | FA1-TH16Y1SR20S1E | P.256 | |
| | | | | | | | Transistor, 1.0A | | | | Independent | FA1-TH16Y1TR20S1E | P.258 | |
| | | | | | | | N/C contact relay | Module mixing possible | | | Independent | 1-wire type | FA-TH16YRA11 | P.260 |
| | | | | | | | | | | | | 2-wire type | FA-TH16YRA21 | P.261 |
| | | | | | | | | | | | | Independent | FA-TH16YRA20 | P.262 |
| | | | | | | | | | | | | 1-wire type | FA-TH16YRA11S | P.263 |
| | | | | | | | | | | | | 2-wire type | FA-TH16YRA21S | P.264 |
| | | | | | | | | | | | | Independent | FA-TH16YRA20S | P.265 |
| | | | | | | | C/O contact relay | Module replaceable | | | Independent | FA-TH16YRA20SL | P.267 | |
| | | | | | | | | | | | | FA-TH16YRAB20SL | P.268 | |
| | | | | | | | Triac, 1.0A | Module replaceable | | | Independent | FA-TH16YRAC20S | P.269 | |
| | | | | | | | | | | | | FA-TH16YSR11S | P.270 | |
| | | | | | | | Transistor, 1.0A (sink) | Module replaceable | | | Independent | FA-TH16YSR21S | P.271 | |
| FA-TH16YSR20S | P.272 | | | | | | | | | | | | | |
| Transistor, 1.0A (source) | Module replaceable | Independent | FA-TH16YTL11S | P.273 | | | | | | | | | | |
| | | | FA-TH16YTL21S | P.274 | | | | | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA-TH16YTH11S | P.275 | | | | | | | | | | |
| | | | FA-TH16YTR20S | P.277 | | | | | | | | | | |
| Transistor, 2.0A | Module mixing possible | Independent | FA-TH16YTR20 | P.278 | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 | | | | | |
| | | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | | | | |
| NZ2MF2S1-32TE1 | Digital signal converter (terminal module) | Junction terminal block | Spring clamp | N/O contact relay | Module mixing possible | Independent | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | | | | |
| | | | | | | | FA1-TH1E4Y2SC20S1E | P.248 | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | | N/O contact relay | Module mixing possible | | | Independent | FA1-TH1E16Y2RA20S1E | P.255 | |
| | | | | | | | Triac, 1.0A | | | | Independent | FA1-TH1E16Y1SR20S1E | P.257 | |
| | | | | | | | Transistor, 1.0A | | | | Independent | FA1-TH1E16Y1TR20S1E | P.252 | |
| N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | | | | | | |
| | | | FA-THE16YTH11S | P.276 | | | | | | | | | | |
| | | | FA-THE16YTR20S | P.279 | | | | | | | | | | |
| | Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 | | | | | |
| | | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | | | | |
| NZ2MF2S1-32DT | Input side | Digital signal converter (terminal module) | Junction terminal block | Spring clamp | N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y FA-CBL**MMH20 (for distributed installation) | P.157 P.174 | | | |
| | | | | | | | | FA1-TH4X2SC20S1E | P.236 | | | | | |
| | | | | | | | | Mountable module ▶ P.283 | | | | | | |
| | | | | | | | | FA1-TH8X2SC20S1E | P.236 | | | | | |
| | | | | | | | | Mountable module ▶ P.283 | | | | | | |
| | | | | | | | | FA1-TH4X24RA1L20S1E | P.230 | | | | | |
| | | | | | | | | FA1-TH8X24RA1L20S1E | P.232 | | | | | |
| | | | | | | | | FA1-TH16X24RA1L20S1E | P.234 | | | | | |
| | | | | | | | | FA1-TH4X24RA1H20S1E | P.230 | | | | | |
| | | | | | | | | FA1-TH8X24RA1H20S1E | P.232 | | | | | |
| | | | | | | | | FA1-TH16X24RA1H20S1E | P.234 | | | | | |
| | | | | | | | | 24VDC, N/O contact relay | Module mixing possible | | | Independent | FA-TH16XRA20S | P.238 |
| | | | | | | | | 24VDC, 10mA | | | | 2-wire type | FA-TH16X24D31 | P.239 |
| | | | | | | | | 48VDC, 5mA | | | | 2-wire type | FA-TH16X24D31L | P.240 |
| | | | | | | | | 100VDC, 2.5mA | | | | 2-wire type | FA-TH16X48D31L | P.241 |
| 100VDC, 2.5mA | | 2-wire type | FA-TH16X100D31L | P.242 | | | | | | | | | | |
| 100VAC, 8mA | | 2-wire type | FA-TH16X100A31 | P.243 | | | | | | | | | | |
| 100VAC, 8mA | | 2-wire type | FA-TH16X100A31L | P.244 | | | | | | | | | | |
| 200VAC, 7.5mA | | 2-wire type | FA-TH16X200A31 | P.245 | | | | | | | | | | |
| 200VAC, 7.5mA | | 2-wire type | FA-TH16X200A31L | P.246 | | | | | | | | | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | |
|--------------------------------------|----------------|------------------------------------|------------------------------------|---------------------------|------------------------------------|-------------------|---------------------|---------------------|--------------------------|-------|
| NZ2MF2S1-32DT | Output side | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 |
| | | | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | | |
| | | FA1-TH8Y2SC20S1E | | | | | P.250 | | | |
| | | FA1-TH16Y2SC20S1E | | | | | P.259 | | | |
| | | N/O contact relay | | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | |
| | | | | | | FA1-TH16Y1SR20S1E | P.256 | | | |
| | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | |
| | | Screw | | N/O contact relay | Module replaceable | Independent | 1-wire type | FA-TH16YRA11 | P.260 | |
| | | | | | | | 2-wire type | FA-TH16YRA21 | P.261 | |
| | | | | | | | Independent | FA-TH16YRA20 | P.262 | |
| | | | | | | | 1-wire type | FA-TH16YRA11S | P.263 | |
| | | | Module replaceable | 2-wire type | Independent | FA-TH16YRA21S | P.264 | | | |
| | | | | | | FA-TH16YRA20S | P.265 | | | |
| | | | Module mixing possible | Independent | FA-TH16YRA20SL | P.267 | | | | |
| | | | | | FA-TH16YRAB20SL | P.268 | | | | |
| | | | N/C contact relay | Module mixing possible | Independent | FA-TH16YRAC20S | P.269 | | | |
| | | | | | | FA-TH16YSR11S | P.270 | | | |
| | | | Triac, 1.0A | Module replaceable | Independent | 2-wire type | FA-TH16YSR21S | P.271 | | |
| | | | | | | Independent | FA-TH16YSR20S | P.272 | | |
| | | | Transistor, 1.0A (sink) | Module replaceable | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | |
| | | | | | | 2-wire type | FA-TH16YTL21S | P.274 | | |
| | | Transistor, 1.0A (source) | Module replaceable | Independent | 1-wire type | FA-TH16YTH11S | P.275 | | | |
| | | | | | FA-TH16YTR20S | P.277 | | | | |
| | | Transistor, 1.0A | Module mixing possible | Independent | FA-TH16Y2TR20 | P.278 | | | | |
| | | | | | | | | | | |
| | | Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 |
| | | | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 |
| NZ2MF2S1-32DTE1 | Input side | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | FA3-CB1L**EM2F34Y | P.157 |
| | | | Spring clamp | | | 1-wire type | FA1-TE1SV16XY | P.130 | | |
| | Output side | Junction terminal block | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | Mountable module ▶ P.284 | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | |
| | | | | | | | FA1-TH1E16Y2SC20S1E | P.253 | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | |
| | | | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | |
| | | | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | |
| | | | | | | | FA-THE16YTH11S | P.276 | | |
| | | | | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-THE16YTR20S | P.279 | | |
| | | | | | | | Independent | | | |
| | | | | Transistor, 1.0A | Module mixing possible | Independent | | | | |
| | | | | | | | | | | |
| | | | | Discrete cable | 0.75mm ² type (8A max.) | | | | | |
| 0.3mm ² type (4A max.) | | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | | |
| NZ2MF2S2-16A NZ2MF2S2-16R | Discrete cable | 0.75mm ² type (8A max.) | | | | | | FA1-CB3L07SQ**E1F34 | P.156 | |
| | | 0.3mm ² type (4A max.) | | | | | | FA1-CB3L03SQ**E1F34 | P.156 | |

CC-Link IE Field <I/O modules>

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | | |
|--------------------------------------|-------------------------|--------------------------------------------|--------------------------------|--------------------------------------------|--------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------------------------------------------------------|-------------------------|--------------------|
| NZ2GF2B1N1-16D NZ2GF2B1-32D | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 P.236 FA1-TH8X2SC20S1E Mountable module ▶ P.283 P.236 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for distributed installation) | P.168 P.169 P.174 | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | | | | | | |
| | | | | | | | FA1-TH8X24RA1L20S1E P.232 | | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E P.234 | | | | | | |
| | | | | | | | FA1-TH4X24RA1H20S1E P.230 | | | | | | |
| | | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | | | FA1-TH8X24RA1H20S1E P.232 | | | |
| | | | FA1-TH16X24RA1H20S1E P.234 | | | | | | | | | | |
| | | | 24VDC, 10mA | | 2-wire type | FA-TH16XRA20S P.238 | | | | | | | |
| | | | | | | FA-TH16X24D31 P.239 | | | | | | | |
| | | | 48VDC, 5mA | | 2-wire type | FA-TH16X24D31L P.240 | | | | | | | |
| | | | | | | FA-TH16X48D31L P.241 | | | | | | | |
| | | | 100VDC, 2.5mA | 2-wire type | FA-TH16X100D31L P.242 | | | | | | | | |
| | | | | | FA-TH16X100A31 P.243 | | | | | | | | |
| | | | 100VAC, 8mA | 2-wire type | FA-TH16X100A31L P.244 | | | | | | | | |
| FA-TH16X200A31 P.245 | | | | | | | | | | | | | |
| 200VAC, 7.5mA | 2-wire type | FA-TH16X200A31L P.246 | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| NZ2GFCF1-32D | Positive common | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1S32XY P.127 | FA-CBL**FMH FA-FCBL**FMH | P.185 P.186 | | | | |
| | | | | | | 1-wire type | FA-TB32XY P.132 | | | | | | |
| | | | Screw | | | | | | 1-wire type | FA-TBS32XY P.133 | FA-CBL**FMH FA-FCBL**FMH FA-CBL**MMH (for distributed installation) | P.185 P.186 P.171 | |
| | | | | | | | | | 1-row terminal block | FA-TB1L32XY P.133 | | | |
| | | | | | | | | | LED | FA-TB32XYL P.134 | | | |
| | | | | | | | | | 3-row terminal block | FA-TB32XYN3 P.135 | | | |
| | | | | | | | | | Distributed 8-point (0 to 7) | 3-wire type | | | FA-TB8XY1 P.138 |
| | | | | | | | | | | | | | FA-TB8XY2 P.138 |
| | | | | | | | | | | | | | FA-TB8XY3 P.138 |
| | | | | | | | | | | | | | FA-TB8XY4 P.138 |
| | | | | | | | | | Distributed 8-point (8 to F) | 3-wire type | | | FA-TB8XY1 P.138 |
| | | | | | | | | | | | | | FA-TB8XY2 P.138 |
| | | | FA-TB8XY3 P.138 | | | | | | | | | | |
| | | | FA-TB8XY4 P.138 | | | | | | | | | | |
| | | | Distributed 8-point (10 to 17) | 3-wire type | FA-TB8XY1 P.138 | | | | | | | | |
| | | | | | FA-TB8XY2 P.138 | | | | | | | | |
| | | | | | FA-TB8XY3 P.138 | | | | | | | | |
| | | | | | FA-TB8XY4 P.138 | | | | | | | | |
| | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-TB8XY1 P.138 | | | | | | | | |
| | | | | | FA-TB8XY2 P.138 | | | | | | | | |
| | | | | | FA-TB8XY3 P.138 | | | | | | | | |
| | | | | | FA-TB8XY4 P.138 | | | | | | | | |
| | | | Distributed 16-point (0 to F) | 2-wire type | FA-TB16XY1N P.137 | | | | | | | | |
| | | | | | FA-TB16XY2N P.137 | | | | | | | | |
| Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 P.139 | | | | | | | | | | | |
| | | FA-TB16XY2 P.139 | | | | | | | | | | | |
| | | Distributed 16-point (10 to 1F) | | | 3-wire type | FA-CB8XY1 P.146 | | | | | | | |
| | | | | | | FA-CB8XY2 P.146 | | | | | | | |
| Distributed 8-point (0 to 7) | 3-wire type | FA-CB8XY3 P.146 | | | | | | | | | | | |
| | | FA-CB8XY4 P.146 | | | | | | | | | | | |
| Distributed 8-point (8 to F) | 3-wire type | FA-CB8XY1 P.146 | | | | | | | | | | | |
| | | FA-CB8XY2 P.146 | | | | | | | | | | | |
| Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY3 P.146 | | | | | | | | | | | |
| | | FA-CB8XY4 P.146 | | | | | | | | | | | |
| Distributed 8-point (18 to 1F) | 3-wire type | FA-CB16XY1 P.147 | | | | | | | | | | | |
| | | FA-CB16XY2 P.147 | | | | | | | | | | | |
| e-CON | 3-wire type | FA-LEB32XY P.150 | | | | | | | | | | | |
| | | FA-LEB32XY-3 P.150 | | | | | | | | | | | |
| FA-LEB32XY-3A P.150 | 3-wire type | FA-CBL**FMH P.185 | | | | | | | | | | | |
| | | FA-FCBL**FMH P.186 | | | | | | | | | | | |
| NZ2GFCF1-32D | Positive common | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY P.130 | FA-CBL**FM2H FA-CBL**FM2LH | P.172 P.173 | | | | |
| | | | | | | 1-wire type | FA-TB16XY P.132 | | | | | | |
| | | | Screw | | | | | | 2-wire type | FA-TB1L16XYN P.134 | FA-CBL**FM2LH | P.173 | |
| | | | | | | | | | 1-row terminal block | FA-TB16XYPN P.135 | | | |
| | | | | | | | | | 3-row terminal block | FA-TB16XYPN3 P.136 | | | |
| | | | | | | | | | | FA-LEB16XY P.149 | | | |
| | | | e-CON | | | | | | 3-wire type | FA-LEB16XY-D P.149 | FA-CBL**FM2LH | P.172 P.173 | |
| | | | | | | | | | DIN rail installation only | | | | |
| NZ2GF2B1N1-16D NZ2GF2B1-32D | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.283 P.236 FA1-TH8X2SC20S1E Mountable module ▶ P.283 P.236 | FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH20 (for distributed installation) | P.172 P.173 P.174 | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | | | | | | |
| | | | | | | | FA1-TH8X24RA1L20S1E P.232 | | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E P.234 | | | | | | |
| | | | | | | | FA1-TH4X24RA1H20S1E P.230 | | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E P.232 | | | | | | |
| | | | FA1-TH16X24RA1H20S1E P.234 | | | | | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S P.238 | | | | | | |
| | | | | | | | FA-TH16X24D31 P.239 | | | | | | |
| | | | | 24VDC, 10mA | 2-wire type | FA-TH16X24D31L P.240 | | | | | | | |
| | | | | | | FA-TH16X48D31L P.241 | | | | | | | |
| | | | | 48VDC, 5mA | 2-wire type | FA-TH16X100D31L P.242 | | | | | | | |
| | | | | | | FA-TH16X100A31 P.243 | | | | | | | |
| | | | 100VDC, 2.5mA | 2-wire type | FA-TH16X100A31L P.244 | | | | | | | | |
| FA-TH16X200A31 P.245 | | | | | | | | | | | | | |
| 100VAC, 8mA | 2-wire type | FA-TH16X200A31L P.246 | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 200VAC, 7.5mA | 2-wire type | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P P.144 | FA-CBL**FMH-M P.188 | | | | | | | |
| | | Discrete cable | | | | FA-BCBL**FFBL P.159 FA-BCBL**FFBLY P.159 FA-BCBL**FFBLR P.159 | | | | | | | |

For programmable controllers, HMIs, and CNCs

Selection chart

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | | |
|--------------------------------------|----------------------------|--------------------------------------------|---------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|-------------------------------|-----------------------------|-----------------------------|-------------------------------|----------------|-------|
| NZ2GF2B1N1-16T NZ2GF2B1-32T | Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | |
| | | | | | | | FA1-TH8Y2SC20S1E | P.250 | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | | |
| | | | | FA1-TH16Y2SC20S1E | P.259 | | | | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | | | |
| | | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | | | |
| | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | | | |
| | | | Screw | N/O contact relay | Module replaceable | 1-wire type | FA-TH16YRA11 | P.260 | | | | | |
| | | | | | | 2-wire type | FA-TH16YRA21 | P.261 | | | | | |
| | | | | | | Independent | FA-TH16YRA20 | P.262 | | | | | |
| | | Module mixing possible | | | 1-wire type | FA-TH16YRA11S | P.263 | | | | | | |
| | | | | | 2-wire type | FA-TH16YRA21S | P.264 | | | | | | |
| | | | | | Independent | FA-TH16YRA20S | P.265 | | | | | | |
| | | N/C contact relay | | Module mixing possible | Independent | FA-TH16YRA20SL | P.267 | | | | | | |
| | | | | | | FA-TH16YRAB20SL | P.268 | | | | | | |
| | | | | | | FA-TH16YRAC20S | P.269 | | | | | | |
| | | | | C/O contact relay | Module replaceable | Independent | 1-wire type | FA-TH16YSR11S | | | P.270 | | |
| | | | | | | | 2-wire type | FA-TH16YSR21S | | | P.271 | | |
| | | | | | | | Independent | FA-TH16YSR20S | | | P.272 | | |
| | | Triac, 1.0A | Module replaceable | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | | | | | |
| | | | | | 2-wire type | FA-TH16YTL21S | P.274 | | | | | | |
| | | | | | Independent | FA-TH16YTH11S | P.275 | | | | | | |
| | | Transistor, 1.0A (sink) | Module replaceable | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | | | |
| | | | | | 2-wire type | FA-TH16YTR20 | P.278 | | | | | | |
| | | | | | Independent | FA-TH16YTR20 | P.278 | | | | | | |
| | | Transistor, 1.0A (source) | Module replaceable | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | | | |
| 2-wire type | FA-TH16YTR20 | | | | P.278 | | | | | | | | |
| Independent | FA-TH16YTR20 | | | | P.278 | | | | | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | | | | | |
| | | | 2-wire type | FA-TH16YTR20 | P.278 | | | | | | | | |
| | | | Independent | FA-TH16YTR20 | P.278 | | | | | | | | |
| Transistor, 2.0A | Module mixing possible | Independent | 1-wire type | FA-TH16YTR20S | P.277 | | | | | | | | |
| | | | 2-wire type | FA-TH16YTR20 | P.278 | | | | | | | | |
| | | | Independent | FA-TH16YTR20 | P.278 | | | | | | | | |
| NZ2GF2B1-32T | Sink output | Junction terminal block | Spring clamp | | | | 1-wire type | FA1-TE1S32XY | P.126 | FA-CBL**FMH FA-FCBL**FMH | P.185 P.186 | | |
| | | | | | | | 1-wire type | FA1-TE1S32XY | P.127 | | | | |
| | | | | | | | Screw | Small-size terminal block | 1-wire type | | | FA-TB32XY | P.132 |
| | | | | | | | | | | | | FA-TBS32XY | P.133 |
| | | | | | | | | | | | | FA-TB1L32XY | P.133 |
| | | | | | | | Screw | LED | 1-wire type | | | FA-TB32XYL | P.134 |
| | | | 3-row terminal block | 2-wire type | FA-TB32XYP3 | P.135 | | | | | | | |
| | | | | | Distributed 8-point (0 to 7) | 3-wire type | | | | | | FA-TB8XY1 | P.138 |
| | | | | | | | | | | | | FA-TB8XY2 | P.138 |
| | | | FA-TB8XY3 | P.138 | | | | | | | | | |
| | | | Screw | Distributed 8-point (10 to 17) | 3-wire type | FA-TB8XY4 | | | | | | P.138 | |
| | | | | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-TB16XY1 | P.139 | | | | |
| | | | | | | | | FA-TB16XY2 | P.139 | | | | |
| | | | | | | | | Distributed 16-point (0 to 7) | 3-wire type | | | FA-CB8XY1 | P.146 |
| | | | | | | FA-CB8XY2 | P.146 | | | | | | |
| | | | | | | FA-CB8XY3 | P.146 | | | | | | |
| | | | One-touch connector | Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY4 | P.146 | | | | | | |
| | | | | | | Distributed 8-point (18 to 1F) | 3-wire type | FA-CB16XY1 | P.147 | | | | |
| | | FA-CB16XY2 | | | | | | P.147 | | | | | |
| | | Distributed 16-point (0 to 7) | | | | | | 3-wire type | FA-LEB32XY | P.150 | | | |
| | | | | | | FA-LEB32XY-3 | P.150 | | | | | | |
| | | | | | | FA-LEB32XY-3A | P.150 | | | | | | |
| | | e-CON | Distributed 16-point (10 to 1F) | 3-wire type | FA-LEB32XY | P.150 | | | | | | | |
| | | | | | FA-LEB32XY-3 | P.150 | | | | | | | |
| | | | | | FA-LEB32XY-3A | P.150 | | | | | | | |
| | | | | | Junction terminal block | Spring clamp | | 1-wire type | FA1-TE1SV16XY | P.130 | FA-CBL**FM2H FA-CBL**FM2LH | P.172 P.173 | |
| | | | | | | | | 1-wire type | FA-TB16XY | P.132 | | | |
| | | | | | | | | 2-wire type | FA-TB1L16XYP | P.134 | | | |
| Screw | 1-row terminal block | 2-wire type | FA-TB16XYPN | P.135 | | | | | | | | | |
| | | | 3-row terminal block | 3-wire type | | FA-TB16XYPN3 | P.136 | | | | | | |
| | | | | | | FA-LEB16XY | P.149 | | | | | | |
| e-CON | DIN rail installation only | 3-wire type | FA-LEB16XY-D | P.149 | | | | | | | | | |
| | | | FA-LEB16XY-D | P.149 | | | | | | | | | |

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | |
|--------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|------------------------|---------------------|--------------------------|---------------------------------------------------|--------------------------------------------------------------------------------|-------------------------|----------------|-------|
| NZ2GFCF1-32T | Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**FM2H FA-CBL**FM2LH FA-CBL**MMH (for distributed installation) | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | |
| | | | | | | | FA1-TH8Y2SC20S1E | P.250 | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | | FA1-TH16Y2SC20S1E | P.259 | | | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y2RA20S1E | P.254 | | | | |
| | | | | | | | FA1-TH16Y1SR20S1E | P.256 | | | | |
| | | | | | | | FA1-TH16Y1TR20S1E | P.258 | | | | |
| | | | Screw | N/O contact relay | Module replaceable | 1-wire type | FA-TH16YRA11 | P.260 | | | | |
| | | | | | | 2-wire type | FA-TH16YRA21 | P.261 | | | | |
| | | | | | | Independent | FA-TH16YRA20 | P.262 | | | | |
| | | | | Module mixing possible | Independent | 1-wire type | FA-TH16YRA11S | P.263 | | | | |
| | | | | | | 2-wire type | FA-TH16YRA21S | P.264 | | | | |
| | | | | | | Independent | FA-TH16YRA20S | P.265 | | | | |
| | | | | N/C contact relay | Module mixing possible | Independent | FA-TH16YRA20SL | P.268 | | | | |
| | | | | | | | C/O contact relay | Module replaceable | | Independent | FA-TH16YRAC20S | P.269 |
| | | | | | | | Triac, 1.0A | Module replaceable | | 1-wire type | FA-TH16YSR11S | P.270 |
| | 2-wire type | FA-TH16YSR21S | P.271 | | | | | | | | | |
| | Independent | FA-TH16YSR20S | P.272 | | | | | | | | | |
| Transistor, 1.0A (sink) | Module replaceable | 1-wire type | FA-TH16YTL11S | P.273 | | | | | | | | |
| | | 2-wire type | FA-TH16YTL21S | P.274 | | | | | | | | |
| | | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-TH16YTH11S | P.275 | | | | | | |
| Module mixing possible | Independent | | | FA-TH16YTR20S | P.277 | | | | | | | |
| | Independent | | | FA-TH16Y2TR20 | P.278 | | | | | | | |
| Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-M | P.188 | | | | |
| | Discrete cable | | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.159 P.159 P.159 | | | |
| NZ2GF2B1-32DT | I/O combined | For the input side, refer to the specifications of the NZ2GF2B1N1-16D. For the output side, refer to the specifications of the NZ2GF2B1N1-16T. | | | | | | | | | | |
| NZ2GFCF1-32DT | I/O combined | Junction terminal block | Screw | | 1-wire type | FA-TB16X16Y* | P.132 | FA-CBL**FMH FA-FCBL**FMH | P.185 P.186 | | | |
| | | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-M | P.188 | | | |
| | | Discrete cable | | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.159 P.159 P.159 | | |
| NZ2GF2B1N1-16TE NZ2GF2B1-32TE | Source output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | | | |
| FA1-TH1E16Y1SR20S1E | P.257 | | | | | | | | | | | |
| FA1-TH1E16Y1TR20S1E | P.252 | | | | | | | | | | | |
| Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | | | |
| | | | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | | | | |
| | | | | | Independent | FA-THE16YTR20S | P.279 | | | | | |
| NZ2GF2B1-32DTE | I/O combined | The input side cannot be used. For the output side, refer to the specifications of the NZ2GF2B1N1-16TE. | | | | | | | | | | |

*: Positive common only for input

CC-Link IE Field <I/O modules with safety functions>

| Programmable controller module model | | Unit type | | Model | | Connection cable | |
|-------------------------------------------------------------------------------|----------------|------------------------------------|--|-------|--|---------------------|-------|
| NZ2GFSS2-8D NZ2GFSS2-32D NZ2GFSS2-8TE NZ2GFSS2-16DTE NZ2EXSS2-8TE | Discrete cable | 0.75mm ² type (8A max.) | | | | FA1-CB3L07SQ**E1F34 | P.156 |
| | | 0.3mm ² type (4A max.) | | | | FA1-CB3L03SQ**E1F34 | P.156 |

CC-Link IE Field <Analog modules>

| Programmable controller module model | Unit type | | | Model | | Connection cable | | | | | | |
|--------------------------------------|---------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------|------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------|--------------------------------------------------|
| | | | | Mountable module | | | | | | | | |
| Analog input module | NZ2GF2BN-60AD4 | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter | FA-CBL**ATF P.304 | | | | |
| | | | | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | Voltage input 0 to 5V FA-ATSVM1XV05 P.297 1 to 5V FA-ATSVM1XV15 P.297 -10 to 10V FA-ATSVM1XV1010 P.297 | | | | | |
| | | | | | | 8-channel installation base unit FA-ATB8XTB P.296 | Current input 4 to 20mA FA-ATSVM1XA420 P.298 Distributor 4 to 20mA FA-ATSVM1XD P.299 | | | | | |
| | | | Screw | | | Input to the programmable controller: 4 to 20mA | Installation base unit FA-ATKB8XTB + Adapter FA-ATKAA8XM P.295 | | RTD input -200 to +650°C FA-ATSVM1XRPT P.300 0 to +100°C FA-ATSVM1XRPT0010 P.300 0 to +200°C FA-ATSVM1XRPT0020 P.300 -200 to +600°C FA-ATSVM1XRJPT P.300 | | | |
| | | | | | | | Thermocouple input +600 to +1700°C FA-ATSVM1XTB P.301 0 to +1600°C FA-ATSVM1XTR P.301 0 to +1600°C FA-ATSVM1XTS P.301 -200 to +1200°C FA-ATSVM1XTK P.301 0 to +400°C FA-ATSVM1XTK0040 P.301 0 to +600°C FA-ATSVM1XTK0060 P.301 0 to +800°C FA-ATSVM1XTK0080 P.301 -200 to +900°C FA-ATSVM1XTE P.301 -40 to +750°C FA-ATSVM1XTJ P.301 -200 to +350°C FA-ATSVM1XTT P.301 -200 to +1250°C FA-ATSVM1XTN P.301 Pass-through module FA-ATFTMXY P.316 Dummy module FA-ATNDM5 P.317 | | FA-CBL**ATF P.304 | | | |
| | | | | | | | | | | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V |
| | 4-channel installation base unit FA1-AT1B4X1TB P.292 | | | | | | | | | | | |
| | 8-channel installation base unit FA-ATB8XTB P.296 | | | | | | | | | | | |
| | Screw | Input to the programmable controller: 4 to 20mA | Installation base unit FA-ATKB8XTB + Adapter FA-ATKAA8XM P.295 | | | | | | | | | |
| | | | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | | Output modules for analog signal converter (The programmable controller outputs voltage.) Voltage output 0 to 5V FA-ATSVM1YV05 P.311 0 to 10V FA-ATSVM1YV010 P.311 1 to 5V FA-ATSVM1YV15 P.311 -10 to 10V FA-ATSVM1YV1010 P.311 | | FA-CBL**ATYF P.315 | | |
| | | | | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | Current output 0 to 20mA FA-ATSVM1YA020 P.312 4 to 20mA FA-ATSVM1YA420 P.312 | | | | | |
| | 8-channel installation base unit FA-ATB8YTB P.308 | | | | | Pass-through module FA-ATFTMXY P.316 Dummy module FA-ATNDM5 P.317 | | | | | | |
| Screw | Output from the programmable controller: 4 to 20mA | | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | | | Output modules for analog signal converter (The programmable controller outputs current.) Voltage output 0 to 5V FA-ATSAM1YV05 P.309 0 to 10V FA-ATSAM1YV010 P.309 1 to 5V FA-ATSAM1YV15 P.309 -10 to 10V FA-ATSAM1YV1010 P.309 | FA-CBL**ATYF P.315 | | | | | |
| | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | | | Current output 0 to 20mA FA-ATSAM1YA020 P.310 4 to 20mA FA-ATSAM1YA420 P.310 | | | | | | |
| | | 8-channel installation base unit FA-ATB8YTB P.308 | Pass-through module FA-ATFTMXY P.316 Dummy module FA-ATNDM5 P.317 | | | | | | | | | |
| NZ2GFCE-60DA8 | | Analog signal converter | Screw | Module selectable type | Input to the programmable controller: 1 to 5V | 8-channel installation base unit FA-ATB8YTB P.308 | | Output modules for analog signal converter (The programmable controller outputs voltage.) | FA-CBL**ATYF P.315 | | | |
| | | | | | Input to the programmable controller: 4 to 20mA | 8-channel installation base unit FA-ATB8YTB P.308 | | Output modules for analog signal converter (The programmable controller outputs current.) | FA-CBL**ATYF P.315 | | | |
| NZ2GN2S-60AD4 | | Discrete cable | Shielded | | | | | | FA1-CB2L**S1B2-4 P.195 | | | |

CC-Link <I/O modules>

| Programmable controller module model | | Unit type | | | | Model | Connection cable | |
|-------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|---------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| AJ65SBTB1-16D AJ65SBTB1-16D1 AJ65SBTB3-16D AJ65SBTB3-16KD AJ65SBTB1-32D AJ65SBTB1-32D1 AJ65SBTB1-32KD | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E P.236 Mountable module ▶ P.283 FA1-TH8X2SC20S1E P.236 Mountable module ▶ P.283 | FA-CBL**M20 P.168 FA-CBL**YM20 P.169 FA-CBL**MMH20 P.174 (for distributed installation) |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | |
| | | | | | | | FA1-TH8X24RA1L20S1E P.232 | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E P.234 | | |
| | | | | | | FA1-TH4X24RA1H20S1E P.230 | | |
| | | | Screw | Module mixing possible | Independent | FA1-TH16X24RA1H20S1E P.232 | | |
| | | FA1-TH16X24RA1H20S1E P.234 | | | | | | |
| | | 24VDC, N/O contact relay | | | | Module mixing possible | Independent | FA-TH16XRA20S P.238 |
| | | 24VDC, 10mA | | | | 2-wire type | FA-TH16X24D31 P.239 | |
| | | 48VDC, 5mA | | | | 2-wire type | FA-TH16X24D31L P.240 | |
| | | 100VDC, 2.5mA | | | | 2-wire type | FA-TH16X48D31L P.241 | |
| | | Screw | Module mixing possible | Independent | FA-TH16X24D31L P.240 | | | |
| 100VAC, 8mA | 2-wire type | | | | FA-TH16X100A31 P.243 | | | |
| 200VAC, 7.5mA | 2-wire type | | | | FA-TH16X100A31L P.244 | | | |
| | | | | | FA-TH16X200A31 P.245 | | | |
| 200VAC, 7.5mA | 2-wire type | | | | FA-TH16X200A31L P.246 | | | |
| | | | | | FA-TH16X200A31L P.246 | | | |
| AJ65VBTS3-16D | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E P.236 Mountable module ▶ P.283 FA1-TH8X2SC20S1E P.236 Mountable module ▶ P.283 | FA-CBL**M20 P.168 FA-CBL**MMH20 P.174 (for distributed installation) |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH4X24RA1L20S1E P.230 | |
| | | | | | | | FA1-TH8X24RA1L20S1E P.232 | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH16X24RA1L20S1E P.234 | | |
| | | | | | | FA1-TH4X24RA1H20S1E P.230 | | |
| | | | Screw | Module mixing possible | Independent | FA1-TH8X24RA1H20S1E P.232 | | |
| | | FA1-TH16X24RA1H20S1E P.234 | | | | | | |
| | | 24VDC, N/O contact relay | | | | Module mixing possible | Independent | FA-TH16XRA20S P.238 |
| | | 24VDC, 10mA | | | | 2-wire type | FA-TH16X24D31 P.239 | |
| | | 48VDC, 5mA | | | | 2-wire type | FA-TH16X24D31L P.240 | |
| | | 100VDC, 2.5mA | | | | 2-wire type | FA-TH16X48D31L P.241 | |
| | | Screw | Module mixing possible | Independent | FA-TH16X24D31L P.240 | | | |
| 100VAC, 8mA | 2-wire type | | | | FA-TH16X100A31 P.243 | | | |
| 200VAC, 7.5mA | 2-wire type | | | | FA-TH16X100A31L P.244 | | | |
| | | | | | FA-TH16X200A31 P.245 | | | |
| 200VAC, 7.5mA | 2-wire type | | | | FA-TH16X200A31L P.246 | | | |
| | | | | | FA-TH16X200A31L P.246 | | | |
| AJ65SBTCF1-32D | Positive common | Junction terminal block | Spring clamp | | | 1-wire type | FA1-TE1SV16XY P.130 | FA-CBL**FMH P.185 FA-FCBL**FMH P.186 |
| | | | | | | 1-wire type | FA1-TE1S32XY P.127 | |
| | | | | | | 1-wire type | FA-TB32XY P.132 | |
| | | | | | | 1-wire type | FA-TBS32XY P.133 | |
| | | | | | | 1-wire type | FA-TB1L32XY P.133 | |
| | | | | | | 1-wire type | FA-TB32XYL P.134 | |
| | | | Screw | Small-size terminal block | 1-wire type | 1-row terminal block | FA-TB32XY P.132 | |
| | | | | | | LED | FA-TB32XYL P.134 | |
| | | | | | | 3-row terminal block | FA-TB32XYN3 P.135 | |
| | | | | | | Distributed 8-point (0 to 7) | FA-TB8XY1 P.138 | |
| | | | | | | Distributed 8-point (8 to F) | FA-TB8XY2 P.138 | |
| | | | | | | Distributed 8-point (10 to 17) | FA-TB8XY3 P.138 | |
| | | Screw | 1-row terminal block | 3-wire type | Distributed 8-point (18 to 1F) | FA-TB8XY4 P.138 | | |
| | | | | | Distributed 16-point (0 to F) | FA-TB16XY1N P.137 | | |
| | | | | | Distributed 16-point (10 to 1F) | FA-TB16XY2N P.137 | | |
| | | | | | Distributed 16-point (0 to F) | FA-TB16XY1 P.139 | | |
| | | | | | Distributed 16-point (10 to 1F) | FA-TB16XY2 P.139 | | |
| | | | | | Distributed 16-point (0 to F) | FA-TB16XY2 P.139 | | |
| | | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | Distributed 8-point (8 to F) | FA-CB8XY1 P.146 | | |
| | | | | | Distributed 8-point (10 to 17) | FA-CB8XY2 P.146 | | |
| | | | | | Distributed 8-point (18 to 1F) | FA-CB8XY3 P.146 | | |
| | | | | | Distributed 16-point (0 to F) | FA-CB8XY4 P.146 | | |
| | | | | | Distributed 16-point (10 to 1F) | FA-CB16XY1 P.147 | | |
| | | | | | Distributed 16-point (10 to 1F) | FA-CB16XY2 P.147 | | |
| e-CON | | 3-wire type | FA-LEB32XY P.150 | | | | | |
| | | | FA-LEB32XY-3 P.150 | | | | | |
| | | | FA-LEB32XY-3A P.150 | | | | | |
| Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY P.130 | | | | | |
| | | | 1-wire type | FA-TB16XY P.132 | | | | |
| | | | 2-wire type | FA-TB1L16XYN P.134 | | | | |
| | Screw | 1-row terminal block | 3-wire type | FA-TB16XYPN P.135 | | | | |
| | | | | 3-row terminal block | FA-TB16XYPN3 P.136 | | | |
| | | | | 3-wire type | FA-LEB16XY P.149 | | | |
| e-CON | | 3-wire type | FA-LEB16XY-D P.149 | | | | | |
| | | | 3-wire type | FA-LEB16XY-D P.149 | | | | |

For programmable controllers, HMIs, and CNCs

Selection chart

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | | | | | | |
|-------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|------------------------|--------------------------|---------------------------------------------------|-------------------------|--------------------------------------------------------------------------------|-------------------------|-------------------------------|--------------------------|-------------------|-------|
| AJ65SBTCF1-32D | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E | P.236 | FA-CBL**M20 FA-CBL**YM20 FA-CBL**MMH20 (for distributed installation) | P.168 P.169 P.174 | | | | |
| | | | | | | | Mountable module ▶ P.283 | | | | | | | |
| | | | | FA1-TH8X2SC20S1E | | P.236 | Mountable module ▶ P.283 | | | | | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | | FA1-TH4X24RA1L20S1E | | | P.230 | | | |
| | | | | | | | | FA1-TH8X24RA1L20S1E | | | P.232 | | | |
| | | | FA1-TH16X24RA1L20S1E | | | | P.234 | | | | | | | |
| | | | 24VDC, N/O contact relay (negative common) | Module mixing possible | Independent | FA1-TH4X24RA1H20S1E | P.230 | | | | | | | |
| | | | FA1-TH8X24RA1H20S1E | | | P.232 | | | | | | | | |
| | | | FA1-TH16X24RA1H20S1E | | | P.234 | | | | | | | | |
| | | | Screw | Module mixing possible | Independent | 24VDC, N/O contact relay | FA-TH16XRA20S | P.238 | | | FA-CBL**FM2H FA-CBL**FM2LH | P.172 P.173 | | |
| | 24VDC, 10mA | FA-TH16X24D31 | | | | P.239 | | | | | | | | |
| | 48VDC, 5mA | FA-TH16X24D31L | | | | P.240 | | | | | | | | |
| | 100VDC, 2.5mA | FA-TH16X48D31L | | | | P.241 | | | | | | | | |
| | 100VAC, 8mA | FA-TH16X100D31L | | | | P.242 | | | | | | | | |
| 200VAC, 7.5mA | FA-TH16X100A31 | P.243 | | | | | | | | | | | | |
| Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-M | P.188 | | | | | | |
| | | | | | Discrete cable | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR | P.159 P.159 P.159 | | | | | | |
| AJ65SBBT1-16T AJ65SBBT1-16T1 AJ65SBBT2-16T AJ65SBBT2-16T1 AJ65SBBT1-32T AJ65SBBT1-32T1 | Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 | | | | |
| | | | | | | | Mountable module ▶ P.284 | | | | | | | |
| | | | | | | | FA1-TH8Y2SC20S1E | | | | P.250 | Mountable module ▶ P.284 | | |
| | | | | | | | N/O contact relay | Module mixing possible | | | Independent | | FA1-TH16Y2SC20S1E | P.259 |
| | | | | | | | | | | | | | FA1-TH16Y2RA20S1E | P.254 |
| | | | | FA1-TH16Y1SR20S1E | P.256 | | | | | | | | | |
| | | | | Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y1TR20S1E | P.258 | | | | | | |
| | | | | Transistor, 1.0A | | | Independent | FA-TH16YRA11 | | | P.260 | | | |
| | | | | N/O contact relay | | | | Module replaceable | | | 1-wire type | FA-TH16YRA21 | P.261 | |
| | | | | | 2-wire type | FA-TH16YRA20 | | | | | P.262 | | | |
| | | | Independent | | FA-TH16YRA11S | P.263 | | | | | | | | |
| | | | Module replaceable | Module mixing possible | Independent | 1-wire type | FA-TH16YRA21S | P.264 | | | | | | |
| | | | | | | 2-wire type | FA-TH16YRA20S | P.265 | | | | | | |
| | | | | | | Independent | FA-TH16YRA20SL | P.267 | | | | | | |
| | | | N/C contact relay | Module mixing possible | Independent | FA-TH16YRAB20SL | P.268 | | | | | | | |
| | | | C/O contact relay | | | Module replaceable | Independent | FA-TH16YRAC20S | | | P.269 | | | |
| | | | Triac, 1.0A | | | | | Module replaceable | | | 1-wire type | FA-TH16YSR11S | P.270 | |
| | | | | 2-wire type | FA-TH16YSR21S | | | | | | P.271 | | | |
| | | | | Independent | FA-TH16YSR20S | P.272 | | | | | | | | |
| | | | Transistor, 1.0A (sink) | Module replaceable | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | | | | | |
| 2-wire type | FA-TH16YTL21S | P.274 | | | | | | | | | | | | |
| 1-wire type | FA-TH16YTH11S | P.275 | | | | | | | | | | | | |
| Transistor, 1.0A (source) | Module replaceable | Independent | FA-TH16YTR20S | P.277 | | | | | | | | | | |
| | | | Module mixing possible | Independent | FA-TH16Y2TR20 | P.278 | | | | | | | | |
| | | | | | Independent | FA-TH16Y2TR20 | P.278 | | | | | | | |
| Screw | Installation base unit | Module selectable type | | | Independent | FA1-TH4Y2SC20S1E | P.248 | FA-CBL**M20 | P.168 | | | | | |
| | | | Mountable module ▶ P.284 | | | | | | | | | | | |
| | | | FA1-TH8Y2SC20S1E | | | P.250 | Mountable module ▶ P.284 | | | | | | | |
| | | | N/O contact relay | Module mixing possible | | Independent | | | | FA1-TH16Y2SC20S1E | P.259 | | | |
| | | | | | | | | | | FA1-TH16Y2RA20S1E | P.254 | | | |
| | FA1-TH16Y1SR20S1E | P.256 | | | | | | | | | | | | |
| | Triac, 1.0A | Module mixing possible | Independent | FA1-TH16Y1TR20S1E | P.258 | | | | | | | | | |
| | N/O contact relay | | | Module replaceable | Independent | FA-TH16YRA11 | P.260 | | | | | | | |
| | | | | | | 1-wire type | FA-TH16YRA21 | | | P.261 | | | | |
| | | 2-wire type | FA-TH16YRA20 | | | P.262 | | | | | | | | |
| Module replaceable | Module mixing possible | Independent | 1-wire type | FA-TH16YRA11S | P.263 | | | | | | | | | |
| | | | 2-wire type | FA-TH16YRA21S | P.264 | | | | | | | | | |
| | | | Independent | FA-TH16YRA20S | P.265 | | | | | | | | | |
| Module mixing possible | Module replaceable | Independent | FA-TH16YRA20SL | P.267 | | | | | | | | | | |
| | | | N/C contact relay | Module mixing possible | Independent | FA-TH16YRAB20SL | P.268 | | | | | | | |
| | | | C/O contact relay | | | Module replaceable | Independent | FA-TH16YRAC20S | P.269 | | | | | |
| Triac, 1.0A | Module replaceable | 1-wire type | FA-TH16YSR11S | | | | | P.270 | | | | | | |
| | | 2-wire type | FA-TH16YSR21S | P.271 | | | | | | | | | | |
| | | Independent | FA-TH16YSR20S | P.272 | | | | | | | | | | |
| Transistor, 1.0A (sink) | Module replaceable | Independent | 1-wire type | FA-TH16YTL11S | P.273 | | | | | | | | | |
| | | | 2-wire type | FA-TH16YTL21S | P.274 | | | | | | | | | |
| | | | 1-wire type | FA-TH16YTH11S | P.275 | | | | | | | | | |
| Transistor, 1.0A (source) | Module replaceable | Independent | FA-TH16YTR20S | P.277 | | | | | | | | | | |
| | | | Module mixing possible | Independent | FA-TH16Y2TR20 | P.278 | | | | | | | | |
| | | | | | Independent | FA-TH16Y2TR20 | P.278 | | | | | | | |

| Programmable controller module model | Unit type | | | | Model | Connection cable | | | | | |
|--------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------|--------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------|------------------------|------------------------|---------------------|-------------------------|
| AJ65SBTCF1-32T AJ65BTC1-32T | Sink output | Junction terminal block | Spring clamp | 1-wire type | FA1-TE5V32XY P.126 | FA-CBL**FMH FA-FCBL**FMH P.185 P.186 | | | | | |
| | | | | 1-wire type | FA1-TE1S32XY P.127 | | | | | | |
| | | | | 1-wire type | FA-TB32XY P.132 | | | | | | |
| | | | Screw | Small-size terminal block | 1-wire type | | FA-TBS32XY P.133 | | | | |
| | | | | | 1-wire type | | FA-TB1L32XY P.133 | | | | |
| | | | | | 1-wire type | | FA-TB32XYL P.134 | | | | |
| | | | | 3-row terminal block | 2-wire type | | FA-TB32XYP3 P.135 | | | | |
| | | | | | 3-wire type | | FA-TB8XY1 P.138 | | | | |
| | | | | | | | FA-TB8XY2 P.138 | | | | |
| | | | Distributed 8-point (0 to 7) | 3-wire type | FA-TB8XY3 P.138 | | | | | | |
| | | | | | FA-TB8XY4 P.138 | | | | | | |
| | | | Distributed 8-point (10 to 17) | 3-wire type | FA-TB8XY1 P.139 | | | | | | |
| | | | | | FA-TB16XY2 P.139 | | | | | | |
| | | | Distributed 16-point (0 to F) | 3-wire type | FA-TB16XY1 P.139 | | | | | | |
| | | | | | FA-TB16XY2 P.139 | | | | | | |
| | | Distributed 16-point (10 to 1F) | 3-wire type | FA-CB8XY1 P.146 | | | | | | | |
| | | | | FA-CB8XY2 P.146 | | | | | | | |
| | | One-touch connector | Distributed 8-point (0 to 7) | 3-wire type | FA-CB8XY3 P.146 | | | | | | |
| | | | | | FA-CB8XY4 P.146 | | | | | | |
| | | | Distributed 8-point (10 to 17) | 3-wire type | FA-CB8XY1 P.147 | | | | | | |
| | | | | | FA-CB16XY2 P.147 | | | | | | |
| | | Distributed 8-point (18 to 1F) | 3-wire type | FA-LEB32XY P.150 | | | | | | | |
| | | | | FA-LEB32XY-3 P.150 | | | | | | | |
| | | Distributed 16-point (0 to F) | 3-wire type | FA-LEB32XY-3A P.150 | | | | | | | |
| | | | | FA-LEB32XY P.150 | | | | | | | |
| | | Distributed 16-point (10 to 1F) | 3-wire type | FA-CB16XY1 P.150 | | | | | | | |
| | | | | FA-CB16XY2 P.150 | | | | | | | |
| | | e-CON | 3-wire type | FA-CBL**FMH P.185 | | | | | | | |
| | | | | FA-FCBL**FMH P.186 | | | | | | | |
| | | Sink output | Junction terminal block | Spring clamp | 1-wire type | FA1-TE1SV16XY P.130 | FA-CBL**FM2H P.172 FA-CBL**FM2LH P.173 | | | | |
| | 1-wire type | | | | FA-TB16XY P.132 | | | | | | |
| | 2-wire type | | | | FA-TB1L16XYP P.134 | | | | | | |
| | Screw | | | 1-row terminal block | 2-wire type | FA-TB16XYPN P.135 | | | | | |
| | | | | | 3-wire type | FA-TB16XYPN3 P.136 | | | | | |
| | 3-row terminal block | | | 3-wire type | FA-LEB16XY P.149 | | | | | | |
| | | | FA-LEB16XY-D P.149 | | | | | | | | |
| | e-CON | | DIN rail installation only | 3-wire type | FA1-TH4Y2SC20S1E P.248 | | | | | | |
| | | | | | Mountable module ▶ P.284 | | | | | | |
| | | | | | FA1-TH8Y2SC20S1E P.250 | | | | | | |
| | Digital signal converter (terminal module) | | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH16Y2SC20S1E P.254 | | | | |
| | | | | | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH16Y1SR20S1E P.256 |
| | | | | | | | | | | | |
| | | | | Transistor, 1.0A | Independent | FA1-TH16YRA11 P.260 | | | | | |
| | | | | | | | N/C contact relay | Module mixing possible | Independent | FA1-TH16YRA21 P.261 | |
| | | C/O contact relay | | Module mixing possible | Independent | FA1-TH16YRA20 P.262 | | | | | |
| Screw | | | N/O contact relay | | | | Module replaceable | 1-wire type | FA1-TH16YRA11S P.263 | | |
| | | Module replaceable | | 2-wire type | FA1-TH16YRA21S P.264 | | | | | | |
| | | | | | | Module mixing possible | | | | Independent | FA1-TH16YRA20S P.265 |
| | | N/C contact relay | Module mixing possible | Independent | FA1-TH16YRA20SL P.267 | | | | | | |
| | | | | | | C/O contact relay | Module replaceable | Independent | FA1-TH16YRAB20SL P.268 | | |
| | | Triac, 1.0A | Module replaceable | 1-wire type | FA1-TH16YSR11S P.270 | | | | | | |
| | | | | | | Module mixing possible | Independent | FA1-TH16YSR21S P.271 | | | |
| | | Transistor, 1.0A (sink) | Module replaceable | 1-wire type | FA1-TH16YSR20S P.272 | | | | | | |
| | | | | | | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA1-TH16YTL11S P.273 | | |
| Transistor, 1.0A | Module mixing possible | Independent | FA1-TH16YTL21S P.274 | | | | | | | | |
| | | | | Transistor, 2.0A | Module mixing possible | Independent | FA1-TH16YTR20S P.277 | | | | |
| Transistor, 2.0A | Module mixing possible | Independent | FA1-TH16YTR20 P.278 | | | | | | | | |
| | | | | Common | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P P.144 | FA-CBL**FMH-M P.188 | |
| Discrete cable | | | | | | FA-BCBL**FFBL P.159 FA-BCBL**FFBLY P.159 FA-BCBL**FFBLR P.159 | | | | | |
| AJ65SBTB1-32DT | I/O combined | For the input side, refer to the specifications of the AJ65SBTB1-16D. For the output side, refer to the specifications of the AJ65SBTB1-16T. | | | | | | | | | |
| AJ65SBTCF1-32DT | I/O combined | Junction terminal block | Screw | 1-wire type | FA-TB16X16Y* P.132 | FA-CBL**FMH P.185 FA-FCBL**FMH P.186 | | | | | |
| | | | | 1-wire type | FA-TBS40P P.144 | FA-CBL**FMH-M P.188 | | | | | |
| | | Discrete cable | | | | FA-BCBL**FFBL P.159 FA-BCBL**FFBLY P.159 FA-BCBL**FFBLR P.159 | | | | | |
| AJ65VBTCF1-32DT1 | I/O combined | Junction terminal block | Screw | 1-wire type | FA-TB16X16Y* P.132 | FA-CBL**FMV P.161 | | | | | |
| | | | | 1-wire type | FA-TBS40P P.144 | FA-CBL**FMV-M P.187 | | | | | |
| | | Discrete cable | | | | FA-CBL**FV P.158 FA-BCBL**FFBL P.159 FA-BCBL**FFBLY P.159 FA-BCBL**FFBLR P.159 | | | | | |

*: Positive common only for input

| Programmable controller module model | | Unit type | | | | | Model | | Connection cable | |
|--------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------|-------------------|---------------------------|------------------------|---------------------|--------------------------|-------|-----------------------------|----------------|
| AJ65SBTB1-16TE AJ65SBTB1-32TE1 | Source output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E | P.248 | FA-CBL**M20 FA-CBL**YM20 | P.168 P.169 |
| | | | | | | | Mountable module ▶ P.284 | | | |
| | | | | | | | FA1-TH1E8Y2SC20S1E | P.250 | | |
| | | | | Mountable module ▶ P.284 | | | | | | |
| | | | | FA1-TH1E16Y2SC20S1E | P.253 | | | | | |
| | | | | Mountable module ▶ P.284 | | | | | | |
| | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S1E | P.255 | | | |
| | | | | | | FA1-TH1E16Y1SR20S1E | P.257 | | | |
| | | | | | | FA1-TH1E16Y1TR20S1E | P.252 | | | |
| Screw | N/O contact relay | Module mixing possible | Independent | FA1-TH1E16Y2RA20S | P.266 | | | | | |
| | | | | Transistor, 1.0A (source) | Module replaceable | 1-wire type | FA-THE16YTH11S | P.276 | | |
| | | | | Transistor, 1.0A | Module mixing possible | Independent | FA-THE16YTR20S | P.279 | | |
| AJ65SBTB1-32DTE1 | I/O combined | The input side cannot be used. For the output side, refer to the specifications of the AJ65SBTB1-16TE. | | | | | | | | |

CC-Link <Analog modules>

| Programmable controller module type | Programmable controller module model | Unit type | | | | | Model | | | | Connection cable |
|-------------------------------------|--------------------------------------|-------------------------|-----------------|------------------------|-------------------------------------------------------|------------------------------------------------------------|-------------------------|--------------|------------------------|--------------------------------------------------|-------------------------------------------|
| | | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Mountable module | | | | |
| Analog input module | AJ65SBT-64AD AJ65SBT2B-64AD | | | | | | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | Input modules for analog signal converter |
| | | Voltage input | | | | | | | | | |
| | | 0 to 5V | FA-ATSVM1XV05 | P.297 | | | | | | | |
| | | 1 to 5V | FA-ATSVM1XV15 | P.297 | | | | | | | |
| | | -10 to 10V | FA-ATSVM1XV1010 | P.297 | | | | | | | |
| | | Current input | | | | | | | | | |
| 4 to 20mA | FA-ATSVM1XA420 | P.298 | | | | | | | | | |
| Distributor | | | | | | | | | | | |
| 4 to 20mA | FA-ATSVM1XD | P.299 | | | | | | | | | |
| RTD input | | | | | | | | | | | |
| -200 to +650°C | FA-ATSVM1XRPT | P.300 | | | | | | | | | |
| 0 to +100°C | FA-ATSVM1XRPT0010 | P.300 | | | | | | | | | |
| 0 to +200°C | FA-ATSVM1XRPT0020 | P.300 | | | | | | | | | |
| -200 to +600°C | FA-ATSVM1XRJPT | P.300 | | | | | | | | | |
| Thermocouple input | | | | | | | | | | | |
| +600 to +1700°C | FA-ATSVM1XTB | P.301 | | | | | | | | | |
| 0 to +1600°C | FA-ATSVM1XTA | P.301 | | | | | | | | | |
| 0 to +1600°C | FA-ATSVM1XTS | P.301 | | | | | | | | | |
| -200 to +1200°C | FA-ATSVM1XTK | P.301 | | | | | | | | | |
| 0 to +400°C | FA-ATSVM1XTK0040 | P.301 | | | | | | | | | |
| 0 to +600°C | FA-ATSVM1XTK0060 | P.301 | | | | | | | | | |
| 0 to +800°C | FA-ATSVM1XTK0080 | P.301 | | | | | | | | | |
| -200 to +900°C | FA-ATSVM1XTE | P.301 | | | | | | | | | |
| -40 to +750°C | FA-ATSVM1XTJ | P.301 | | | | | | | | | |
| -200 to +350°C | FA-ATSVM1XTT | P.301 | | | | | | | | | |
| -200 to +1250°C | FA-ATSVM1XTN | P.301 | | | | | | | | | |
| Pass-through module | | | | | | | | | | | |
| FA-ATFTMX | | | | P.316 | | | | | | | |
| Dummy module | | | | | | | | | | | |
| FA-ATNDM5 | | | | P.317 | | | | | | | |
| Analog input module | AJ65SBT2B-64DA | Analog signal converter | Screw | Module selectable type | Input to the programmable controller: 4 to 20mA | 8-channel installation base unit FA-ATKB8XTB P.294 | | | | FA-CBL**ATF P.304 | |
| | | | | | | Adapter FA-ATKAA8XM P.295 | | | | | |
| Analog output module | AJ65SBT2B-64DA | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 1 to 5V | Output modules for analog signal converter | | | | FA-CBL**ATYF P.315 | |
| | | | | | | (The programmable controller outputs voltage.) | | | | | |
| | | | | | | Voltage output | | | | | |
| | | | 0 to 5V | FA-ATSVM1YV05 | P.311 | | | | | | |
| | | | 0 to 10V | FA-ATSVM1YV010 | P.311 | | | | | | |
| | | | 1 to 5V | FA-ATSVM1YV15 | P.311 | | | | | | |
| -10 to 10V | FA-ATSVM1YV1010 | P.311 | | | | | | | | | |
| Current output | | | | | | | | | | | |
| 0 to 20mA | FA-ATSVM1YA020 | P.312 | | | | | | | | | |
| 4 to 20mA | FA-ATSVM1YA420 | P.312 | | | | | | | | | |
| Pass-through module | | | | | | | | | | | |
| FA-ATFTMX | | | | P.316 | | | | | | | |
| Dummy module | | | | | | | | | | | |
| FA-ATNDM5 | | | | P.317 | | | | | | | |
| Analog output module | AJ65SBT2B-64DA | Analog signal converter | Spring clamp | Module selectable type | Output from the programmable controller: 4 to 20mA | Output modules for analog signal converter | | | | FA-CBL**ATYF P.315 | |
| | | | | | | (The programmable controller outputs current.) | | | | | |
| | | | | | | Voltage output | | | | | |
| | | | 0 to 5V | FA-ATSAM1YV05 | P.309 | | | | | | |
| | | | 0 to 10V | FA-ATSAM1YV010 | P.309 | | | | | | |
| | | | 1 to 5V | FA-ATSAM1YV15 | P.309 | | | | | | |
| -10 to 10V | FA-ATSAM1YV1010 | P.309 | | | | | | | | | |
| Current output | | | | | | | | | | | |
| 0 to 20mA | FA-ATSAM1YA020 | P.310 | | | | | | | | | |
| 4 to 20mA | FA-ATSAM1YA420 | P.310 | | | | | | | | | |
| Pass-through module | | | | | | | | | | | |
| FA-ATFTMX | | | | P.316 | | | | | | | |
| Dummy module | | | | | | | | | | | |
| FA-ATNDM5 | | | | P.317 | | | | | | | |
| Analog output module | AJ65VBTCU-68DAVN | Analog signal converter | Spring clamp | Module selectable type | Input to the programmable controller: 1 to 5V | Output modules for analog signal converter | | | | FA-CBL**ATYF P.315 | |
| | | | | | | (The programmable controller outputs voltage.) | | | | | |
| | | | Voltage output | | | | | | | | |
| 0 to 5V | FA-ATSAM1YV05 | P.309 | | | | | | | | | |
| 0 to 10V | FA-ATSAM1YV010 | P.309 | | | | | | | | | |
| 1 to 5V | FA-ATSAM1YV15 | P.309 | | | | | | | | | |
| -10 to 10V | FA-ATSAM1YV1010 | P.309 | | | | | | | | | |
| Current output | | | | | | | | | | | |
| 0 to 20mA | FA-ATSAM1YA020 | P.310 | | | | | | | | | |
| 4 to 20mA | FA-ATSAM1YA420 | P.310 | | | | | | | | | |
| Pass-through module | | | | | | | | | | | |
| FA-ATFTMX | | | | P.316 | | | | | | | |
| Dummy module | | | | | | | | | | | |
| FA-ATNDM5 | | | | P.317 | | | | | | | |

CC-Link <Positioning module>

| Programmable controller module type | Programmable controller module model | Servo amplifier or other devices | Type | | Cable model | |
|-------------------------------------|--------------------------------------|----------------------------------------------------------|-----------------------|----------------------|----------------------------------|------------------------------|
| Positioning module | AJ65BT-D75P2-S3 | MR-J5-A series MR-J4-A series MR-J3-A series | Cable with connectors | With pulse generator | FA-CBLA75M2J3-P | P.215 |
| | | For general-purpose stepping motors and servo amplifiers | Cable with connectors | With pulse generator | FA-CBLA75G2P-P FA-CBLA75G2D-P | P.216 P.216 |

Network interface modules for digital signal converter

| Programmable controller module model | Unit type | | | | Model | Connection cable | | | |
|------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------|
| | Control method | | Terminal block type | Mountable module | | | | | |
| FA3-TH1 □16XC-01C | Installation base unit (module selectable type) | 4 points, independent | | Spring clamp | Function type | FA1-TH4X2SC20S1E Mountable module ▶ P.236 | Dedicated cable (included) FA3-CB2L**MM1H20 FA-CBL**MMH20 (for distributed installation) P.320 P.174 | | |
| | | 8 points, independent | | | Function type | FA1-TH8X2SC20S1E Mountable module ▶ P.283 | | | |
| | | Module pre-mounted type unit | 24VDC (N/O contact) | 4 points, independent (positive common) | Spring clamp | Slim type ¹ | | FA1-TH4X24RA1L20S1E P.230 | |
| | | | | 4 points, independent (negative common) | | Slim type ¹ | | FA1-TH4X24RA1H20S1E P.230 | |
| | 8 points, independent (positive common) | | | Slim type ¹ | | FA1-TH8X24RA1L20S1E P.232 | | | |
| | 8 points, independent (negative common) | | | Slim type ¹ | | FA1-TH8X24RA1H20S1E P.232 | | | |
| | 16 points, independent (positive common) | | | Slim type ¹ | | FA1-TH16X24RA1L20S1E P.234 | | | |
| | 16 points, independent (negative common) | | | Slim type ¹ | | FA1-TH16X24RA1H20S1E P.234 | | | |
| | Module built-in type unit | 24VDC 48VDC 100VDC 100VAC 200VAC | 16 points/common, 2-wire type | | Screw (M3) | Slim type | | FA-TH16XRA20S P.238 | |
| | | | | | Screw (M3) | Slim type | | FA-TH16X24D31 P.239 | |
| | | | | | Screw (M3.5) | Slim type | | FA-TH16X24D31L P.240 | |
| | | | | | Screw (M3.5) | Slim type | | FA-TH16X48D31L P.241 | |
| | | | | | Screw (M3.5) | Slim type | FA-TH16X100D31L P.242 | | |
| | | | | | Screw (M3) | Slim type | FA-TH16X100A31 P.243 | | |
| | FA3-TH1 □16XC | Installation base unit (module selectable type) | 4 points, independent | | Spring clamp | Function type | FA1-TH4X2SC20S1E Mountable module ▶ P.283 | Dedicated cable (included) FA3-CB2L**MM1H20 P.320 | |
| | | | 8 points, independent | | | Function type | FA1-TH8X2SC20S1E Mountable module ▶ P.283 | | |
| | | | Module pre-mounted type unit | 24VDC (N/O contact) | 4 points, independent (positive common) | Spring clamp | Slim type ¹ | | FA1-TH4X24RA1L20S1E P.230 |
| | | | | | 4 points, independent (negative common) | | Slim type ¹ | | FA1-TH4X24RA1H20S1E P.230 |
| | | 8 points, independent (positive common) | | | Slim type ¹ | | FA1-TH8X24RA1L20S1E P.232 | | |
| | | 8 points, independent (negative common) | | | Slim type ¹ | | FA1-TH8X24RA1H20S1E P.232 | | |
| 16 points, independent (positive common) | | Slim type ¹ | | | FA1-TH16X24RA1L20S1E P.234 | | | | |
| 16 points, independent (negative common) | | Slim type ¹ | | | FA1-TH16X24RA1H20S1E P.234 | | | | |
| Module built-in type unit | | 24VDC 48VDC 100VDC 100VAC 200VAC | 16 points/common, 2-wire type | | Screw (M3) | Slim type | FA-TH16XRA20S P.238 | | |
| | | | | | Screw (M3) | - | FA-TH16X24D31 P.239 | | |
| | | | Screw (M3.5) | - | FA-TH16X24D31L P.240 | | | | |
| | | | Screw (M3.5) | - | FA-TH16X48D31L P.241 | | | | |
| | | | Screw (M3.5) | - | FA-TH16X100D31L P.242 | | | | |
| | | | Screw (M3) | - | FA-TH16X100A31 P.243 | | | | |

| Programmable controller module model | | Unit type | | | Model | Connection cable | | | |
|--------------------------------------|-------------------------------|--------------------------------------------------|-------------------------------|---------------------------------|------------------------|-------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------|
| | | Control method | | Terminal block type | | | Mountable module | | |
| FA3-TH1□16Y-01C | Sink output | Installation base unit (module selectable type) | | 4 points, independent (sink) | Spring clamp | Slim type | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 P.248 | Dedicated cable (included) FA3-CB2L**MM1H20 P.320 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | 8 points, independent (sink) | | Slim type | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 P.250 | | |
| | | | | 16 points, independent (sink) | | Slim type | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 P.259 | | |
| | | Module pre-mounted type unit | N/O contact | 16 points, independent | | Spring clamp | Slim type ² | | FA1-TH16Y2RA20S1E P.254 |
| | | | | | | Screw (M3) | Slim type ² | | FA-TH16YRA20S P.265 |
| | | | | | | Screw (M3.5) | Slim type ³ | | FA-TH16YRA20 P.262 |
| | | | | 16 points/common, 1-wire type | | Slim type | FA-TH16YRA20SL P.267 | | |
| | | | | | | Slim type | FA-TH16YRA11S P.263 | | |
| | | | | Slim type | FA-TH16YRA11 P.260 | | | | |
| | 16 points/common, 2-wire type | | Slim type | FA-TH16YRA21S P.264 | | | | | |
| | | | Slim type | FA-TH16YRA21 P.261 | | | | | |
| | | | Slim type ² | FA-TH16YRAB20SL P.268 | | | | | |
| | N/C contact | | 16 points, independent | Screw (M3.5) | Slim type ² | FA-TH16YRAC20S P.269 | | | |
| | C/O contact | | 16 points, independent | Screw (M3) | Slim type | FA1-TH16Y1SR20S1E P.256 | | | |
| | Triac | | 16 points, independent | | Spring clamp | Slim type ² | FA-TH16YSR20S P.272 | | |
| | | | | | Screw (M3) | Slim type | FA-TH16YSR11S P.270 | | |
| | | | | | Screw (M3) | Slim type | FA-TH16YSR21S P.271 | | |
| | | | 16 points/common, 1-wire type | | Spring clamp | Slim type ² | FA1-TH16Y1TR20S1E P.258 | | |
| | | Slim type | | | FA-TH16YTL11S P.273 | | | | |
| | | Slim type | | | FA-TH16YTL21S P.274 | | | | |
| | Transistor (sink) | 16 points/common, 2-wire type (sink) | | Screw (M3) | Slim type | FA-TH16YTH11S P.275 | | | |
| | | | | | Slim type | FA-TH16YTH11S P.275 | | | |
| | | | | | Slim type | FA-TH16Y2TR20 P.278 | | | |
| | | 16 points/common, 1-wire type (source) | | Screw (M3) | Slim type | FA-TH16YTR20S P.277 | | | |
| | | | | | Slim type | FA-TH16YTR20S P.277 | | | |
| | | | | | Slim type ² | FA-TH16YTR20S P.277 | | | |
| | Module built-in type unit | 16 points, independent (sink/source shared type) | | Slim type ² | FA-TH16YTR20S P.277 | | | | |
| FA3-TH1□16Y | Sink output | Installation base unit (module selectable type) | | 4 points, independent (sink) | Spring clamp | Slim type | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 P.248 | Dedicated cable (included) FA3-CB2L**MM1H20 P.320 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | 8 points, independent (sink) | | Slim type | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 P.250 | | |
| | | | | 16 points, independent (sink) | | Slim type | FA1-TH16Y2SC20S1E Mountable module ▶ P.284 P.259 | | |
| | | Module pre-mounted type unit | N/O contact | 16 points, independent | | Spring clamp | Slim type ² | | FA1-TH16Y2RA20S1E P.254 |
| | | | | | | Screw (M3) | Slim type ² | | FA-TH16YRA20S P.265 |
| | | | | | | Screw (M3.5) | Slim type ³ | | FA-TH16YRA20 P.262 |
| | | | | 16 points/common, 1-wire type | | Slim type | FA-TH16YRA20SL P.267 | | |
| | | | | | | Slim type | FA-TH16YRA11S P.263 | | |
| | | | | Slim type | FA-TH16YRA11 P.260 | | | | |
| | 16 points/common, 2-wire type | | Slim type | FA-TH16YRA21S P.264 | | | | | |
| | | | Slim type | FA-TH16YRA21 P.261 | | | | | |
| | | | Slim type ² | FA-TH16YRAB20SL P.268 | | | | | |
| | N/C contact | | 16 points, independent | Screw (M3.5) | Slim type ² | FA-TH16YRAC20S P.269 | | | |
| | C/O contact | | 16 points, independent | Screw (M3) | Slim type | FA1-TH16Y1SR20S1E P.256 | | | |
| | Triac | | 16 points, independent | | Spring clamp | Slim type ² | FA-TH16YSR20S P.272 | | |
| | | | | | Screw (M3) | Slim type | FA-TH16YSR11S P.270 | | |
| | | | | | Screw (M3) | Slim type | FA-TH16YSR21S P.271 | | |
| | | | 16 points/common, 1-wire type | | Spring clamp | Slim type ² | FA1-TH16Y1TR20S1E P.258 | | |
| | | Slim type | | | FA-TH16YTL11S P.273 | | | | |
| | | Slim type | | | FA-TH16YTL21S P.274 | | | | |
| | Transistor (sink) | 16 points/common, 2-wire type (sink) | | Screw (M3) | Slim type | FA-TH16YTH11S P.275 | | | |
| | | | | | Slim type | FA-TH16YTH11S P.275 | | | |
| | | | | | Slim type | FA-TH16Y2TR20 P.278 | | | |
| | | 16 points/common, 1-wire type (source) | | Screw (M3) | Slim type | FA-TH16YTR20S P.277 | | | |
| | | | | | Slim type | FA-TH16YTR20S P.277 | | | |
| | | | | | Slim type ² | FA-TH16YTR20S P.277 | | | |
| | Module built-in type unit | 16 points, independent (sink/source shared type) | | Slim type ² | FA-TH16YTR20S P.277 | | | | |
| FA3-TH1□16YE-01C | Source output | Installation base unit (module selectable type) | | 4 points, independent (sink) | Spring clamp | Slim type ² | FA1-TH1E4Y2SC20S1E Mountable module ▶ P.284 P.248 | Dedicated cable (included) FA3-CB2L**MM1H20 P.320 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | 8 points, independent (sink) | | Slim type ² | FA1-TH1E8Y2SC20S1E Mountable module ▶ P.284 P.250 | | |
| | | | | 16 points, independent (source) | | Slim type ² | FA1-TH1E16Y2SC20S1E Mountable module ▶ P.284 P.253 | | |
| | | Module pre-mounted type unit | N/O contact relay | 16 points, independent (source) | | Spring clamp | Slim type ² | | FA1-TH1E16Y2RA20S1E P.255 |
| | | | | | | Screw (M3) | Slim type ² | | FA1-TH1E16Y2RA20S P.266 |
| | | | | | | Screw (M3) | Slim type | | FA1-TH1E16Y1SR20S1E P.257 |
| | | | Triac | 16 points, independent (source) | | Spring clamp | Slim type | | FA1-TH1E16Y1TR20S1E P.252 |
| | | | | | | Spring clamp | Slim type | | FA1-TH1E16Y1TR20S1E P.252 |
| | | | | | | Screw (M3) | Slim type | | FA-THE16YTR20S P.279 |
| | Transistor (source) | 16 points, independent (sink/source shared type) | | Screw (M3) | Slim type | FA-THE16YTH11S P.276 | | | |
| | | | | | Slim type | FA-THE16YTH11S P.276 | | | |
| | | | | | Slim type | FA-THE16YTH11S P.276 | | | |
| | Module built-in type unit | 16 points/common, 1-wire type (source) | | Slim type | FA-THE16YTH11S P.276 | | | | |

| Programmable controller module model | | Unit type | | | | Model | Connection cable | | |
|--------------------------------------|--------------------------------------------------|--------------------------------------------------|-------------------|---------------------------------|----------------------|---------------------------|---------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------------------|
| | | Control method | | Terminal block type | Mountable module | | | | |
| FA3-TH1□16YE | Source output | Installation base unit (module selectable type) | | 4 points, independent (sink) | Spring clamp | Slim type ² | FA1-TH1E4Y2SC20S1E Mountable module ▶ P.248 P.248 | FA3-CB2L**MM1H20 P.320 FA-CBL**MMH20 P.174 (for distributed installation) | |
| | | | | 8 points, independent (sink) | | Slim type ² | | | FA1-TH1E8Y2SC20S1E Mountable module ▶ P.250 P.284 |
| | | | | 16 points, independent (source) | | Slim type ² | | | FA1-TH1E16Y2SC20S1E Mountable module ▶ P.253 P.284 |
| | | Module pre-mounted type unit | N/O contact relay | 16 points, independent (source) | Spring clamp | Slim type ² | FA1-TH1E16Y2RA20S1E P.255 | | FA3-CB2L**MM1H20 P.320 |
| | | | Triac | 16 points, independent (source) | Screw (M3) | Slim type ² | FA1-TH1E16Y2RA20S P.266 | | |
| | | | | 16 points, independent (source) | Spring clamp | Slim type | FA1-TH1E16Y1SR20S1E P.257 | | |
| | 16 points, independent (sink/source shared type) | | | Spring clamp | Slim type | FA1-TH1E16Y1TR20S1E P.252 | | | |
| | Transistor (source) | 16 points, independent (sink/source shared type) | Screw (M3) | Slim type | FA-THE16YTR20S P.279 | | | | |
| | | 16 points/common, 1-wire type (source) | | Slim type | FA-THE16YTH11S P.276 | | | | |

*1: Only N/O contact and N/C contact modules can be mixed.
 *2: Only N/O contact, N/C contact, triac, and transistor modules can be mixed.
 *3: Modules cannot be replaced or mixed.

Network interface modules for analog signal converter

| Type | Interface module model | Installation base unit | | Mountable module | Connection cable | | | |
|---------------------|------------------------|------------------------|------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------|
| Analog input module | FA3-AT1□8X-01C | Spring clamp | Module selectable type | 4-channel installation base unit FA1-AT1B4X1TE P.292 | Input modules for analog signal converter Voltage input 0 to 5V FA-ATSVM1XV05 P.297 1 to 5V FA-ATSVM1XV15 P.297 -10 to 10V FA-ATSVM1XV1010 P.297 Current input 4 to 20mA FA-ATSVM1XA420 P.298 Distributor 4 to 20mA FA-ATSVM1XD P.299 RTD input -200 to +650°C FA-ATSVM1XRPT P.300 0 to +100°C FA-ATSVM1XRPT0010 P.300 0 to +200°C FA-ATSVM1XRPT0020 P.300 -200 to +600°C FA-ATSVM1XRJPT P.300 Thermocouple input +600 to +1700°C FA-ATSVM1XTB P.301 0 to +1600°C FA-ATSVM1XTR P.301 0 to +1600°C FA-ATSVM1XTS P.301 -200 to +1200°C FA-ATSVM1XTK P.301 0 to +400°C FA-ATSVM1XTK0040 P.301 0 to +600°C FA-ATSVM1XTK0060 P.301 0 to +800°C FA-ATSVM1XTK0080 P.301 -200 to +900°C FA-ATSVM1XTE P.301 -40 to +750°C FA-ATSVM1XTJ P.301 -200 to +350°C FA-ATSVM1XTT P.301 -200 to +1250°C FA-ATSVM1XTN P.301 Dummy module FA-ATNDM5 P.317 | Dedicated cable (Included with the CC-Link interface module) FA3-CB2L**MM1H20 P.320 | | |
| | | | | Screw | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | |
| | | | | | | | 8-channel installation base unit FA-ATB8XTB P.296 | |
| | | Spring clamp | | | | | 4-channel installation base unit FA1-AT1B4X1TE P.292 | FA3-CB2L**MM1H20 P.320 |
| | | | | Screw | | | 4-channel installation base unit FA1-AT1B4X1TB P.292 | |
| | | | | | | | 8-channel installation base unit FA-ATB8XTB P.296 | |
| | FA3-AT1□8Y-01C | Spring clamp | Module selectable type | | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | Output modules for analog signal converter Voltage output 0 to 5V FA-ATSVM1YV05 P.311 0 to 10V FA-ATSVM1YV010 P.311 1 to 5V FA-ATSVM1YV15 P.311 -10 to 10V FA-ATSVM1YV1010 P.311 Current output 0 to 20mA FA-ATSVM1YA020 P.312 4 to 20mA FA-ATSVM1YA420 P.312 Dummy module FA-ATNDM5 P.317 | Dedicated cable (Included with the CC-Link interface module) FA3-CB2L**MM1H20 P.320 | |
| | | | | Screw | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | | | |
| | | | | | 8-channel installation base unit FA-ATB8YTB P.308 | | | |
| | | Spring clamp | | | 4-channel installation base unit FA1-AT1B4Y1TE P.306 | | | FA3-CB2L**MM1H20 P.320 |
| Screw | | | | 4-channel installation base unit FA1-AT1B4Y1TB P.306 | | | | |
| | | | | 8-channel installation base unit FA-ATB8YTB P.308 | | | | |

Supported network

| | |
|-------|------------------------------------------------------------------------------------------------|
| □ = M | CC-Link IE TSN, CC-Link IE Field Basic, CC-Link IE Field, SLMP (standard Ethernet), MODBUS/TCP |
| □ = T | CC-Link IE TSN, CC-Link IE Field Basic, CC-Link IE Field, SLMP (standard Ethernet) |
| □ = C | CC-Link |

ASLINK TERMINAL series manufactured by Anywire <I/O modules>

| MIL connector terminal model | | Unit type | | | | Model | | Connection cable | | | | |
|--------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------|-------------------------------------------------|----------------------------------------------------|------------------------|------------------------------------------------|--------------------------------------------------------|-------|
| BL265SB-16F-2-20 BL265SB-32F-2-20 | Positive common | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4X2SC20S1E Mountable module ▶ P.236 | FA-CBL**MMH20 (also used for unit distribution) | P.174 | | | |
| | | | | 24VDC, N/O contact relay (positive common) | Module mixing possible | Independent | FA1-TH8X24RA1L20S1E Mountable module ▶ P.236 | | | | | |
| | | | | 24VDC, N/O contact relay (negative common) | | | FA1-TH4X24RA1L20S1E P.230 | | | | | |
| | | | | FA1-TH8X24RA1L20S1E P.232 | | | | | | | | |
| | | | | FA1-TH16X24RA1L20S1E P.234 | | | | | | | | |
| | | | | FA1-TH4X24RA1H20S1E P.230 | | | | | | | | |
| | | | FA1-TH8X24RA1H20S1E P.232 | | | | | | | | | |
| | | | FA1-TH16X24RA1H20S1E P.234 | | | | | | | | | |
| | | | Screw | 24VDC, N/O contact relay | Module mixing possible | Independent | FA-TH16XRA20S P.238 | | | | | |
| | | | | 24VDC, 10mA | Module mixing possible | 2-wire type | FA-TH16X24D31 P.239 | | | | | |
| | | | | 48VDC, 5mA | | | FA-TH16X24D31L P.240 | | | | | |
| | | | | 100VDC, 2.5mA | Module mixing possible | 2-wire type | FA-TH16X48D31L P.241 | | | | | |
| 100VAC, 8mA | FA-TH16X100D31L P.242 | | | | | | | | | | | |
| 200VAC, 7.5mA | Module mixing possible | 2-wire type | | FA-TH16X100A31 P.243 | | | | | | | | |
| FA-TH16X100A31L P.244 | | | | | | | | | | | | |
| FA-TH16X200A31 P.245 | | | | | | | | | | | | |
| FA-TH16X200A31L P.246 | | | | | | | | | | | | |
| BL265PB-16F-2-20 BL265PB-32F-2-20 | Sink output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH4Y2SC20S1E Mountable module ▶ P.284 | FA-CBL**MMH20 (also used for unit distribution) | P.174 | | | |
| | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH8Y2SC20S1E Mountable module ▶ P.284 | | | | | |
| | | | | Triac, 1.0A | | | FA1-TH16Y2RA20S1E P.250 | | | | | |
| | | | | Transistor, 1.0A | | | FA1-TH16Y1SR20S1E P.254 | | | | | |
| | | | | Screw | N/O contact relay | Module replaceable | Independent | | | FA1-TH16Y1TR20S1E P.258 | | |
| | | | | | | | | | | 1-wire type | FA-TH16YRA11 P.260 | |
| | | | | | | | | | | 2-wire type | FA-TH16YRA21 P.261 | |
| | | | | | | Module mixing possible | Independent | | | FA-TH16YRA20 P.262 | | |
| | | | | | | | | | | 1-wire type | FA-TH16YRA11S P.263 | |
| | | | | | | | | | | 2-wire type | FA-TH16YRA21S P.264 | |
| | | | | | N/C contact relay | Module replaceable | Independent | | | FA-TH16YRA20S P.265 | | |
| | | | | | | | | | | 1-wire type | FA-TH16YRA20SL P.267 | |
| | | | 2-wire type | | | | | FA-TH16YRAB20SL P.268 | | | | |
| | | | C/O contact relay | | | Module mixing possible | Independent | FA-TH16YRAC20S P.269 | | | | |
| | | | | | | | | 1-wire type | FA-TH16YSR11S P.270 | | | |
| | | | | | | | | 2-wire type | FA-TH16YSR21S P.271 | | | |
| | | | Triac, 1.0A | Module replaceable | Independent | FA-TH16YSR20S P.272 | | | | | | |
| | | | | | | 1-wire type | FA-TH16YTL11S P.273 | | | | | |
| | | | | | | 2-wire type | FA-TH16YTL21S P.274 | | | | | |
| | | | | Transistor, 1.0A (sink) | Module replaceable | Independent | FA-TH16YTH11S P.275 | | | | | |
| | | | | | | | 1-wire type | FA-TH16YTR20S P.277 | | | | |
| | | | | | | | 2-wire type | FA-TH16YTR20 P.278 | | | | |
| | | | BL265PB-16FS-2-20 BL265PB-32FS-2-20 | Source output | Digital signal converter (terminal module) | Spring clamp | Installation base unit | Module selectable type | Independent | FA1-TH1E4Y2SC20S1E Mountable module ▶ P.284 | FA2-CB1L**MM1H20E (also used for unit distribution) | P.176 |
| | | | | | | | N/O contact relay | Module mixing possible | Independent | FA1-TH1E8Y2SC20S1E Mountable module ▶ P.284 | | |
| Triac, 1.0A | FA1-TH1E16Y2SC20S1E Mountable module ▶ P.284 | | | | | | | | | | | |
| Transistor, 1.0A | FA1-TH1E16Y2RA20S1E P.255 | | | | | | | | | | | |
| Screw | N/O contact relay | Module mixing possible | | | | | Independent | FA1-TH1E16Y1SR20S1E P.257 | | | | |
| | | | | | | | | FA1-TH1E16Y1TR20S1E P.252 | | | | |
| | | | | | | FA1-TH1E16Y2RA20S P.266 | | | | | | |
| | Transistor, 1.0A (source) | Module replaceable | | | | Independent | FA-TH1E16YTH11S P.276 | | | | | |
| | | | | | | | 1-wire type | FA-TH1E16YTR20S P.279 | | | | |
| | | | | | | | 2-wire type | FA-TH1E16YTR20S P.279 | | | | |
| Transistor, 1.0A | Module mixing possible | Independent | | | | FA-TH1E16YTR20S P.279 | | | | | | |
| BL265XB-32F-2-20 | I/O combined | For the input side, refer to the specifications of the BL265SB-16F-2-20. For the output side, refer to the specifications of the BL265PB-16F-2-20. | | | | | | | | | | |

PLC modules manufactured by OMRON: CJ1/CJ1MCS series

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | |
|--------------------------------------------------------------------|--------------|-------------------------|----------------|---------------------------|-------------|-----------|--------------|------------------|----------------|
| CJ1W-ID231 CJ1W-ID261 | Input | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| CJ1W-ID232 CJ1W-ID262 CJ1W-ID233 | | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |
| CJ1W-OD231 CJ1W-OD261 | Output | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| CJ1W-OD232 CJ1W-OD233 CJ1W-OD262 CJ1W-OD263 CJ1W-OD234 | | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |
| CJ1W-MD261 | I/O combined | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| CJ1W-MD263 CJ1W-MD563 | | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |

PLC modules manufactured by OMRON: CS series (CS1G/H, CS1D)

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | |
|------------------------------------------------------|--------------|-------------------------|----------------|---------------------------|-------------|-----------|--------------|------------------|----------------|
| CS1W-ID231 CS1W-ID261 | Input | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| CS1W-OD231 CS1W-OD232 CS1W-OD261 CS1W-OD262 | Output | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| CS1W-MD261 CS1W-MD262 CS1W-MD561 | I/O combined | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |

PLC modules manufactured by OMRON: DeviceNet

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | |
|--------------------------------------|--------------|-------------------------|----------------|---------------------------|-------------|-----------|--------------|------------------|----------------|
| GT1-ID32ML GT1-ID32ML-1 | Input | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| DRT2-ID32ML DRT2-ID32ML-1 | | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |
| GT1-OD32ML GT1-OD32ML-1 | Output | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH | P.185 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| DRT2-OD32ML DRT2-OD32ML-1 | | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |
| DRT2-MD32ML DRT2-MD32ML-1 | I/O combined | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |

PLC modules manufactured by OMRON: CompoBus/S

| Programmable controller module model | | Unit type | | | | Model | | Connection cable | |
|--------------------------------------|--------------|-------------------------|----------------|---------------------------|-------------|-----------|--------------|------------------|----------------|
| SRT2-ID32ML SRT2-ID32ML-1 | Input | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL |
| SRT2-OD32ML SRT2-OD32ML-1 | Output | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |
| SRT2-MD32ML SRT2-MD32ML-1 | I/O combined | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**MMH-R | P.189 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBLY |

PLC modules manufactured by Yokogawa Electric: FA-M3 series

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | |
|-----------------------------------------------------------------------------------------|--------------|-------------------------|----------------|---------------------------|-------------|-----------|------------------|----------------|---------------------------------------------------|
| F3XD32-3F F3XD32-4F F3XD32-5F F3XD64-3F F3XD64-4F F3XD64-6M | Input | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-FY | P.190 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR |
| F3YD32-1H F3YD32-1P F3YD32-1R F3YD32-1T F3YD64-1M F3YD64-1P F3YD64-1R | Output | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-FY | P.190 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR |
| F3WD64-3P F3WD64-4P | I/O combined | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-FY | P.190 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR |

PLC modules manufactured by Fuji Electric FA Components & Systems: SPH series

| Programmable controller module model | | Unit type | | | Model | | Connection cable | | |
|----------------------------------------------------------|--------------|-------------------------|----------------|---------------------------|-------------|-----------|------------------|----------------|---------------------------------------------------|
| NP1X3206-W NP1X3202-W NP1X6406-W | Input | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-FY | P.190 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR |
| NP1Y32T09P1 NP1Y32U09P1 NP1Y64T09P1 NP1Y64U09P1 | Output | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-FY | P.190 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR |
| NP1W3206T NP1W3206U NP1W6406T NP1W6406U | I/O combined | Junction terminal block | Screw | Small-size terminal block | 1-wire type | FA-TBS40P | P.144 | FA-CBL**FMH-FY | P.190 |
| | | | Discrete cable | | | | | | FA-BCBL**FFBL FA-BCBL**FFBLY FA-BCBL**FFBLR |

Junction terminal blocks

Model list

For DC I/O modules

Spring clamp terminal type

| No. of points | Connection method | Model | Refer to |
|---------------|---------------------------------------------|---------------|----------|
| 32 | Spring clamp (1-wire type), horizontal type | FA1-TE1SS2XY | P.127 |
| 32 | Spring clamp (1-wire type), vertical type | FA1-TESV32XY | P.126 |
| 16 | Spring clamp (1-wire type), vertical type | FA1-TE1SV16XY | P.130 |
| 38 | Spring clamp, vertical type | FA1-TESV38COM | P.128 |

Spring clamp terminal block conversion adapter

| No. of points | Connection method | Model | Refer to |
|---------------|--------------------------------------------------------------------|------------|----------|
| 40 | Spring clamp, programmable controller module front connection type | FA1-TE40PA | P.131 |

Screw terminal type

| No. of points | Connection method | Model | Refer to |
|-----------------------|----------------------------------------------------------------------------------|---------------|----------|
| 32 | M3-screw (1-wire type) | FA-TB32XY | P.132 |
| | M3-screw (1-wire type, 16-point input/output, for remote I/O module) | FA-TB16X16Y | P.132 |
| | M3-screw, small type (1-wire type) | FA-TBS32XY | P.133 |
| | M3-screw (1-wire type, with LED indication, sink type) | FA-TB32XYL | P.134 |
| | M3-screw (1-wire type, with LED indication, source type) | FA-TB32XYH | P.134 |
| | M3-screw (1-wire type, for iQ-F input signals) | FA-FXTB32X | P.141 |
| | M3-screw (1-wire type, for iQ-F output signals) | FA-FXTB32Y | P.142 |
| | M3-screw (1-wire type, 16-point input/output, for iQ-F I/O signals) | FA-FXTB16X16Y | P.143 |
| | M3-screw (2-wire type, 0V common) | FA-TB32XYN3 | P.135 |
| | M3-screw (2-wire type, 24V common) | FA-TB32XYP3 | P.135 |
| 16 | M3.5-screw (1-wire type, 24V common, 1-level type) | FA-TB1L32XY | P.133 |
| | M3-screw (1-wire type) | FA-TB16XY | P.132 |
| | M3-screw (1-wire type, for iQ-F I/O signals) | FA-FXTB16XY | P.140 |
| | M3-screw (3-wire type, 16 points/8 (24V) common points + 8 (0V) common points) | FA-TB16XYPN | P.135 |
| | M3-screw (3-wire type, 16 points/16 (24V) common points + 16 (0V) common points) | FA-TB16XYPN3 | P.136 |
| 16 (distributed type) | M3.5-screw (2-wire type, 0V common, 1-level type) | FA-TB1L16XYN | P.134 |
| | M3.5-screw (2-wire type, 24V common, 1-level type) | FA-TB1L16XYP | P.134 |
| | M3-screw (3-wire type, 0 to F) | FA-TB16XY1 | P.139 |
| | M3-screw (2-wire type, 0V common, 0 to F) | FA-TB16XY1N | P.137 |
| 8 (distributed type) | M3-screw (3-wire type, 10 to 1F) | FA-TB16XY2 | P.139 |
| | M3-screw (2-wire type, 0V common, 10 to 1F) | FA-TB16XY2N | P.137 |
| | M3-screw (3-wire type, 0 to 7) | FA-TB8XY1 | P.138 |
| | M3-screw (3-wire type, 8 to F) | FA-TB8XY2 | P.138 |
| 40 | M3-screw (3-wire type, 10 to 17) | FA-TB8XY3 | P.138 |
| | M3-screw (3-wire type, 18 to 1F) | FA-TB8XY4 | P.138 |
| 40 | M3-screw, small type | FA-TBS40P | P.144 |
| 20 | M3 screw | FA-LTB20P | P.145 |

e-CON, one-touch connector type

| No. of points | Connection method | Model | Refer to |
|-----------------------|--------------------------------------------------|---------------|----------|
| 32 | e-CON (3-wire type) | FA-LEB32XY | P.150 |
| | e-CON compatible (3-wire type, 3-pole connector) | FA-LEB32XY-3 | P.150 |
| | e-CON compatible (3-wire type, 3-pole connector) | FA-LEB32XY-3A | P.150 |
| 16 | e-CON (3-wire type) | FA-LEB16XY | P.149 |
| | e-CON (3-wire type, for DIN rail installation) | FA-LEB16XY-D | P.149 |
| 16 (distributed type) | One-touch connector (3-wire type, 0 to F) | FA-CB16XY1 | P.147 |
| | One-touch connector (3-wire type, 10 to 1F) | FA-CB16XY2 | P.147 |
| 8 (distributed type) | One-touch connector (3-wire type, 0 to 7) | FA-CB8XY1 | P.146 |
| | One-touch connector (3-wire type, 8 to F) | FA-CB8XY2 | P.146 |
| | One-touch connector (3-wire type, 10 to 17) | FA-CB8XY3 | P.146 |
| | One-touch connector (3-wire type, 18 to 1F) | FA-CB8XY4 | P.146 |

For AC/DC I/O modules

Screw terminal type

| No. of points | Connection method | Model | Refer to |
|---------------|-----------------------------------------|--------------|----------|
| 18 | M3-screw, 1-wire type | FA-TB18XY | P.152 |
| | M3-screw, 1-wire type | FA-TB161AC | P.152 |
| 16 | M3-screw, 2-wire type | FA-TB161ACC1 | P.153 |
| | M3-screw, 2-wire type | FA-TB161ACC2 | P.153 |
| | M3-screw, 2-wire type (8 points/common) | FA-TB162ACC | P.154 |

Relay module

| No. of points | Connection method | Model | Refer to |
|---------------|-------------------|-----------|----------|
| 20 | M3 screw | FA-CTB20P | P.155 |

Connection cables

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Refer to | |
|----------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------|-------------------------------|--------------|---------------------|--------------|-------|
| MELSEC IQ-R series | For sink/source | Spring clamp terminal block | MIL 20P | 1m | FA1-CB1L10EM1F18 | P.157 | |
| | | | | 2m | FA1-CB1L20EM1F18 | P.157 | |
| | | | | 3m | FA1-CB1L30EM1F18 | P.157 | |
| | For sink/source | Spring clamp terminal block | MIL 20P × 2 | 1m | FA1-CB1L10EM2F34 | P.157 | |
| | | | | 2m | FA1-CB1L20EM2F34 | P.157 | |
| | | | | 3m | FA1-CB1L30EM2F34 | P.157 | |
| MELSEC IQ-R/ MELSEC IQ-F series, remote I/O module | For sink/source, cross sectional area 0.3mm ² , allowable current 4A | Spring clamp terminal block | Discrete cable, 18P | 1m | FA1-CB3L03SQ10E1F18 | P.156 | |
| | | | | 2m | FA1-CB3L03SQ20E1F18 | P.156 | |
| | | | | 3m | FA1-CB3L03SQ30E1F18 | P.156 | |
| | For sink/source, cross sectional area 0.75mm ² , allowable current 8A | Spring clamp terminal block | Discrete cable, 18P | 1m | FA1-CB3L07SQ10E1F18 | P.156 | |
| | | | | 2m | FA1-CB3L07SQ20E1F18 | P.156 | |
| | | | | 3m | FA1-CB3L07SQ30E1F18 | P.156 | |
| | For sink/source, cross sectional area 0.3mm ² , allowable current 4A | Spring clamp terminal block | Discrete cable, 34P | 1m | FA1-CB3L03SQ10E1F34 | P.156 | |
| | | | | 2m | FA1-CB3L03SQ20E1F34 | P.156 | |
| | | | | 3m | FA1-CB3L03SQ30E1F34 | P.156 | |
| | For sink/source, cross sectional area 0.75mm ² , allowable current 8A | Spring clamp terminal block | Discrete cable, 34P | 1m | FA1-CB3L07SQ10E1F34 | P.156 | |
| | | | | 2m | FA1-CB3L07SQ20E1F34 | P.156 | |
| | | | | 3m | FA1-CB3L07SQ30E1F34 | P.156 | |
| | For sink/source, cross sectional area 0.3mm ² , allowable current 4A | Spring clamp terminal block | Discrete cable, 40P | 1m | FA1-CB3L03SQ10E1F40 | P.156 | |
| | | | | 2m | FA1-CB3L03SQ20E1F40 | P.156 | |
| | | | | 3m | FA1-CB3L03SQ30E1F40 | P.156 | |
| | For sink/source, cross sectional area 0.75mm ² , allowable current 8A | Spring clamp terminal block | Discrete cable, 40P | 1m | FA1-CB3L07SQ10E1F40 | P.156 | |
| | | | | 2m | FA1-CB3L07SQ20E1F40 | P.156 | |
| | | | | 3m | FA1-CB3L07SQ30E1F40 | P.156 | |
| | MELSEC IQ-R/ MELSEC-Q/ MELSEC-L series | For sink/source | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMV | P.161 |
| | | | | | 1m | FA-CBL10FMV | P.161 |
| | | | | | 2m | FA-CBL20FMV | P.161 |
| | | | | | 3m | FA-CBL30FMV | P.161 |
| | | | | | 5m | FA-CBL50FMV | P.161 |
| | | | | | 8m | FA-CBL80FMV | P.161 |
| 10m | | | | | FA-CBL100FMV | P.161 | |
| 15m | | | | | FA-CBL150FMV | P.161 | |
| 20m | | | | | FA-CBL200FMV | P.161 | |
| For negative common input | | | | | FCN 40P | MIL 40P | 0.5m |
| | | 1m | FA-CBL10FMVE | P.164 | | | |
| | | 2m | FA-CBL20FMVE | P.164 | | | |
| For negative common input | | D-Sub37P | MIL 40P | 0.5m | FA-CBL05DMFX | P.165 | |
| | | | | 1m | FA-CBL10DMFX | P.165 | |
| | | | | 2m | FA-CBL20DMFX | P.165 | |
| | | | | 3m | FA-CBL30DMFX | P.165 | |
| | | | | 5m | FA-CBL50DMFX | P.165 | |
| For source output | | D-Sub37P | MIL 40P | 0.5m | FA-CBL05DMFY | P.166 | |
| | | | | 1m | FA-CBL10DMFY | P.166 | |
| | | | | 2m | FA-CBL20DMFY | P.166 | |
| | | | | 3m | FA-CBL30DMFY | P.166 | |
| | | | | 5m | FA-CBL50DMFY | P.166 | |
| MELSEC IQ-R/ MELSEC-Q series | | For sink/source, branching on relay module | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2V | P.162 |
| | | | | | 1m | FA-CBL10FM2V | P.162 |
| | 1.5m | | | | FA-CBL15FM2V | P.162 | |
| | 2m | | | | FA-CBL20FM2V | P.162 | |
| | 3m | | | | FA-CBL30FM2V | P.162 | |
| | 5m | | | | FA-CBL50FM2V | P.162 | |
| | For sink/source, branching on programmable controller | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2LV | P.163 | |
| | | | | 1m | FA-CBL10FM2LV | P.163 | |
| | | | | 2m | FA-CBL20FM2LV | P.163 | |
| | | | | 3m | FA-CBL30FM2LV | P.163 | |
| | | | | 5m | FA-CBL50FM2LV | P.163 | |
| | For source output, branching on relay module | D-Sub37P | MIL 20P × 2 | 2m | FA-CBL20DM2FY | P.167 | |

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Refer to |
|---------------------------------------------|---------------------------------------------|----------------------------------------|-------------------------------|-----------------------|--------------------|----------|
| MELSEC iQ-R/ MELSEC-Q series | For AC/DC I/O modules | Screw terminal block | 20P | 0.5m | FA-CBL05TD | P.183 |
| | | | | 0.7m | FA-CBL07TD | P.183 |
| | | | | 1m | FA-CBL10TD | P.183 |
| | | | | 1.5m | FA-CBL15TD | P.183 |
| | | | | 2m | FA-CBL20TD | P.183 |
| | | | | 2.5m | FA-CBL25TD | P.183 |
| | | 3m | FA-CBL30TD | P.183 | | |
| | | Discrete cable | 20P | 2m | FA-CBL20D | P.184 |
| MELSEC iQ-R/ MELSEC-Q series | Sink/source shared type | Screw terminal block | MIL 20P | 0.6m | FA-CBL06TMV20 | P.170 |
| | | | | 1m | FA-CBL10TMV20 | P.170 |
| | | | | 2m | FA-CBL20TMV20 | P.170 |
| | | | | 3m | FA-CBL30TMV20 | P.170 |
| MELSEC iQ-F series | For sink input/output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB1L10EM1F18 | P.157 |
| | | | | 2m | FA2-CB1L20EM1F18 | P.157 |
| | | | | 3m | FA2-CB1L30EM1F18 | P.157 |
| | For source input/output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB1L10EM1F18E | P.157 |
| | | | | 2m | FA2-CB1L20EM1F18E | P.157 |
| | | | | 3m | FA2-CB1L30EM1F18E | P.157 |
| MELSEC iQ-F/ MELSEC-F series | For sink | MIL 20P | MIL 20P | 0.6m | FA-FXCBL06MMH20 | P.175 |
| | | | | 1m | FA-FXCBL10MMH20 | P.175 |
| | | | | 1.5m | FA-FXCBL15MMH20 | P.175 |
| | | | | 2m | FA-FXCBL20MMH20 | P.175 |
| | | | | 3m | FA-FXCBL30MMH20 | P.175 |
| | For source | MIL 20P | MIL 20P | 0.6m | FA2-CB1L06MM1H20E | P.176 |
| | | | | 1m | FA2-CB1L10MM1H20E | P.176 |
| | | | | 1.5m | FA2-CB1L15MM1H20E | P.176 |
| | | | | 2m | FA2-CB1L20MM1H20E | P.176 |
| | | | | 3m | FA2-CB1L30MM1H20E | P.176 |
| | For sink, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20 | P.177 |
| | | | | 2m | FA2-CB1LT20MM1H20 | P.177 |
| | | | | 3m | FA2-CB1LT30MM1H20 | P.177 |
| | For source, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20E | P.178 |
| | | | | 2m | FA2-CB1LT20MM1H20E | P.178 |
| | | | | 3m | FA2-CB1LT30MM1H20E | P.178 |
| | Sink/source shared type | MIL 20P × 2 | MIL 40P | 0.6m | FA-FXCBL06MM2H | P.179 |
| | | | | 1m | FA-FXCBL10MM2H | P.179 |
| | | | | 1.5m | FA-FXCBL15MM2H | P.179 |
| | | | | 2m | FA-FXCBL20MM2H | P.179 |
| | | | | 3m | FA-FXCBL30MM2H | P.179 |
| | Sink/source shared type, withstanding -20°C | MIL 20P × 2 | MIL 40P | 1m | FA2-CB1LT10MM2H | P.180 |
| | | | | 2m | FA2-CB1LT20MM2H | P.180 |
| | | | | 3m | FA2-CB1LT30MM2H | P.180 |
| Sink/source shared type | MIL 20P × 2 | MIL 40P | 0.6m | FA-FXCBL06MM2H16X16Y | P.181 | |
| | | | 1m | FA-FXCBL10MM2H16X16Y | P.181 | |
| | | | 1.5m | FA-FXCBL15MM2H16X16Y | P.181 | |
| | | | 2m | FA-FXCBL20MM2H16X16Y | P.181 | |
| | | | 3m | FA-FXCBL30MM2H16X16Y | P.181 | |
| Sink/source shared type, withstanding -20°C | MIL 20P × 2 | MIL 40P | 1m | FA2-CB1LT10MM2H16X16Y | P.182 | |
| | | | 2m | FA2-CB1LT20MM2H16X16Y | P.182 | |
| | | | 3m | FA2-CB1LT30MM2H16X16Y | P.182 | |
| MELSEC-L series | For connecting junction terminal block | FCN 40P | MIL 20P × 2 | 1m | FA-SCBL10FM2LV-LB | P.217 |
| CC-Link IE TSN | For input | Spring clamp terminal block | MIL 20P | 1m | FA3-CB1L10EM1F18X | P.157 |
| | | | | 2m | FA3-CB1L20EM1F18X | P.157 |
| | | | | 3m | FA3-CB1L30EM1F18X | P.157 |
| | For output | Spring clamp terminal block | MIL 20P | 1m | FA3-CB1L10EM1F18Y | P.157 |
| | | | | 2m | FA3-CB1L20EM1F18Y | P.157 |
| | | | | 3m | FA3-CB1L30EM1F18Y | P.157 |
| CC-Link IE TSN CC-Link IE Field Basic | For input | Spring clamp terminal block | MIL 20P × 2 | 1m | FA3-CB1L10EM2F34X | P.157 |
| | | | | 2m | FA3-CB1L20EM2F34X | P.157 |
| | | | | 3m | FA3-CB1L30EM2F34X | P.157 |
| | For output | Spring clamp terminal block | MIL 20P × 2 | 1m | FA3-CB1L10EM2F34Y | P.157 |
| | | | | 2m | FA3-CB1L20EM2F34Y | P.157 |
| | | | | 3m | FA3-CB1L30EM2F34Y | P.157 |
| CC-Link IE Field CC-Link | For sink | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMH | P.185 |
| | | | | 1m | FA-CBL10FMH | P.185 |
| | | | | 2m | FA-CBL20FMH | P.185 |
| | | | | 3m | FA-CBL30FMH | P.185 |
| | | | | 5m | FA-CBL50FMH | P.185 |
| | For sink, flat cable | FCN 40P | MIL 40P | 0.5m | FA-FCBL05FMH | P.186 |
| | | | | 1m | FA-FCBL10FMH | P.186 |
| | | | | 2m | FA-FCBL20FMH | P.186 |
| | | | | 3m | FA-FCBL30FMH | P.186 |

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Refer to |
|----------------------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------|---------------------------------------------------|--------------|----------------|----------|
| CC-Link IE Field CC-Link | For sink, branching on relay module | FCN 40P | MIL 20P × 2 | 0.3m | FA-CBL03FM2H | P.172 |
| | | | | 1m | FA-CBL10FM2H | P.172 |
| | | | | 2m | FA-CBL20FM2H | P.172 |
| | For sink, branching on programmable controller | FCN 40P | MIL 20P × 2 | 3m | FA-CBL30FM2H | P.172 |
| | | | | 1m | FA-CBL10FM2LH | P.173 |
| | | | | 2m | FA-CBL20FM2LH | P.173 |
| CC-Link/LT | For sink | MIL 20P | MIL 20P | 3m | FA-CBL30FM2LH | P.173 |
| | | | | 5m | FA-CBL50FM2LH | P.173 |
| | | | | 0.6m | FA-CBL06MMH20 | P.174 |
| | | | | 1m | FA-CBL10MMH20 | P.174 |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series CC-Link IE Field CC-Link | For connecting distributed type modules | MIL 40P | MIL 40P | 2m | FA-CBL20MMH | P.171 |
| | | | | 3m | FA-CBL30MMH | P.171 |
| | | | | 5m | FA-CBL50MMH | P.171 |
| | | | | 8m | FA-CBL80MMH | P.171 |
| | | | | 10m | FA-CBL100MMH | P.171 |
| | | | | 0.5m | FA-CBL05MMH | P.171 |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | For FA-TBS40P connection | FCN 40P | MIL 40P | 1m | FA-CBL10FMV-M | P.187 |
| | | | | 2m | FA-CBL20FMV-M | P.187 |
| | | | | 3m | FA-CBL30FMV-M | P.187 |
| | | | | 5m | FA-CBL50FMV-M | P.187 |
| CC-Link | For FA-TBS40P connection | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMH-M | P.188 |
| General-purpose programmable controller | For FA-LTB20P connection | Discrete cable | MIL 20P | 0.6m | FA-CBL06M20 | P.168 |
| | | | | 1m | FA-CBL10M20 | P.168 |
| | | | | 2m | FA-CBL20M20 | P.168 |
| | | Y terminal | MIL 20P | 1m | FA-CBL10YM20 | P.169 |
| | | | | 2m | FA-CBL20YM20 | P.169 |
| | | | | 3m | FA-CBL30YM20 | P.169 |
| General-purpose programmable controller | | FCN 40P | Discrete cable | 5m | FA-CBL50FV | P.158 |
| | | | | 8m | FA-CBL80FV | P.158 |
| | | | | 1m | FA-BCBL10FFBL | P.159 |
| | | | | 2m | FA-BCBL20FFBL | P.159 |
| | | FCN 40P | Discrete cable | 3m | FA-BCBL30FFBL | P.159 |
| | | | | 1m | FA-BCBL10FFBLY | P.159 |
| | | | | 2m | FA-BCBL20FFBLY | P.159 |
| | | FCN 40P | Discrete cable with Y-shaped solderless terminals | 3m | FA-BCBL30FFBLY | P.159 |
| | | | | 1m | FA-BCBL10FFBLR | P.159 |
| | | | | 2m | FA-BCBL20FFBLR | P.159 |
| | | FCN 40P | Discrete cable with round solderless terminals | 3m | FA-BCBL30FFBLR | P.159 |
| | | | | D-Sub37P | Discrete cable | 3m |
| PLCs manufactured by OMRON | For FA-TBS40P connection | FCN 40P | MIL 40P | 0.5m | FA-CBL05MMH-R | P.189 |
| | | | | 2m | FA-CBL20MMH-R | P.189 |
| PLCs manufactured by Fuji Electric FA Components & Systems and Yokogawa Electric | For FA-TBS40P connection | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMH-FY | P.190 |
| | | | | 1m | FA-CBL10FMH-FY | P.190 |
| | | | | 2m | FA-CBL20FMH-FY | P.190 |
| | | | | 3m | FA-CBL30FMH-FY | P.190 |
| | | | | 5m | FA-CBL50FMH-FY | P.190 |

Protective cover

| Specifications | Model | Refer to |
|---------------------------------------------------------------------|---------------|----------|
| MIL 40P connector cover for distributed type modules (quantity: 10) | FA-CAP40MIL10 | P.145 |

For analog modules

Screw terminal type

| No. of points | Connection method | Model | Refer to |
|---------------|------------------------------------------------------------------------------------------------|---------------|----------|
| 40 | M3-screw, for isolated analog modules (R60AD8/16-G, Q68AD-G), small type | FA1-TBS40ADGN | P.191 |
| | M3-screw, for isolated analog modules (R60AD8/16-G, Q68AD-G) | FA-LTB40ADGN | P.192 |
| | M3-screw, for isolated analog modules (Q66AD-DG), small type | FA1-TBS40ADDG | P.191 |
| | M3-screw, for isolated analog modules (Q66AD-DG) | FA-LTB40ADDG | P.192 |
| | M3-screw, for isolated analog modules (R60DA8/16-G, Q66DA-G), small type | FA1-TBS40DAG | P.191 |
| 20 | M3-screw, for isolated analog modules (R60DA8/16-G, Q66DA-G) | FA-LTB40DAG | P.192 |
| | M3-screw, for analog modules | FA-LTB20P | P.145 |
| - | Conversion from screw type to 20P connector type, for analog modules | FA-Q6TCA | P.317 |
| 40 | M3-screw, for isolated thermocouple input modules, without cold junction compensation resistor | FA-LTB40TDG | P.193 |
| 20 | M3-screw, for thermocouple input modules, with cold junction compensation resistor | FA-TB20TD | P.193 |
| 40 | M3-screw, for RTD input modules | FA-LTB40RD3G | P.194 |
| 20 | M3-screw, for temperature control modules | FA-TB20TC | P.194 |

Connection cables

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Refer to | | | | |
|---------------------------------|---------------------------------|----------------------------------------|-------------------------------|---------------------------------|--------------------|----------------------|---------|------|----------------|-------|
| MELSEC iQ-R series | | | | 0.5m | FA1-CBL05R60DA8G | P.196 | | | | |
| | | | | 1m | FA1-CBL10R60DA8G | P.196 | | | | |
| | | | | 2m | FA1-CBL20R60DA8G | P.196 | | | | |
| MELSEC iQ-R/ MELSEC-Q series | For isolated analog modules | FCN 40P | MIL 40P | 3m | FA1-CBL30R60DA8G | P.196 | | | | |
| | | | | 0.5m | FA-CBL05Q68ADGN | P.196 | | | | |
| | | | | 1m | FA-CBL10Q68ADGN | P.196 | | | | |
| | | | | 2m | FA-CBL20Q68ADGN | P.196 | | | | |
| | | | | 3m | FA-CBL30Q68ADGN | P.196 | | | | |
| | | | | 0.5m | FA-CBL05Q66ADDG | P.196 | | | | |
| | | | | 1m | FA-CBL10Q66ADDG | P.196 | | | | |
| | | | | 2m | FA-CBL20Q66ADDG | P.196 | | | | |
| | | | | 3m | FA-CBL30Q66ADDG | P.196 | | | | |
| | | | | 0.5m | FA-CBL05Q66DAG | P.196 | | | | |
| | | | | 1m | FA-CBL10Q66DAG | P.196 | | | | |
| | | | | 2m | FA-CBL20Q66DAG | P.196 | | | | |
| | | | | 3m | FA-CBL30Q66DAG | P.196 | | | | |
| | | | | MELSEC iQ-R/ MELSEC-Q series | For analog modules | Screw terminal block | MIL 20P | 0.5m | FA-CBL05Q68ADT | P.197 |
| | | | | | | | | 2m | FA-CBL20Q68ADT | P.197 |
| 3m | FA-CBL30Q68ADT | P.197 | | | | | | | | |
| 2m | FA-CBL20Q64ADT | P.197 | | | | | | | | |
| 3m | FA-CBL30Q64ADT | P.197 | | | | | | | | |
| 0.5m | FA-CBL05Q68DAT | P.197 | | | | | | | | |
| 2m | FA-CBL20Q68DAT | P.197 | | | | | | | | |
| 3m | FA-CBL30Q68DAT | P.197 | | | | | | | | |
| 2m | FA-CBL20Q64DAT | P.197 | | | | | | | | |
| 3m | FA-CBL30Q64DAT | P.197 | | | | | | | | |
| 2m | FA-CBL20Q68ADA | P.198 | | | | | | | | |
| 0.5m | FA-CBL05Q68DAA | P.198 | | | | | | | | |
| 2m | FA-CBL20Q68DAA | P.198 | | | | | | | | |
| MELSEC-Q series | For thermocouple input modules | Screw terminal block | 20P connector | | | | | 0.5m | FA-CBL05Q68TDG | P.198 |
| | | | | | | | | 1m | FA-CBL10Q68TDG | P.198 |
| | | | | 2m | FA-CBL20Q68TDG | P.198 | | | | |
| | | | | 3m | FA-CBL30Q68TDG | P.198 | | | | |
| | | | | 1.5m | FA-CBLQ64TD15 | P.199 | | | | |
| | | | | 2m | FA-CBLQ64TD20 | P.199 | | | | |
| MELSEC iQ-R/ MELSEC-Q series | For RTD input modules | MIL 40P | MIL 40P | 3m | FA-CBLQ64TD30 | P.199 | | | | |
| | | | | 0.5m | FA-CBL05Q68RD3G | P.199 | | | | |
| | | | | 1m | FA-CBL10Q68RD3G | P.199 | | | | |
| MELSEC-Q series | For temperature control modules | Screw terminal block | 20P connector | 2m | FA-CBL20Q68RD3G | P.199 | | | | |
| | | | | 3m | FA-CBL30Q68RD3G | P.199 | | | | |
| | | | | 0.5m | FA-CBLQ64TC05 | P.200 | | | | |
| MELSEC-Q series | | | | 1m | FA-CBLQ64TC10 | P.200 | | | | |
| | | | | 2m | FA-CBLQ64TC20 | P.200 | | | | |

Analog shielded cable with ferrules

| Connected to | Specifications | Cable length | Model | Refer to |
|--------------------------------------------------------------------------|-----------------------------------------|--------------|------------------|----------|
| MELSEC iQ-R/ MELSEC iQ-F series CC-Link IE TSN CC-Link IE Field | Analog shielded cable with ferrules, 2P | 1m | FA1-CB2L10S1B2-4 | P.195 |
| | | 2m | FA1-CB2L20S1B2-4 | P.195 |
| | | 3m | FA1-CB2L30S1B2-4 | P.195 |

For high-speed counter modules

Screw terminal type

| No. of points | Connection method | Model | Refer to |
|---------------|-----------------------------------------------|------------------|--------------|
| 40 | M3-screw, for multi-channels, for 5V signals | FA-LTB40D63P6V5 | P.201 |
| | M3-screw, for multi-channels, for 12V signals | FA-LTB40D63P6V12 | P.201 |
| | M3-screw, for multi-channels, for 24V signals | FA-LTB40D63P6V24 | P.201 |

Connection cables

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Refer to |
|----------------------------------------------|--------------------------------|----------------------------------------|-------------------------------|--------------|----------------|--------------|
| MELSEC-Q series | For multi-channels | MIL 40P | MIL 40P | 0.5m | FA-CBL05QD63P6 | P.202 |
| | | | | 1m | FA-CBL10QD63P6 | P.202 |
| | | | | 1.5m | FA-CBL15QD63P6 | P.202 |
| | | | | 2m | FA-CBL20QD63P6 | P.202 |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | For high-speed counter modules | MIL 40P | MIL 40P | 0.5m | FA-SCBL05FMV-M | P.202 |
| | | | | 1m | FA-SCBL10FMV-M | P.202 |
| | | | | 1.5m | FA-SCBL15FMV-M | P.202 |
| | | | | 2m | FA-SCBL20FMV-M | P.202 |

For positioning modules

Screw terminal type

| Connected to | Connection method | Model | Refer to |
|----------------------------------------------|------------------------------------------------------------------------|-------------|--------------|
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | Between positioning module and servo amplifier | FA-LTBQ75DP | P.204 |
| | For positioning modules | FA-LTBQ75M | P.205 |
| MELSEC-L series | For the built-in I/O function (positioning function) of the CPU module | FA-PT1LBD | P.206 |

Connection cables

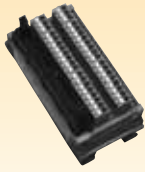
| Connected to | Specifications | No. of control axes | Cable length | Model | Refer to | |
|-------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------|--------------|------------------------------|------------------|--------------|
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | For connecting positioning module and junction terminal block | 2 | 0.5m | FA-CBL05Q7 | P.214 | |
| | | 2 | 1m | FA-CBL10Q7 | P.214 | |
| | For connecting servo amplifier and junction terminal block | For differential driver outputs | 2 | 1m | FA-CBLQ7DM1J3 | P.214 |
| | | For transistor outputs | 2 | 1m | FA-CBLQ7PM1J3 | P.214 |
| | | For general-purpose stepping motors and servo amplifiers | 2 | 1m | FA-CBLQ7DG1 | P.214 |
| MR-J5-A MR-J4-A MR-J3-A | For connecting pulse train positioning module and servo amplifier | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J3 | P.207 |
| | | With manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J3-P | P.207 |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75M2J3-1 | P.207 |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75PM2J3 | P.207 |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75PM2J3-1 | P.207 |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J2 | P.209 |
| | | With manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J2-P | P.209 |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75M2J2-1 | P.209 |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75PM2J2 | P.209 |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75PM2J2-1 | P.209 |
| Σ-II/Σ-IIPLUS series | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75Y2ΣII ¹⁾ | P.211 | |
| Σ-III series Σ-V series | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75Y2E3 | P.212 | |
| | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75G2 | P.213 | |
| General-purpose stepping motor, servo amplifier | With manual pulse generator cable | 2 | 2m | FA-CBLQ75G2-P | P.213 | |
| | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75G2-1 | P.213 | |
| | With manual pulse generator cable | 1 | 2m | FA-CBLQ75G2-1P | P.213 | |
| MR-J5-A MR-J4-A MR-J3-A | For connecting CC-Link positioning module and servo amplifier | With manual pulse generator cable | – | 2m | FA-CBLA75M2J3-P | P.215 |
| | | With manual pulse generator cable | – | 2m | FA-CBLA75M2J2-P | P.215 |
| MR-J2-A MR-J2S-A MR-J2-03A5 | For connecting CC-Link positioning module and servo amplifier | With manual pulse generator cable (for differential driver outputs) | – | 2m | FA-CBLA75G2D-P | P.216 |
| | | With manual pulse generator cable (for transistor outputs) | – | 2m | FA-CBLA75G2P-P | P.216 |
| MELSEC-L series | For connecting built-in I/O of CPU module and junction terminal block | 2 | 1m | FA-SCBL10FM2LV-LB | P.217 | |

*1: To purchase Σ-II series, order FA-CBLQ75Y2E2.

Specifications

For DC I/O modules

Spring clamp terminal block



MELSEC-dedicated 32-point 1-wire type

FA1-TESV32XY

- This product is dedicated to the MELSEC connector-type I/O module and used to convert 32-point connectors into a 32-point spring clamp terminal block using a 40-core cable.
- The vertical type terminal block with 42mm wide contributes to downsizing of system.
- Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
- A device such as a 3-wire sensor can be easily connected by placing a common terminal block next to the spring clamp type junction terminal block.
- Using ferrule terminals enables push-in connections.

Related products FA1-TESV38COM P.128

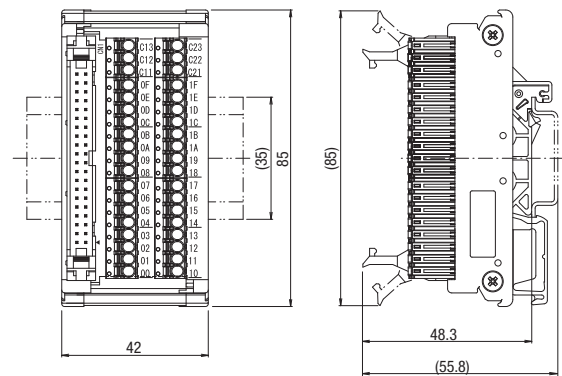
Specifications

| Item | Specifications | |
|------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Rated voltage | 24VDC | |
| Maximum operating voltage | 30VDC | |
| Maximum operating current (Note 2) | Signal: 1A, Common: 2A | |
| Wiring method for common | 32 points/3 (24V) common point + 3 (0V) common point | |
| Terminal block | Number of terminals | 38 terminals |
| | Applicable wire (Note 3) | 0.2 to 1.5mm ² (24 to 16AWG), sheath: ϕ 2.8mm or less |
| | Wire strip length | 8 to 9mm (Maximum sheath outside diameter: ϕ 2.8mm or less) |
| Module installation | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ϕ (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10M Ω or more (measured with 500VDC insulation resistance tester) | |
| Weight | Approx. 70g | |

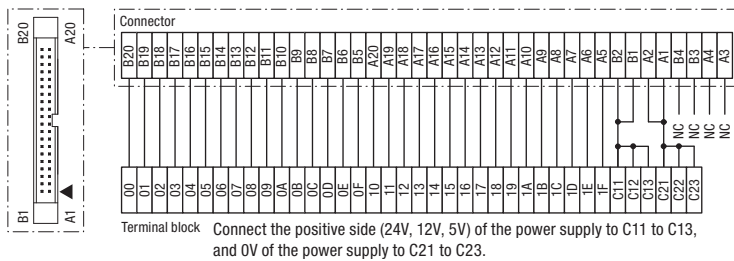
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 2: Evaluation for UL certification is conducted using a resistance load as a condition.
 Note 3: Evaluation for UL certification is conducted with copper wires.

External dimensions

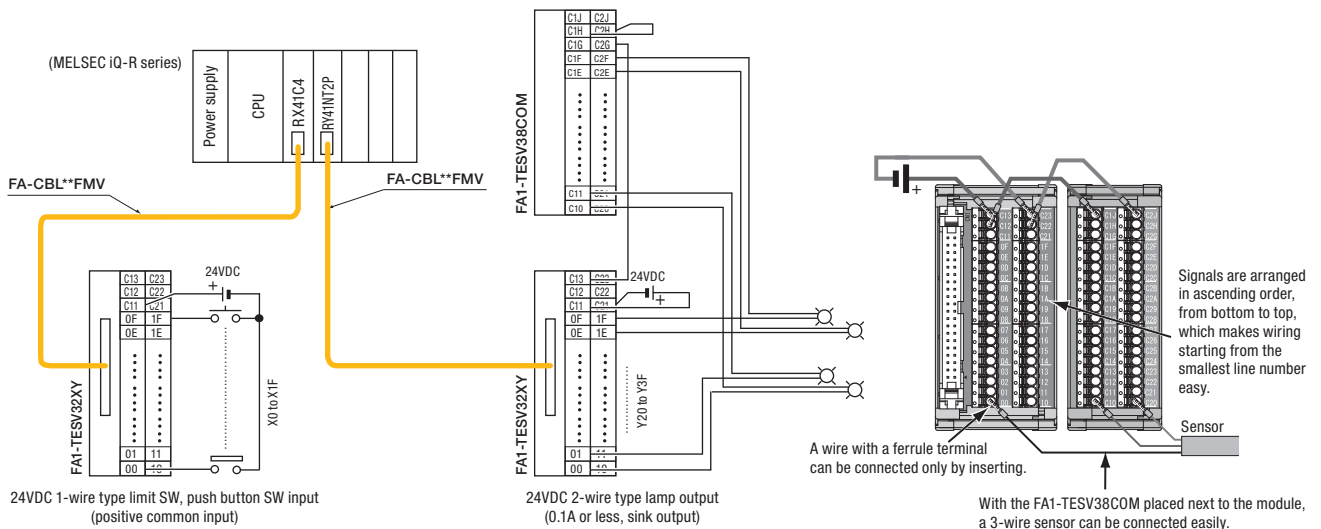
(Unit: mm)

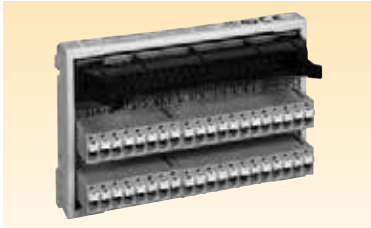


Connection diagram



Example of use





MELSEC-dedicated 32-point 1-wire type FA1-TE1S32XY

- This product is dedicated to the MELSEC connector-type I/O module and used to convert 32-point connectors into a 32-point spring clamp terminal block using a 40-core cable.
- Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
- A device such as a 3-wire sensor can be easily connected by placing a common terminal block next to the spring clamp type 32-point junction terminal block.
- Using ferrule terminals enables push-in connections.

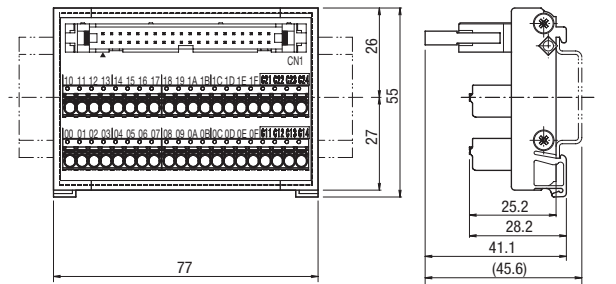
Related products **FA1-TESV38COM P.128**

Specifications

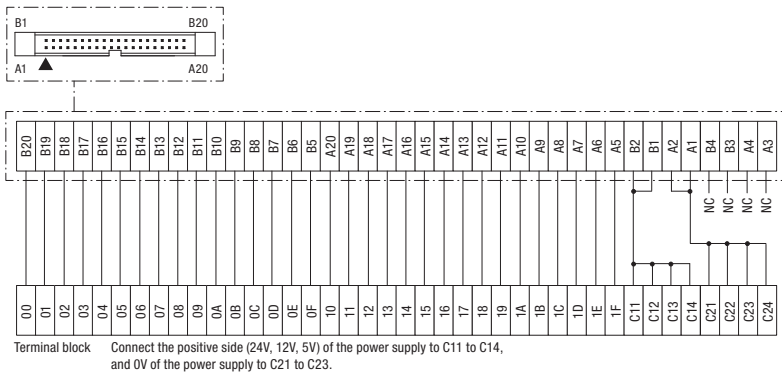
| Item | Specifications | |
|------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Rated voltage | 24VDC (Class 2 or SELV+LIM) (Note 4) | |
| Maximum operating voltage | 30VDC (Class 2 or SELV+LIM) (Note 4) | |
| Maximum operating current (Note 1) | Signal: 1A, Common: 2A | |
| Wiring method for common | 32 points/4 (24V) common point + 4 (0V) common point | |
| Terminal block | Number of terminals | 40 terminals |
| | Applicable wire (Notes 2 and 3) | 0.2 to 1.5mm ² (24 to 16AWG), sheath: ϕ 2.8mm or less |
| | Wire strip length | 8 to 9mm (Maximum sheath outside diameter: ϕ 2.8mm or less) |
| Module installation | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A λ (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10M Ω or more (measured with 500VDC insulation resistance tester) | |
| Weight | Approx. 60g | |

Note 1: Evaluation for UL certification is conducted using a resistance load as a condition.
 Note 2: Evaluation for UL certification is conducted with copper wires.
 Note 3: Select cables depending on the current value used.
 Note 4: Use a Class 2 power supply or an SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy Circuit) power supply.

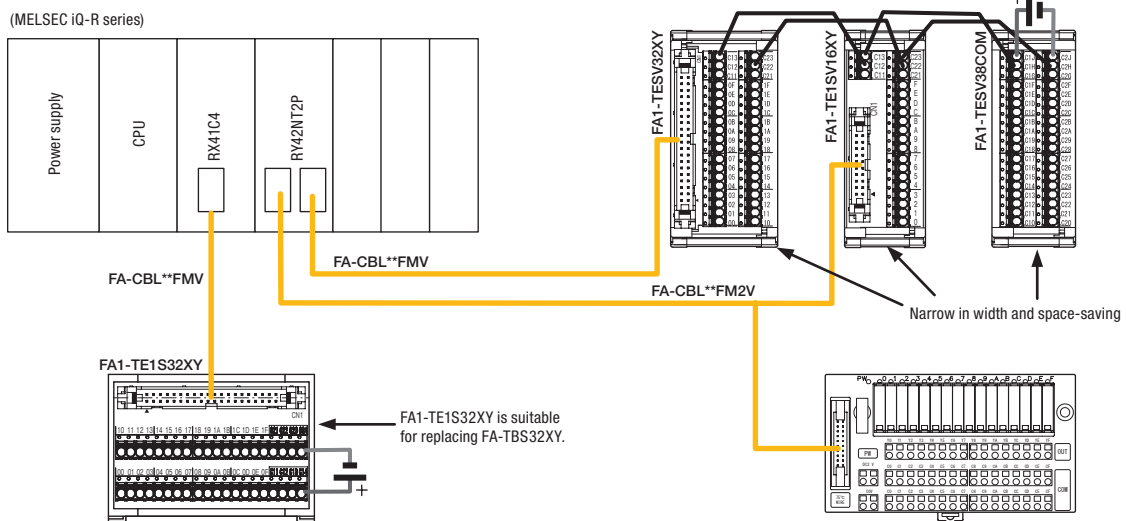
External dimensions

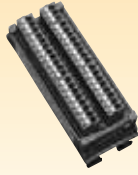


Connection diagram



Example of use





MELSEC-dedicated common terminal block

FA1-TESV38COM

- The vertical type terminal block contributes to downsizing of system.
- Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
- A device such as a 3-wire sensor can be easily connected by placing the common terminal block next to the spring clamp type junction terminal block.
- Using ferrule terminals enables push-in connections.

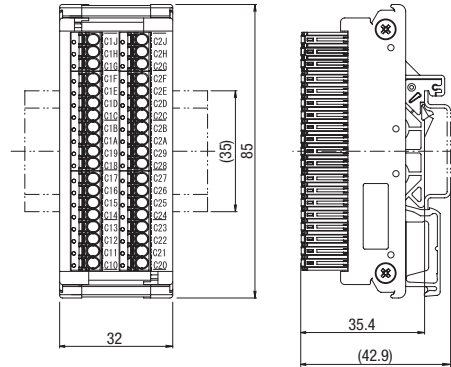
Specifications

| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Rated voltage | 24VDC (Class 2 or SELV+LIM) (Note 3)/100 to 240VAC (+10%, -15%), 50/60Hz | |
| Maximum operating voltage | 30VDC (Class 2 or SELV+LIM) (Note 4)/264VAC | |
| Maximum operating current (Note 1) | Common: 6A | |
| Wiring method for common | 19 common points + 19 common points | |
| Terminal block | Number of terminals | 38 terminals |
| | Applicable wire (Notes 2 and 3) | 0.2 to 1.5mm ² (24 to 16AWG) (Note 5) Sheath: φ2.8mm or less |
| | Wire strip length | 8 to 9mm (Maximum sheath outside diameter: φ2.8mm or less) |
| Module installation | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (measured with 500VDC insulation resistance tester) | |
| Weight | Approx. 60g | |

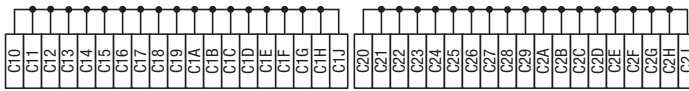
Note 1: Evaluation for UL certification is conducted using a resistance load as a condition.
 Note 2: Evaluation for UL certification is conducted with copper wires.
 Note 3: Select cables depending on the current value used.
 Note 4: Use a Class 2 power supply or an SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy Circuit) power supply.
 Note 5: For a wire to be connected to a terminal block, use a copper wire whose temperature standard is 75°C or higher.

External dimensions

(Unit: mm)

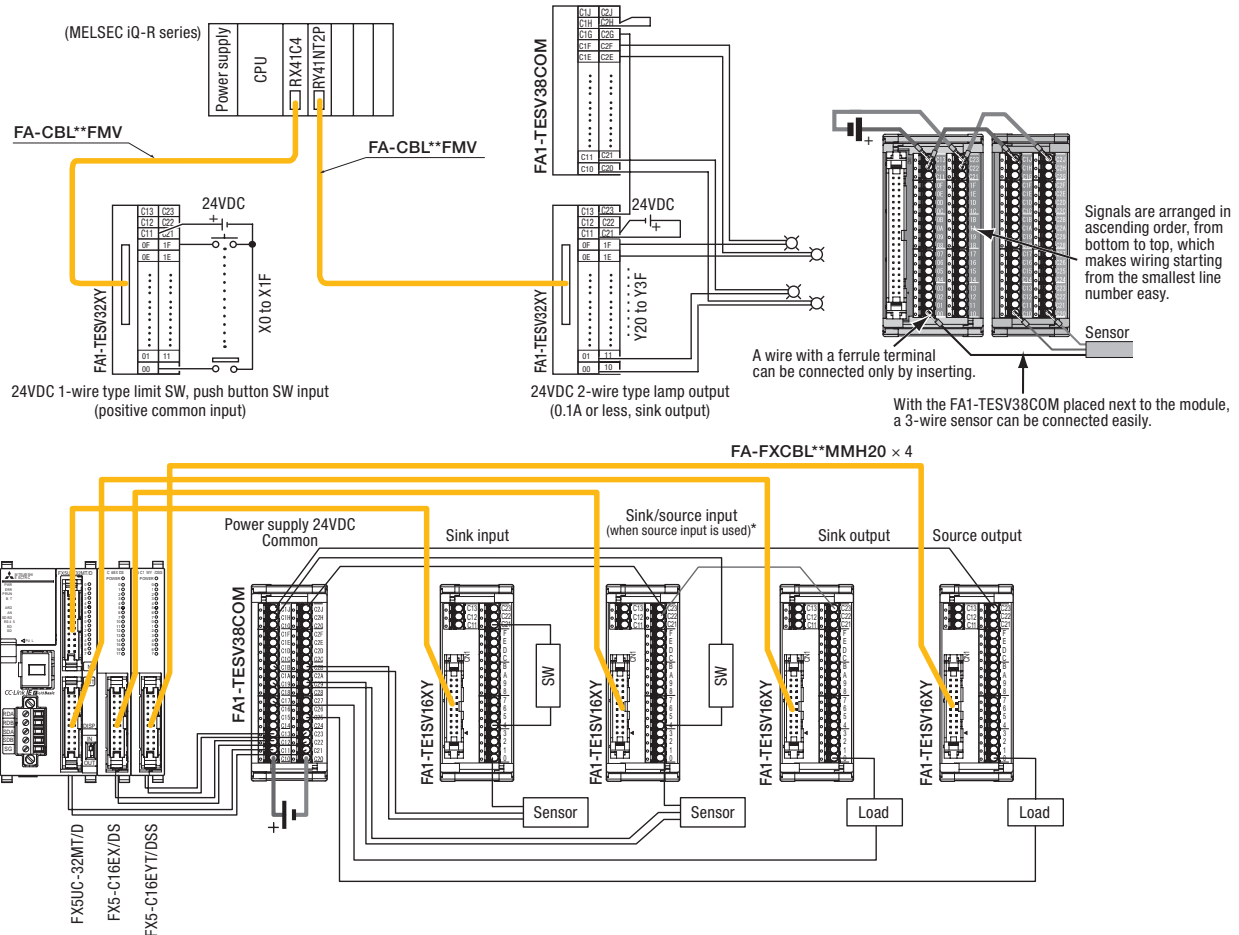


Connection diagram



Terminal block

Example of use

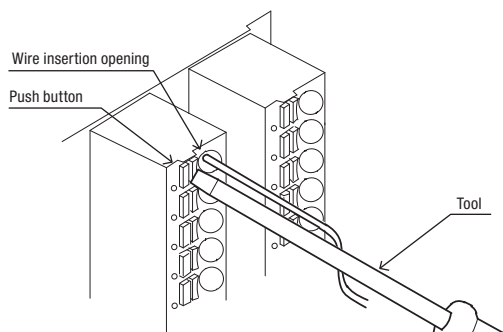


*: When sink input is used, reverse the polarity of 24VDC.

How to connect/remove a wire

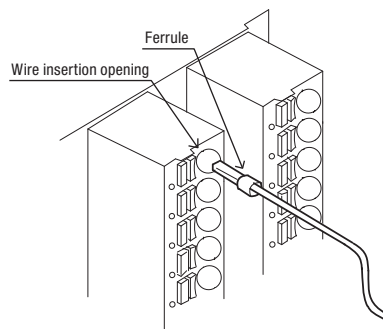
How to connect a stranded wire

- Strip off 8 to 9mm of the sheath of the wire.
- Twist the strands. *: Ensure that the strands are not excessively twisted, loose, or bent.
- Using a tool, push the push button forward sufficiently.
- While holding down the push button, insert the stranded wire into the wire insertion opening.
- After removing the tool, pull the stranded wire lightly and check that it is held firmly in place.



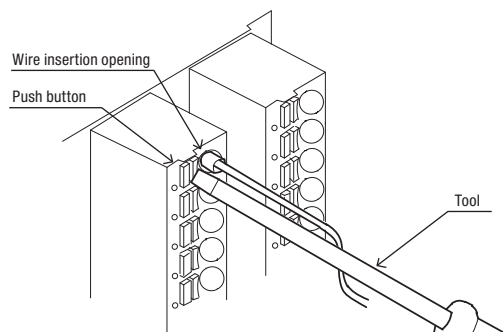
How to connect a wire with a ferrule terminal

- Insert the wire as-is into the wire insertion opening.
- Pull the wire lightly and check that it is held firmly in place.



Removal procedure (Common to a stranded wire and wire with a ferrule terminal)

- Using a tool, push the push button forward sufficiently.
- While holding down the push button, remove the wire from the wire insertion opening.



| Recommended tool for operating a push button | |
|----------------------------------------------|-----------------------------------------------------------|
| Manufacturer | WAGO Kontakttechnik GmbH & Co. KG |
| Model | 210-119SB (Mini type) 210-719 (Insulated shaft type) |
| Blade tip size | 2.5 × 0.4mm |

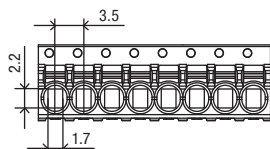
Applicable solderless terminal (Ferrule terminal)

Recommended ferrule terminal

| Manufacturer | Model | Applicable wire size | Crimping tool |
|-----------------------------------|---------|------------------------------------------|---------------------|
| WAGO Kontakttechnik GmbH & Co. KG | 216-302 | 0.08 to 0.34mm ² /28 to 22AWG | 206-220 |
| | | 0.34mm ² /24 and 22AWG | |
| | 216-201 | 0.5mm ² /22 and 20AWG | 206-204 206-1204 |
| | 216-202 | 0.75mm ² /20 and 18AWG | |

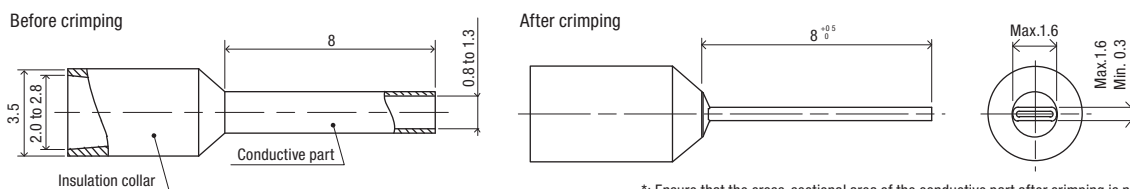
Terminal block shape

(Unit: mm)



Ferrule terminal dimensions

(Unit: mm)



*: Ensure that the cross-sectional area of the conductive part after crimping is not less than 0.48mm².



MELSEC-dedicated 16-point 1-wire type

FA1-TE1SV16XY

- This product is dedicated to the MELSEC connector-type I/O module and used to convert 16-point connectors into a spring clamp terminal block.
- The vertical type terminal block with 42mm wide contributes to downsizing of system.
- Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
- A device such as a 3-wire sensor can be easily connected by placing a common terminal block next to the spring clamp type 16-point junction terminal block.
- Using ferrule terminals enables push-in connections.

Related products FA1-TESV38COM P.128

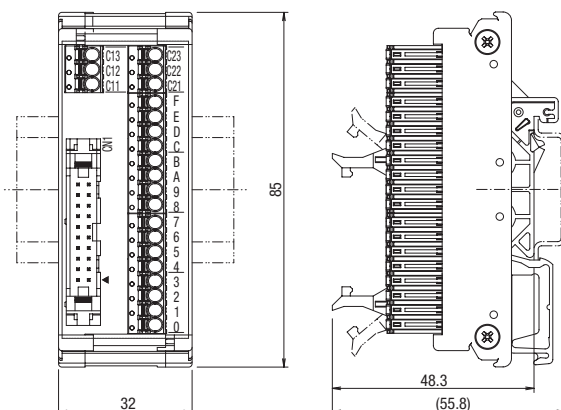
Specifications

| Item | Specifications | |
|------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Rated voltage | 24VDC (Class 2 or SELV+LIM) (Note 4) | |
| Maximum operating voltage | 30VDC (Class 2 or SELV+LIM) (Note 4) | |
| Maximum operating current (Note 1) | Signal: 1A, Common: 2A | |
| Wiring method for common | 16 points/3 (24V) common point + 3 (0V) common point | |
| Terminal block | Number of terminals | 22 terminals |
| | Applicable wire (Notes 2 and 3) | 0.2 to 1.5mm ² (24 to 16AWG), sheath: ϕ 2.8mm or less |
| | Wire strip length | 8 to 9mm (Maximum sheath outside diameter: ϕ 2.8mm or less) |
| Module installation | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ℓ (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10M Ω or more (measured with 500VDC insulation resistance tester) | |
| Weight | Approx. 50g | |

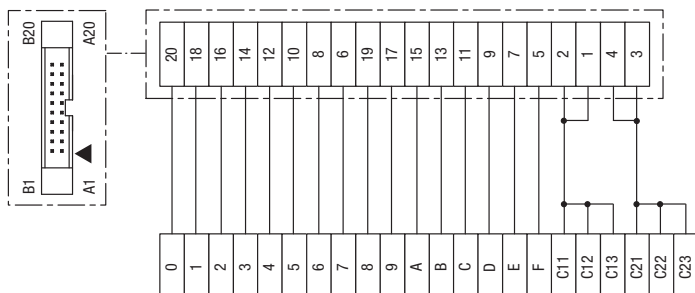
Note 1: Evaluation for UL certification is conducted using a resistance load as a condition.
 Note 2: Evaluation for UL certification is conducted with copper wires.
 Note 3: Select cables depending on the current value used.
 Note 4: Use a Class 2 power supply or an SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy Circuit) power supply.

External dimensions

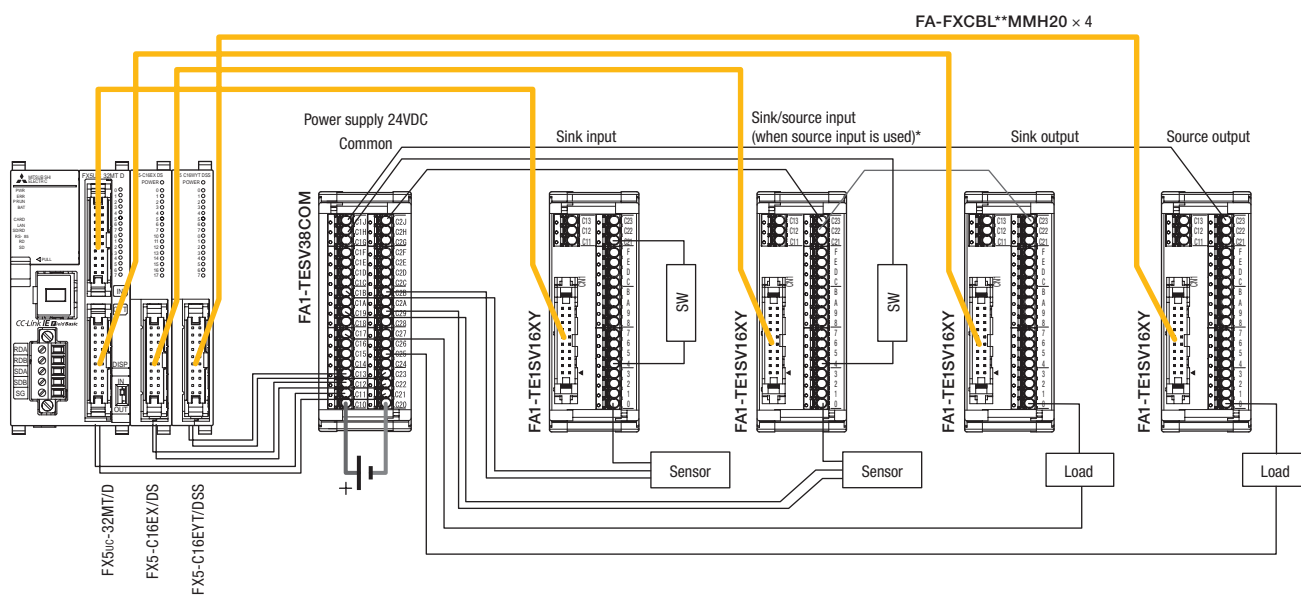
(Unit: mm)



Connection diagram



Example of use



*: When sink input is used, reverse the polarity of 24VDC.

Spring clamp terminal block conversion adapter



Spring clamp terminal block conversion adapter

FA1-TE40PA

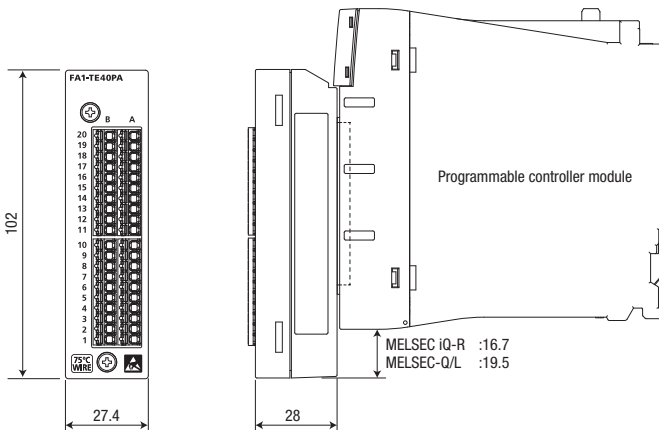
- Front connection does not require any separate terminal block, enabling installation within a limited space of the control panel or the system.
- Uniform connection quality is guaranteed because no soldering skills are required.
- Signal wires can be rewired easily when the system is extended or repaired. The spring clamp type supports large wire sizes.
- A tester port is provided for continuity check, reducing the time required for startup and maintenance.
- Use of ferrules enables push-in connections.

Specifications

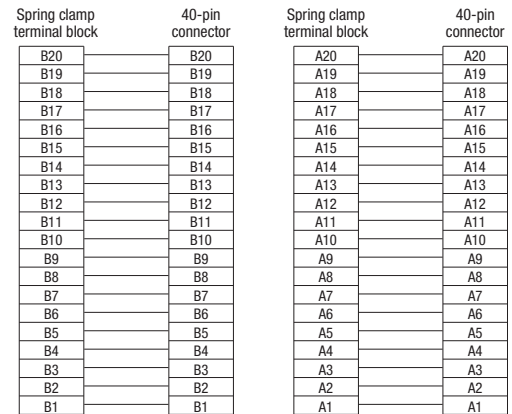
| Item | Specifications | |
|------------------------------------------|-----------------------------------------------------------------------------------------------|-----|
| Rated voltage | 24VDC (Class 2) | |
| Maximum operating voltage | 30VDC (Class 2) | |
| Maximum operating current | 0.5A/pt, 2A/pt (1A, 2A, 1B, 2B) | |
| Terminal block | No. of terminals | 40 |
| | Wire strip length | 8mm |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10M Ω or more (measured with 500VDC insulation resistance tester) | |
| Weight | Approx. 100g | |

External dimensions

(Unit: mm)



Connection diagram



Screw terminal type



MELSEC-dedicated 16-point 1-wire type

FA-TB16XY

- This product is used to branch the 32-point connectors of a MELSEC connector-type I/O module into 16-point units by using a branch cable, and used separately from another 16-point module.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

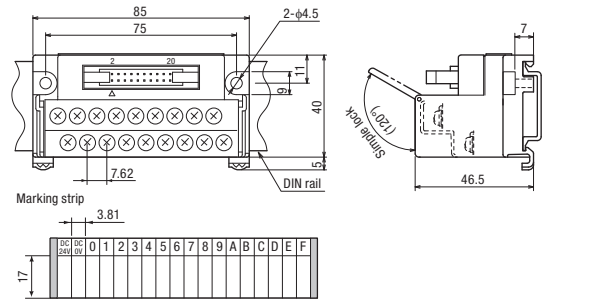
Specifications

| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 16 points/1 (24V) common point + 1 (0V) common point | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 18P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Aℓ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 130g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.

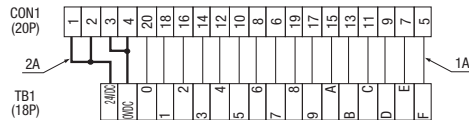
Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



(Unit: mm)

Connection diagram



MELSEC-dedicated 32-point 1-wire type

FA-TB32XY, FA-TB16X16Y

- This product is dedicated to the MELSEC connector-type I/O module and used to convert 32-point connectors into a 32-point terminal block using a 40-core cable.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.
- FA-TB16X16Y is used for CC-Link system I/O combined modules for Mitsubishi Electric programmable controllers (such as AJ65SBTCF1-32DT).

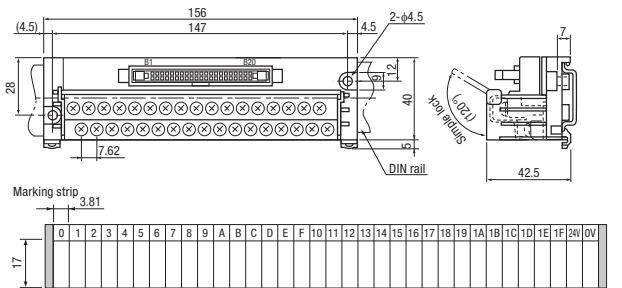
Specifications

| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | FA-TB32XY | FA-TB16X16Y |
| No. of points, I/O device No. | 32 points, X0 to X1F or Y0 to Y1F | 32 points, X0 to XF, Y10 to Y1F (numbers are fixed) |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 32 points/1 (24V) common point + 1 (0V) common point | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Aℓ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 160g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.

Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

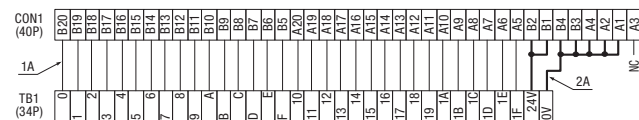


(Unit: mm)

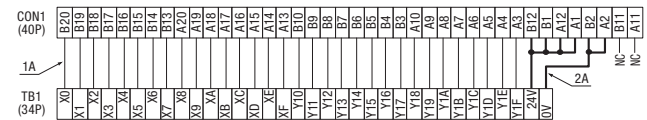
*: 0 to F and 10 to 1F on the marking strip of the FA-TB16X16Y indicates X0 to XF and Y10 to Y1F.

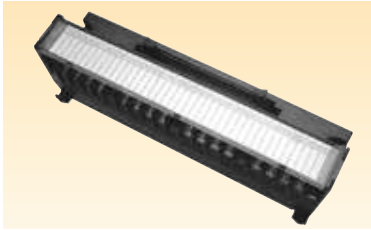
Connection diagram

<FA-TB32XY>



<FA-TB16X16Y>





MELSEC-dedicated 32-point 1-wire small-size type FA-TBS32XY

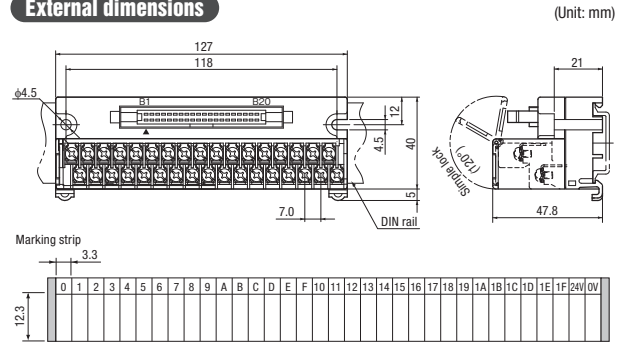
- This product is dedicated to the MELSEC connector-type I/O module and used to convert 32-point connectors into a 32-point terminal block using a 40-core cable.
- Screw fall prevention and screw holding mechanisms are provided, enabling easy installation of round solderless terminals.
- Black screws are provided every five terminals, making terminal locations easily identified.
- In the frames of the marking strip, terminal number locations can be easily identified due to thick lines at every four upper/lower terminals.
- The terminal numbers are the same as the MELSEC signal numbers, preventing wiring mistakes.
- The module can be installed using a DIN rail or screws.

Specifications

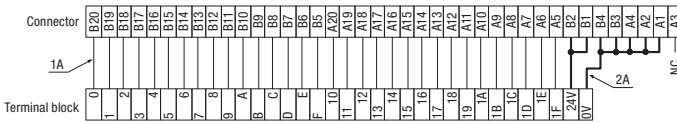
| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 32 points, X0 to X1F or Y0 to Y1F | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 32 points/1 (24V) common point + 1 (0V) common point | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7mm pitch, with screw holding and fall-prevention mechanism |
| | Applicable wire, tightening torque | 0.3 to 1.25mm ² (with solderless terminal used), 43 to 58N-cm (4.4 to 5.9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 25mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 150g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram



MELSEC-dedicated 32-point 1-wire 1-level type FA-TB1L32XY

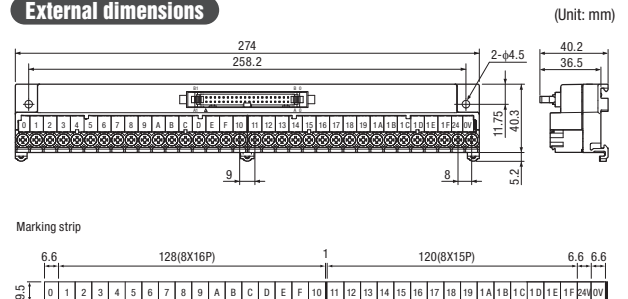
- This product is dedicated to the MELSEC connector-type I/O module and used to convert 32-point connectors into a 32-point terminal block using a 40-core cable.
- The terminal block is 1-level type which facilitates screw tightening at wiring, and wiring check and retightening at maintenance.
- Using M3.5 terminal screws, the product supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.
- Screw fall prevention mechanism prevents missing of screws.
- Round and Y-type solderless terminals can be used.
- The Mitsubishi Electric programmable controller input/output signal (0 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

Specifications

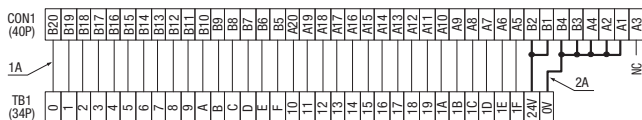
| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 32 points, X0 to X1F or Y0 to Y1F | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 32 points/1 (24V) common point + 1 (0V) common point | |
| Terminal block | Terminal screw | M3.5 screw, number of terminals: 34P, 8mm pitch (center: 9mm), screw holding mechanism |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 70 to 110N-cm (7.14 to 11.22kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 230g | |

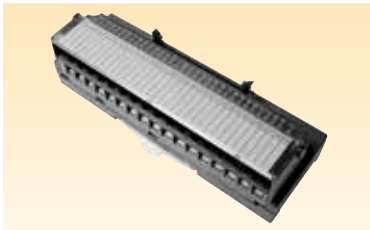
Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





MELSEC-dedicated 32-point 1-wire type with indication

FA-TB32XYL, FA-TB32XYH

- This product is dedicated to the MELSEC connector-type I/O module and used to convert 32-point connectors into a 32-point terminal block using a 40-core cable.
- This product can indicate the operating status of the power supply and signals. The FA-TB32XYL can be used for positive common input and sink output, and the FA-TB32XYH can be used for negative common input and source output.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

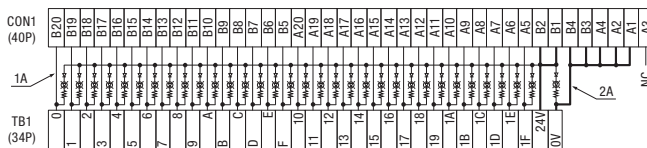
Specifications

| Item | Specifications | |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | FA-TB32XYL | FA-TB32XYH |
| Input/output of programmable controller connected | Positive common input or sink output | Negative common input or source output |
| No. of points, I/O device No. | 32 points, X0 to X1F or Y0 to Y1F (with indication for power supply and 0 to 1F signals, consumption current for indication: 4mA/point at 24VDC) | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 19.2 to 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 32 points/1 (24V) common point + 1 (0V) common point | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34F, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 x 0.7mm x 20mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground) | |
| Weight | Approx. 200g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

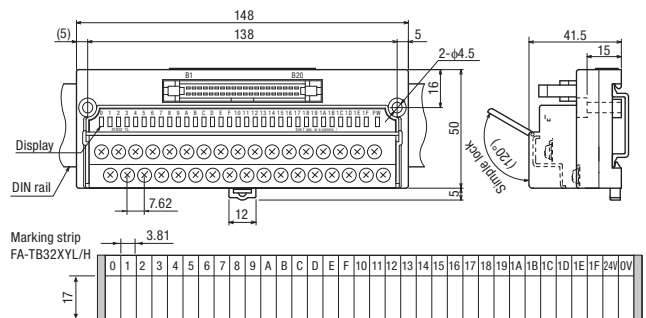
Connection diagram

<FA-TB32XYL>

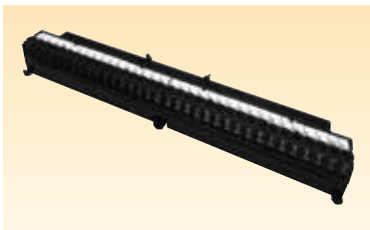
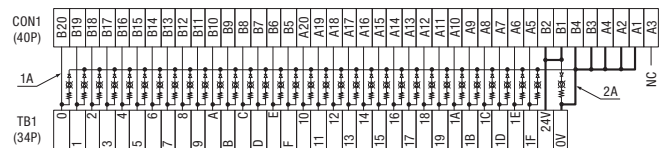


External dimensions

(Unit: mm)



<FA-TB32XYH>



MELSEC-dedicated 16-point 2-wire 1-level type

FA-TB1L16XYP, FA-TB1L16XYN

- This product is used to branch the 32-point connectors of a MELSEC connector-type I/O module into 16-point units by using a branch cable, and used separately from another 16-point module.
- As the product has one common terminal per one signal terminal, an external common terminal block is not required.
- The terminal block is 1-level type which facilitates screw tightening at wiring, and wiring check and retightening at maintenance.
- Using M3.5 terminal screws, the product supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.
- Screw fall prevention mechanism prevents missing of screws.
- Round and Y-type solderless terminals can be used.
- The Mitsubishi Electric programmable controller input/output signal (0 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

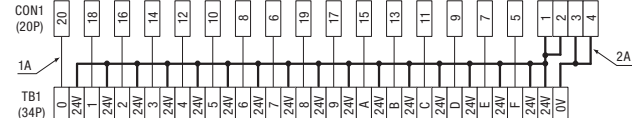
Specifications

| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| | FA-TB1L16XYP | FA-TB1L16XYN |
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 16 points / 17 (24V) common points + 1 (0V) common point | 16 points / 1 (24V) common points + 17 (0V) common point |
| Terminal block | Terminal screw | M3.5 screw, number of terminals: 34P, 8mm pitch (center: 9mm), screw holding mechanism |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 70 to 110N-cm (7.14 to 11.22kgf-cm) |
| Module installation | Screw | M4 x 0.7mm x 12mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 230g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

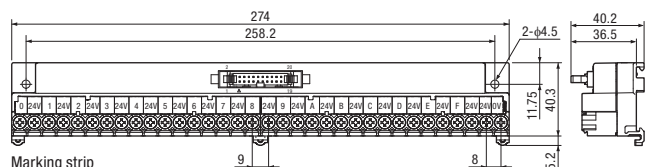
Connection diagram

<FA-TB1L16XYP>

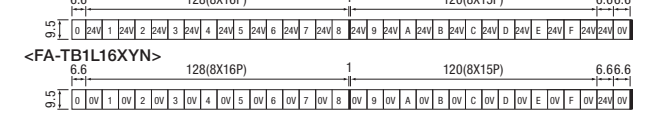


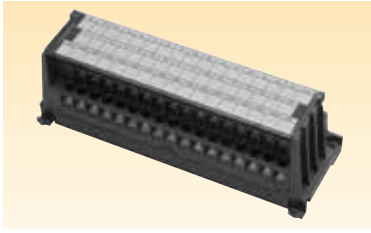
External dimensions

(Unit: mm)



<FA-TB1L16XYN>





MELSEC-dedicated 32-point 2-wire type FA-TB32XYP3, FA-TB32XYN3

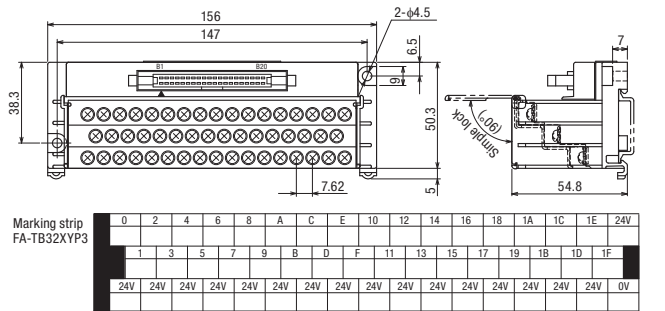
- This product is dedicated to the MELSEC connector-type I/O module and used to convert 32-point connectors into a 32-point terminal block using a 40-core cable.
- As the product has one common terminal per two signal terminals, an external common terminal block is not required.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

Specifications

| Item | Specifications | |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | FA-TB32XYP3 | FA-TB32XYN3 |
| No. of points, I/O device No. | 32 points, X0 to X1F or Y0 to Y1F | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 32 points/16 common (24VDC) 32 points/16 common (0V) | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 50P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A λ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 100M Ω or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 280g | |

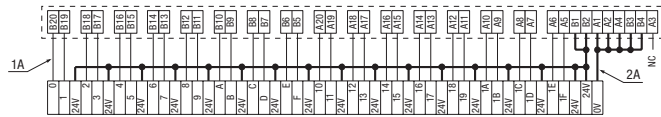
Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

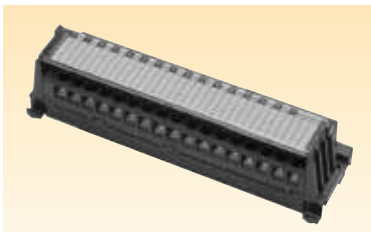
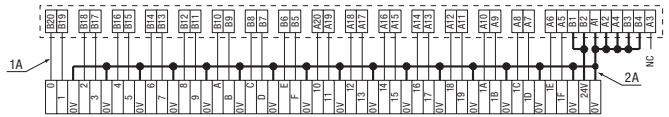


Connection diagram

<FA-TB32XYP3>



<FA-TB32XYN3>



MELSEC-dedicated 16-point 3-wire type (16 points/8 (24V) common points + 8 (0V) common points) FA-TB16XYPN

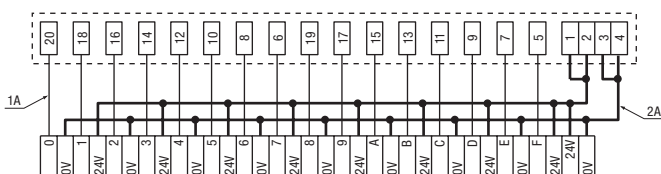
- This product is used to branch the 32-point connectors of a MELSEC connector-type I/O module into 16-point units by using a branch cable, and used separately from another 16-point module.
- As the product has two common terminals (24V and 0V) per two signal terminals, an external common terminal block is not required.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

Specifications

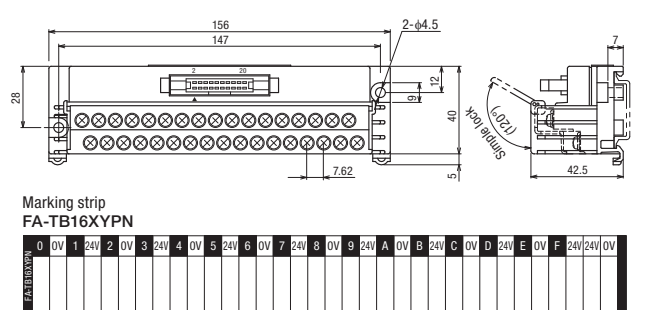
| Item | Specifications | |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 16 points/8 (24V) common points + 8 (0V) common point | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A λ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 100M Ω or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 180g | |

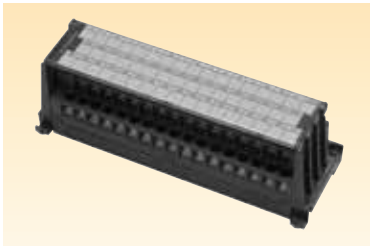
Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

Connection diagram



External dimensions





MELSEC-dedicated 16-point 3-wire type (16 points/16 (24V) common points + 16 (0V) common points)

FA-TB16XYPN3

- This product is used to branch the 32-point connectors of a MELSEC connector-type I/O module into 16-point units by using a branch cable, and used separately from another 16-point module.
- As the product has one 24V common terminal and one 0V common terminal per one signal terminal, an external common terminal block is not required.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

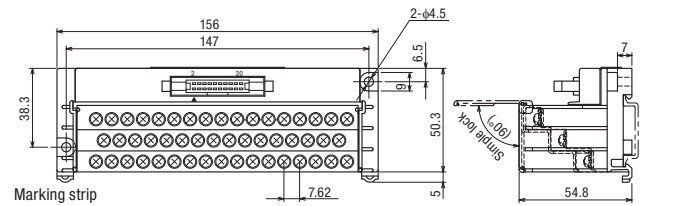
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 16 points / 16 (24V) common points + 16 (0V) common point | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 50P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 x 0.7mm x 12mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 100MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 275g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.

Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

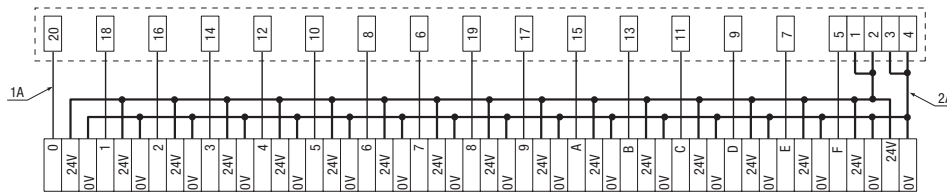


(Unit: mm)

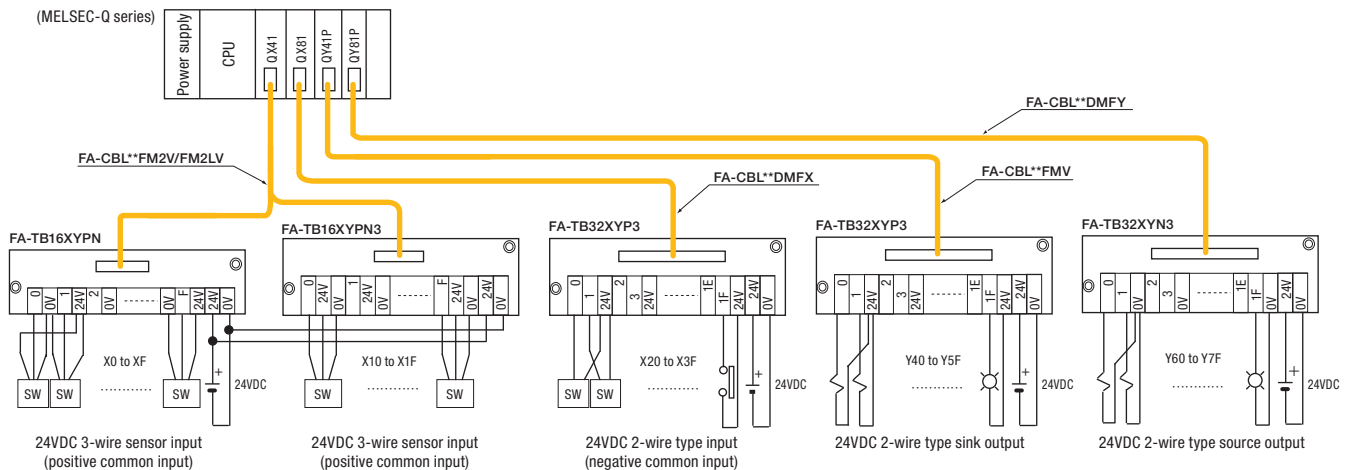
Marking strip
FA-TB16XYPN3

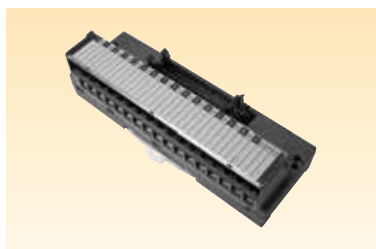
| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F | 24V | |
| 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V | 24V |
| 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V |

Connection diagram



Example of use





MELSEC-dedicated 16-point 2-wire distributed type FA-TB16XY1N, FA-TB16XY2N

- This product is dedicated to the MELSEC connector-type I/O module and used to branch the 32-point connectors into 16-point units using a cable.
- As the product has one 0V common terminal per one signal terminal, the product can be used with other 8-point or 16-point distributed type modules.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to F, 10 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

Related products Connector cover P.145

Specifications

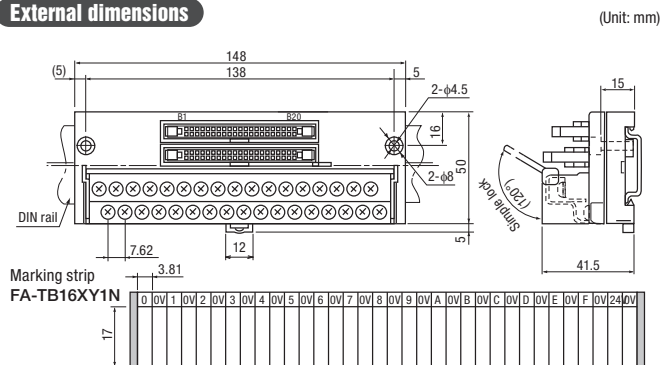
| Item | Specifications | |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | FA-TB16XY1N | FA-TB16XY2N |
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | 16 points, X10 to X1F or Y10 to Y1F |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 16 points/16 common (0V) | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A α (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10M Ω or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 180g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.

Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

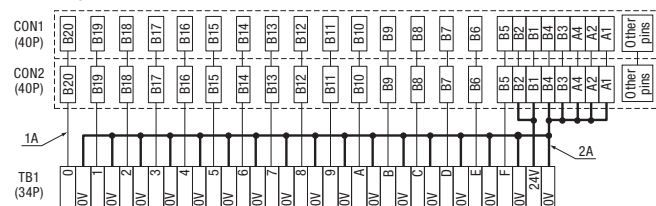
Note 3: The total length of cables between I/O modules and distributed type modules (such as FA-CBL**FMV, FA-CBL**MMH) must be 20m or less.

External dimensions

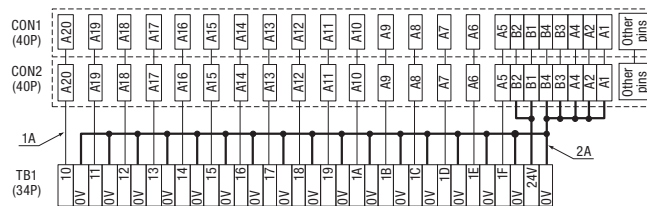


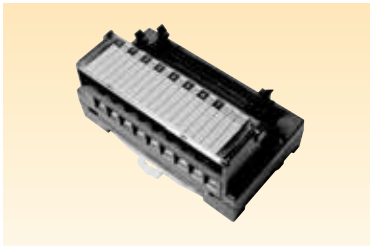
Connection diagram

<FA-TB16XY1N>



<FA-TB16XY2N>





MELSEC-dedicated 8-point 3-wire distributed type FA-TB8XY1, FA-TB8XY2, FA-TB8XY3, FA-TB8XY4

- This product is dedicated to the MELSEC connector-type I/O module and used to branch the 32-point connectors into 8-point units using a cable.
- As the product has two common terminals (24V and 0V) per two signal terminals, the product can be used with other 16-point distributed type modules.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to 7, 8 to F, 10 to 17, 18 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

Related products Connector cover P.145

Specifications

| Item | Specifications | | | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| | FA-TB8XY1 | FA-TB8XY2 | FA-TB8XY3 | FA-TB8XY4 |
| I/O device No. | X0 to X7 or Y0 to Y7 | X8 to XF or Y8 to YF | X10 to X17 or Y10 to Y17 | X18 to X1F or Y18 to Y1F |
| No. of points | 8 | | | |
| Rated voltage | 24VDC | | | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | | | |
| Wiring method for common | 8 points / 4 (24V) common points + 4 (0V) common point | | | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 18P, 7.62mm pitch, spring-up screw with finger protection cover | | |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) | | |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) | | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A? (IEC 60715 compliant) | | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | | | |
| Weight | Approx. 130g | | | |

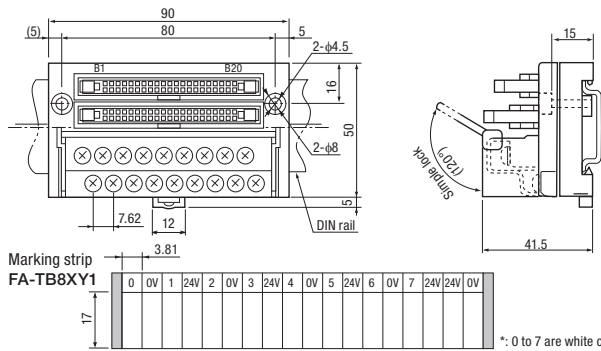
Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.

Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

Note 3: The total length of cables between I/O modules and distributed type modules (such as FA-CBL**FMV, FA-CBL**MMH) must be 20m or less.

External dimensions

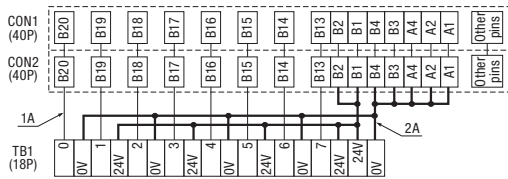
(Unit: mm)



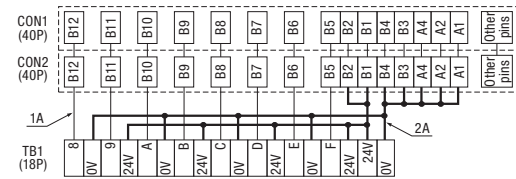
*: 0 to 7 are white characters.

Connection diagram

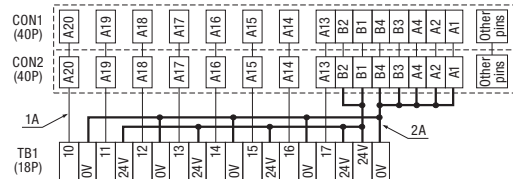
<FA-TB8XY1>



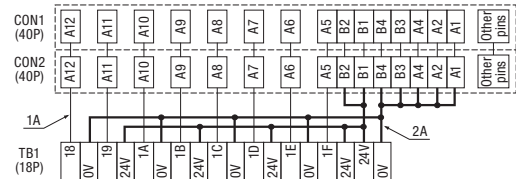
<FA-TB8XY2>

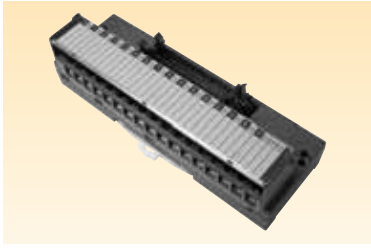


<FA-TB8XY3>



<FA-TB8XY4>





MELSEC-dedicated 16-point 3-wire distributed type FA-TB16XY1, FA-TB16XY2

- This product is dedicated to the MELSEC connector-type I/O module and used to branch the 32-point connectors into 16-point units using a cable.
- As the product has one 24V common terminal and one 0V common terminal per two signal terminals, the product can be used with other distributed type modules.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to F, 10 to 1F) numbers are indicated on the marking strip, making wiring easy.
- The module can be installed using a DIN rail or screws.

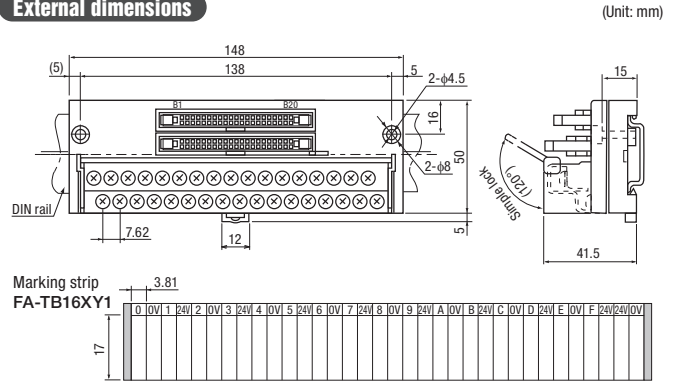
Related products Connector cover P.145

Specifications

| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | FA-TB16XY1 | FA-TB16XY2 |
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | 16 points, X10 to X1F or Y10 to Y1F |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | 28.8VDC, 1A (each signal terminal), 2A (each power supply terminal) | |
| Wiring method for common | 16 points/8 (24V) common points + 8 (0V) common point | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 180g | |

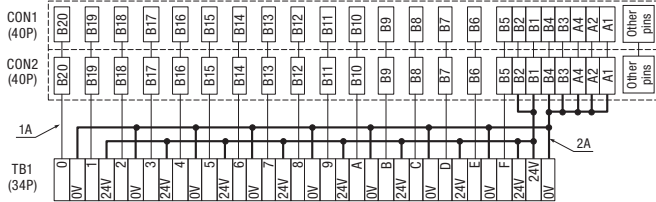
Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 3: The total length of cables between I/O modules and distributed type modules (such as FA-CBL**FMV, FA-CBL**MMH) must be 20m or less.

External dimensions

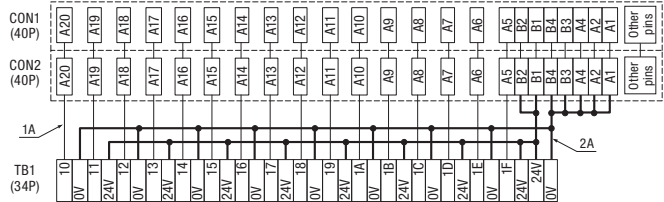


Connection diagram

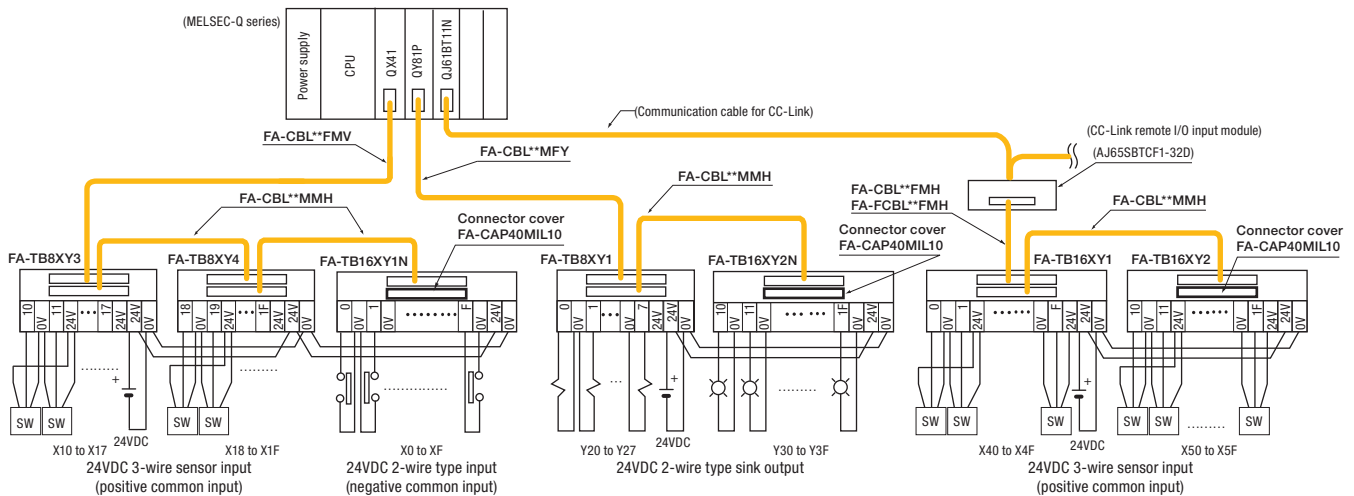
<FA-TB16XY1>



<FA-TB16XY2>



Example of use



*: When using distributed type, the total length of connection cable must be 20m or shorter.

16-point I/O terminal block (16 points/2 common)

FA-FXTB16XY



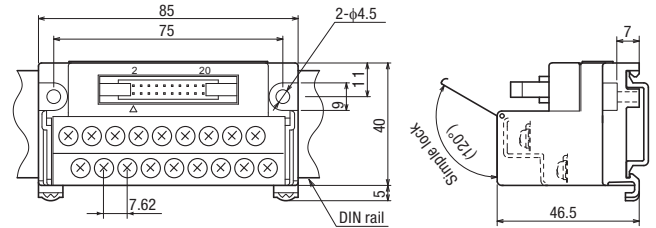
- Mitsubishi Electric micro programmable controller iQ-F/F series connector-type input signals (24VDC inputs) are converted into 16-point terminal block inputs (when connected to the input connector of a programmable controller).
- Mitsubishi Electric micro programmable controller iQ-F/F series connector-type output signals (transistor outputs) are converted into 16-point terminal block outputs (when connected to the output connector of a programmable controller).
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

Specifications

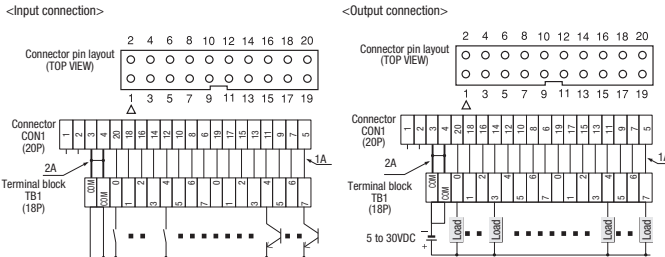
| Item | Specifications | |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device | 16 points (16 points for input X or 16 points for output Y) | |
| Maximum operating voltage/current | 48VDC, 1A (each signal terminal), 2A (common terminal) | |
| Wiring method for common | 16 points/2 commons | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 18P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.5 to 1.25mm ² (with solderless terminal used), 58.8 to 88.3N·cm |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N·cm |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage | 500VAC for 1 minute (between all DC external terminals and ground) | |
| Insulation resistance (Initial value) | 100MΩ or more (measured with 500VDC insulation resistance tester) (between all DC external terminals and ground) | |
| Weight | Approx. 130g | |

External dimensions

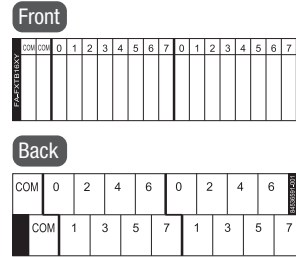
(Unit: mm)



Connection diagram



Terminal board

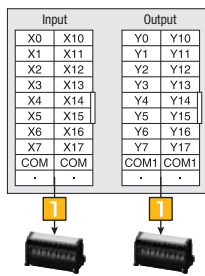


Connection to FX programmable controller main unit/CPU module/I/O module and extension block

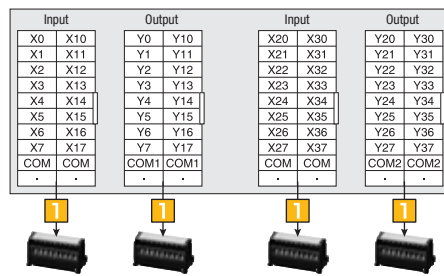
The following is an example of connection to an FX programmable controller main unit/CPU module/I/O module and extension block.

- Configuration example of connection to FX programmable controller main unit/CPU module

FX3UC-32M, FX3GC-32M,
FX5UC-32M, FX1NC-32M



FX3UC-64M, FX5UC-64M



For the connection cable 1, select one from the following.

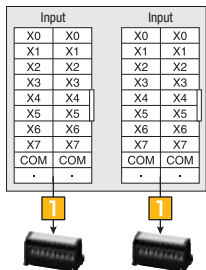
Connection cables 1

- FA-FXCBL06MMH20 (0.6m)
- FA-FXCBL10MMH20 (1.0m)
- FA-FXCBL15MMH20 (1.5m)
- FA-FXCBL20MMH20 (2.0m)
- FA-FXCBL30MMH20 (3.0m)

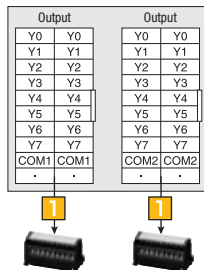


- Configuration example of connection to FX programmable controller I/O module and extension block

FX2NC-32EX



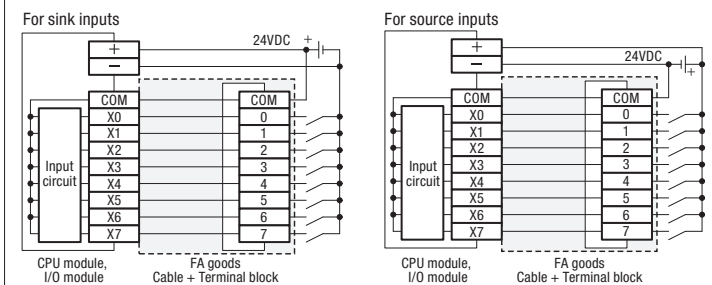
FX2NC-32EYT

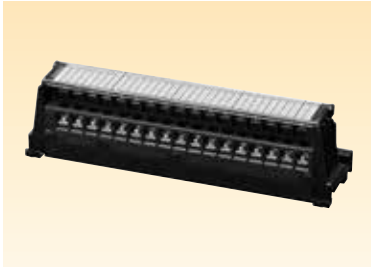


Precautions when connecting a sink/source shared type input module

For sink/source shared type inputs, as the wiring shown in the manual published by Mitsubishi Electric, commons need to be connected to the module power supply. The following shows the connection example.

Target modules : FX5UC-32MT/DSS, FX5-C32EX/DS, FX5-C32ET/DSS





32-point input terminal block (32 points/2 common)

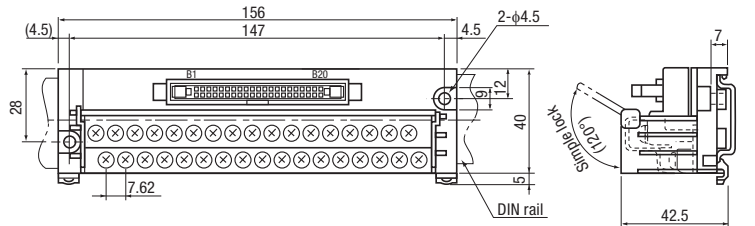
FA-FXTB32X

- Mitsubishi Electric micro programmable controller iQ-F/F series connector-type input signals (24VDC inputs) are converted into 32-point terminal block inputs
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

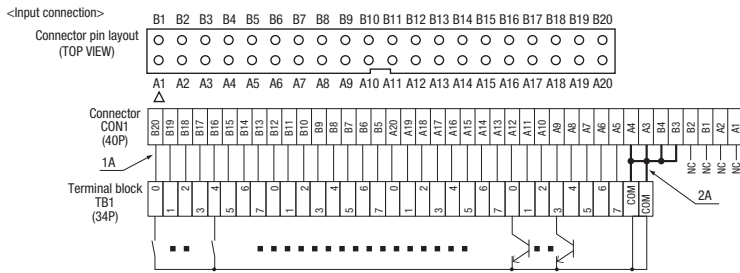
Specifications

| Item | Specifications | |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device | 32 points (input X) | |
| Maximum operating voltage/current | 48VDC, 1A (each signal terminal), 2A (common terminal) | |
| Wiring method for common | 32 points/2 commons | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.5 to 1.25mm ² (with solderless terminal used), 58.8 to 88.3N-cm |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N-cm |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage | 500VAC for 1 minute (between all DC external terminals and ground) | |
| Insulation resistance (initial value) | 100MΩ or more (measured with 500VDC insulation resistance tester) (between all DC external terminals and ground) | |
| Weight | Approx. 160g | |

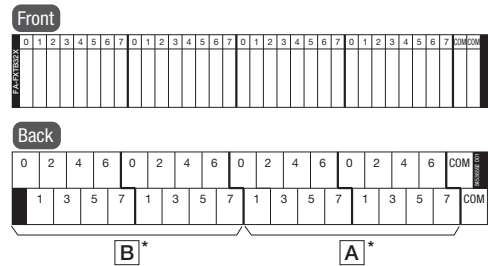
External dimensions



Connection diagram



Terminal board



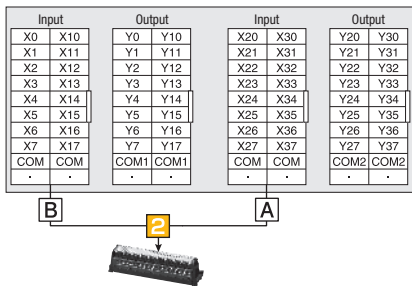
*: This shows the attached connector identification (side A or B).

Connection to FX programmable controller main unit/CPU module/I/O module and extension block

The following is an example of connection to an FX programmable controller main unit/CPU module/I/O module and extension block.

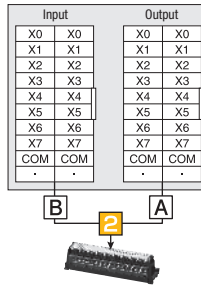
- Configuration example of connection to FX programmable controller main unit/CPU module

FX3uc-64M, FX5uc-64M



- Configuration example of connection to FX programmable controller I/O module and extension block

FX2NC-32EX



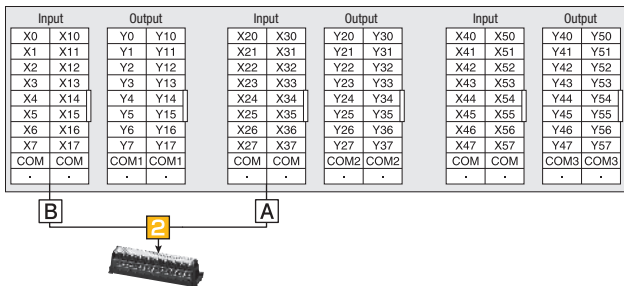
- For the connection cable **2**, select one from the following.

Connection cables **2**

- FA-FXCBL06MM2H (0.6m)
- FA-FXCBL10MM2H (1.0m)
- FA-FXCBL15MM2H (1.5m)
- FA-FXCBL20MM2H (2.0m)
- FA-FXCBL30MM2H (3.0m)



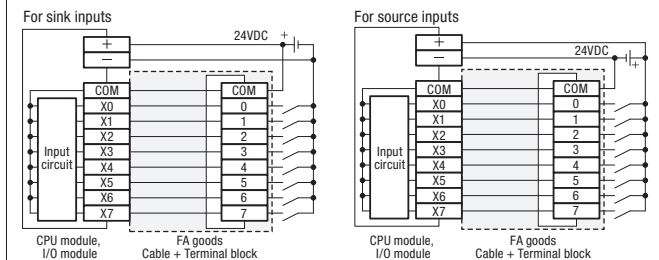
(Connection example) FX3uc-96M, FX5uc-96M

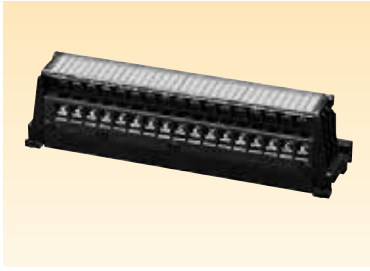


Precautions when connecting a sink/source shared type input module

For sink/source shared type inputs, as the wiring shown in the manual published by Mitsubishi Electric, commons need to be connected to the module power supply. The following shows the connection example.

Target modules : FX5UC-32MT/DSS, FX5-C32EX/DS, FX5-C32ET/DSS





32-point output terminal block (32 points/2 commons (16 points/common))

FA-FXTB32Y

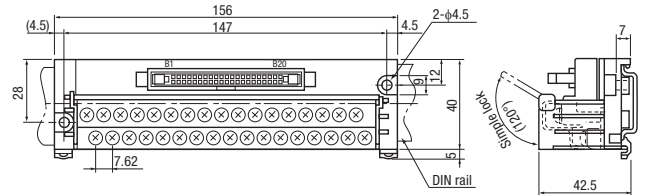
- Mitsubishi Electric micro programmable controller iQ-F/F series connector-type output signals (transistor outputs) are converted into 32-point terminal block outputs.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

Specifications

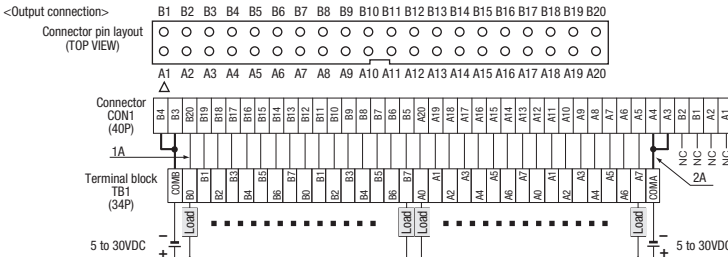
| Item | Specifications | |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device | 32 points (output Y) | |
| Maximum operating voltage/current | 48VDC, 1A (each signal terminal), 2A (common terminal) | |
| Wiring method for common | 32 points/2 commons (16 output points/common) | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.5 to 1.25mm ² (with solderless terminal used), 58.8 to 88 3N·cm |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N·cm |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage | 500VAC for 1 minute (between all DC external terminals and ground) | |
| Insulation resistance (initial value) | 100MΩ or more (measured with 500VDC insulation resistance tester) (between all DC external terminals and ground) | |
| Weight | Approx. 160g | |

External dimensions

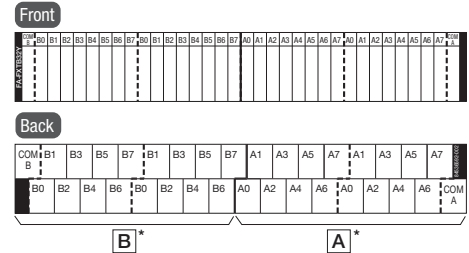
(Unit: mm)



Connection diagram



Terminal board



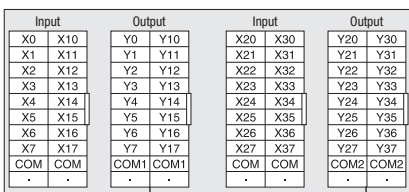
*: This shows the attached connector identification (side A or B).

Connection to FX programmable controller main unit/CPU module/I/O module and extension block

The following is an example of connection to an FX programmable controller main unit/CPU module/I/O module and extension block.

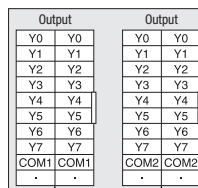
- Configuration example of connection to FX programmable controller main unit/CPU module

FX3uc-64M, FX3uc-64M



- Configuration example of connection to FX programmable controller I/O module and extension block

FX2NC-32EYT



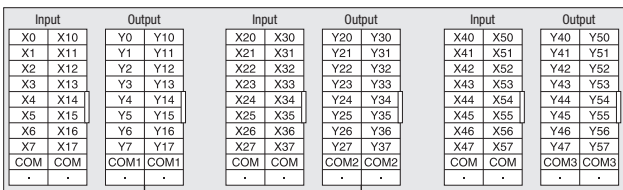
For the connection cable 2, select one from the following.

Connection cables 2

- FA-FXCBL06MM2H (0.6m)
- FA-FXCBL10MM2H (1.0m)
- FA-FXCBL15MM2H (1.5m)
- FA-FXCBL20MM2H (2.0m)
- FA-FXCBL30MM2H (3.0m)

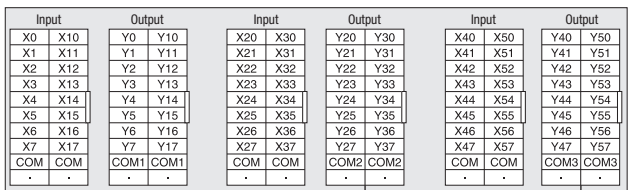


(Connection example 1)



FX3uc-96M, FX3uc-96M

(Connection example 2)





16-point input/16-point output mixed terminal block (32 points/2 commons (16 points/common))

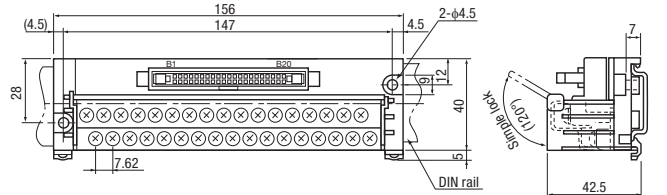
FA-FXTB16X16Y

- Mitsubishi Electric micro programmable controller iQ-F/F series connector-type 16-point input signals (24VDC inputs) and 16-point output signals (transistor outputs) are converted into 32-point terminal block inputs and outputs.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

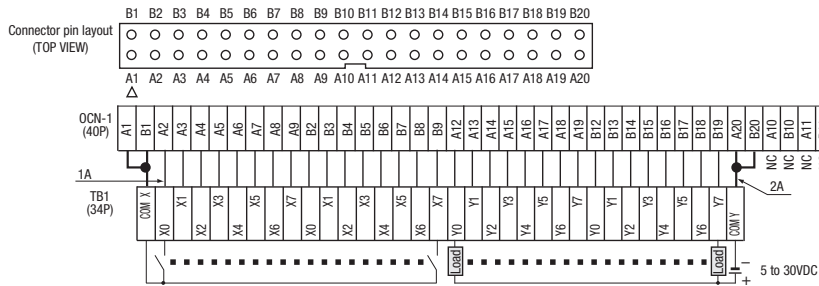
Specifications

| Item | Specifications | |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device | 32 points (16 points for input X, 16 points for output Y) | |
| Maximum operating voltage/current | 48VDC, 1A (each signal terminal), 2A (common terminal) | |
| Wiring method for common | 32 points/2 commons (16 points/common) | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.5 to 1.25mm ² (with solderless terminal used), 58.8 to 88 3N·cm |
| Module installation | Screw | M4 × 0.7mm × 12mm or more, tightening torque: 78 to 118N·cm |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage | 500VAC for 1 minute (between all DC external terminals and ground) | |
| Insulation resistance | 100MΩ or more (measured with 500VDC insulation resistance tester) (between all DC external terminals and ground) | |
| Weight | Approx. 160g | |

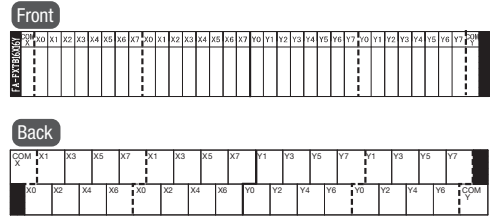
External dimensions



Connection diagram



Terminal board

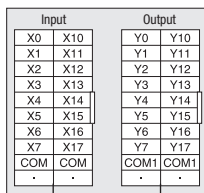


Connection to FX programmable controller main unit/CPU module/I/O module

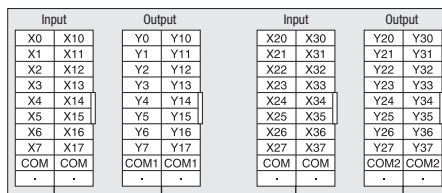
The following is an example of connection to an FX programmable controller main unit/CPU module/I/O module.

- Configuration example of connection to FX programmable controller main unit / CPU module / I/O module

FX3UC-32M, FX3GC-32M, FX5UC-32M, FX1NC-32M



FX3UC-64M, FX5UC-64M



For the connection cable **4**, select one from the following.

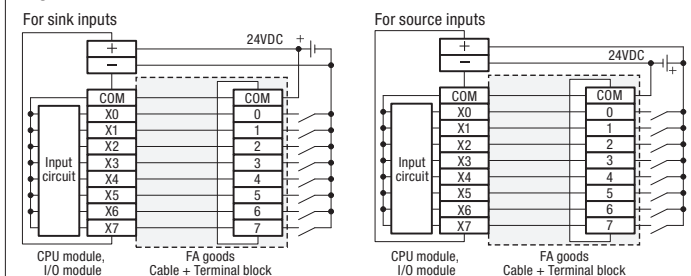
Connection cables **4**

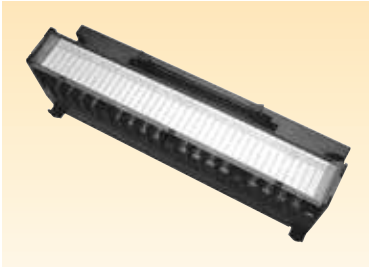
- FA-FXCBL06MM2H16X16Y (0.6m)
- FA-FXCBL10MM2H16X16Y (1.0m)
- FA-FXCBL15MM2H16X16Y (1.5m)
- FA-FXCBL20MM2H16X16Y (2.0m)
- FA-FXCBL30MM2H16X16Y (3.0m)

Precautions when connecting a sink/source shared type input module

For sink/source shared type inputs, as the wiring shown in the manual published by Mitsubishi Electric, commons need to be connected to the module power supply. The following shows the connection example.

Target modules : FX5UC-32MT/DSS, FX5-C32EX/DS, FX5-C32ET/DSS





General-purpose 40-point small type FA-TBS40P

- Signals from the 40P connectors of a general-purpose controller (including non-Mitsubishi PLCs) are converted into 40P screw terminal block outputs.
- As one signal is connected to one terminal, this product can be used as a general-purpose 40-point junction terminal block (screw terminal type).
- Screw fall prevention and screw holding mechanisms are provided, enabling easy installation of round solderless terminals.
- Black screws are provided every five terminals, making terminal locations easily identified.
- The module can be installed using a DIN rail or screws.

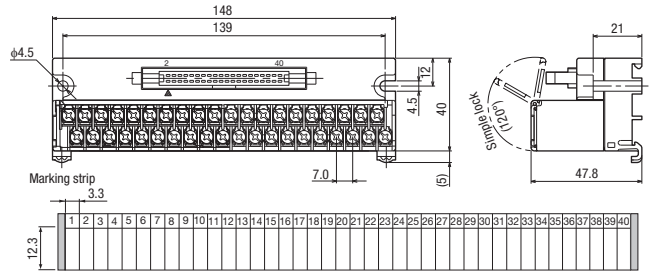
Specifications

| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| No. of points | 40 points, general-purpose | |
| Maximum operating voltage/current | 48VDC, 1A/point | |
| Wiring method for common | - | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 40P, 7mm pitch, with screw holding and fall-prevention mechanism |
| | Applicable wire, tightening torque | 0.3 to 1.25mm ² , 43 to 58N-cm (4.4 to 5.9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 25mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 190g | |

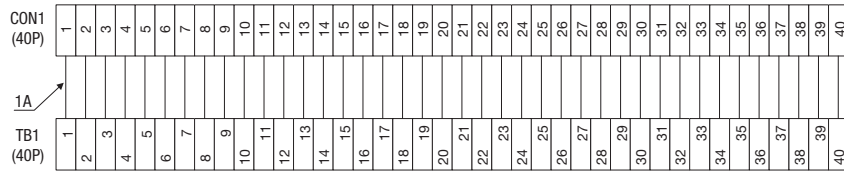
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)

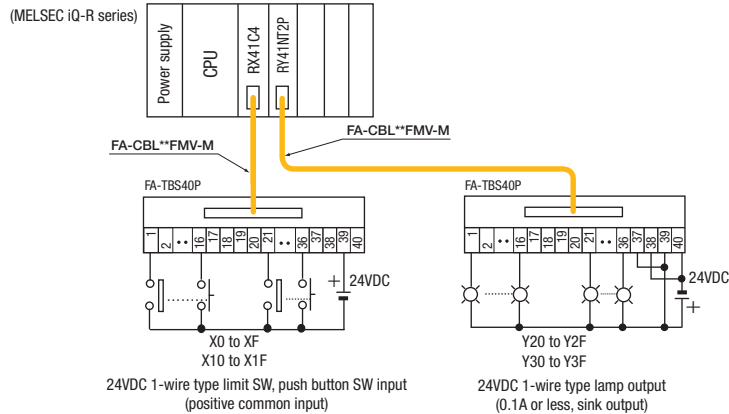


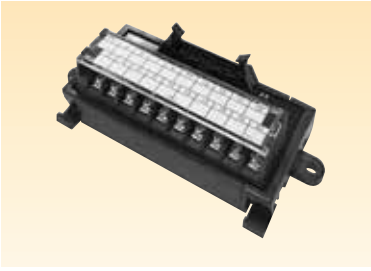
Connection diagram



Example of use

General-purpose junction terminal block (screw terminal type)





General-purpose 20-point open type FA-LTB20P

- Signals from the 20P connectors of a general-purpose controller (including non-Mitsubishi PLCs) are converted into 20P screw terminal block outputs.
- As one signal is connected to one terminal, this product can be used as a general-purpose 20-point junction terminal block (screw terminal type).
- When the same models are installed to a DIN rail side by side, clearance for screw mounting block is not required.
- The printed-circuit board is an inexpensive open type that can be viewed from the outside. The module can be installed on a DIN rail or with screws.

Related products M3 short-circuit bar P.286

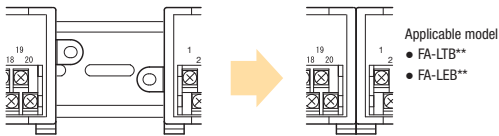
Specifications

| Item | Specifications | |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| No. of points | 20 points, general-purpose | |
| Maximum operating voltage/current | 48VDC, 1A/point | |
| Wiring method for common | - | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 20P, 7.62mm pitch, screw |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N·cm (5.2 to 7.6kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 10mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ² (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 115g | |

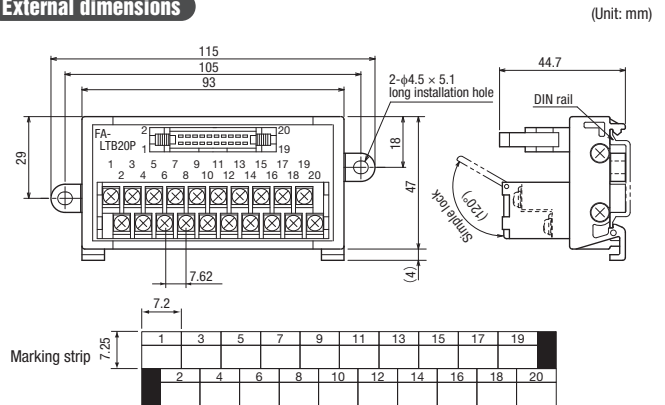
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

Notes for module installation

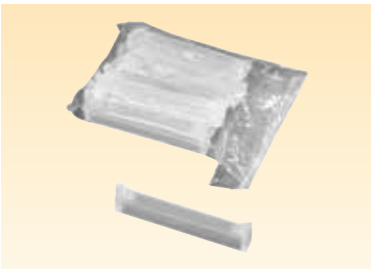
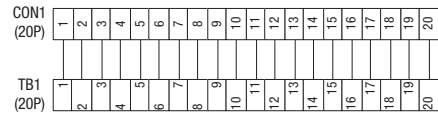
When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



External dimensions



Connection diagram



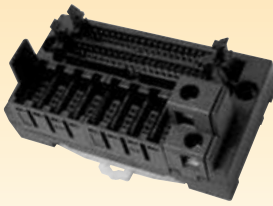
MIL 40P connector cover FA-CAP40MIL10

- When distributed-type modules are connected using cables, the last module connector is open. The connector cover prevents dust contamination.

Specifications

| Item | Specifications |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| Model | FA-CAP40MIL10 (protective cover for preventing contamination of an unused connector by foreign matter; includes 10 covers) |
| Applicable module | FA-TB8XY1, FA-TB8XY2, FA-TB8XY3, FA-TB8XY4, FA-TB16XY1, FA-TB16XY2, FA-TB16XY1N, FA-TB16XY2N |
| Weight | Approx. 30g |

e-CON, one-touch connector type



MELSEC-dedicated 8-point 3-wire distributed type

FA-CB8XY1, FA-CB8XY2, FA-CB8XY3, FA-CB8XY4

- 32-point I/O signals can be distributed into 8-point units. This product can be used with 8-point/16-point distributed type modules for 16-point junction terminal blocks (one-touch connector type or screw terminal type).
- Cables from a 2-wire/3-wire sensor can be pushed into one-touch connectors without the sheaths stripped.
- One-touch connectors can be easily inserted into/removes from sockets using the lever. When a connector is inserted, it will be locked by the lever.
- Cross-head screws of the power supply terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to 7, 8 to F, 10 to 17, 18 to 1F) numbers are assigned to modules.
- The module can be installed using a DIN rail or screws.

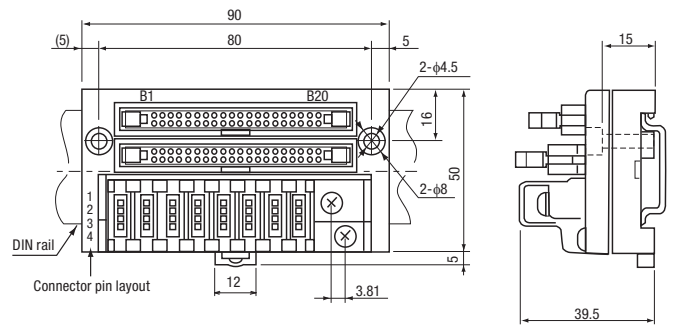
Related products Connector cover P.145

Specifications

| Item | Specifications | | | |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| | FA-CB8XY1 | FA-CB8XY2 | FA-CB8XY3 | FA-CB8XY4 |
| I/O device No. | X0 to X7 or Y0 to Y7 | X8 to XF or Y8 to YF | X10 to X17 or Y10 to Y17 | X18 to X1F or Y18 to Y1F |
| No. of points | 8 | | | |
| Rated voltage | 24VDC | | | |
| Maximum operating voltage/current | Voltage: 28.8VDC, Current: 1A (each signal terminal), 2A (power supply terminal) | | | |
| One-touch connector | Applicable wire: 0.14 to 0.5mm ² (#26 to #20AWG) (initial contact resistance: 50mΩ or less) Wiring method for common: 8 points/8 (24V) common points + 8 (0V) common points | | | |
| Power supply terminal block | Terminal screw | M3 screw, number of terminals: 2P, spring-up screw with finger protection cover | | |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) | | |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) | | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ¹ (IEC 60715 compliant) | | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | | | |
| Weight | Approx. 80g | | | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 3: The total length of cables between I/O modules and distributed type modules (such as FA-CBL**FMV, FA-CBL**MMH) must be 20m or less.

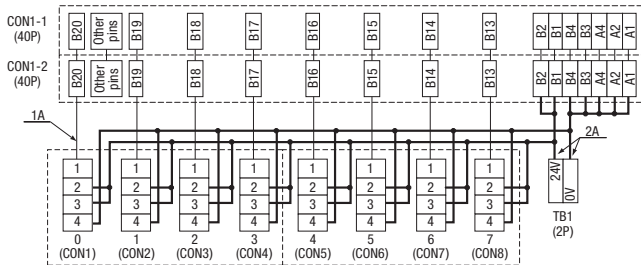
External dimensions



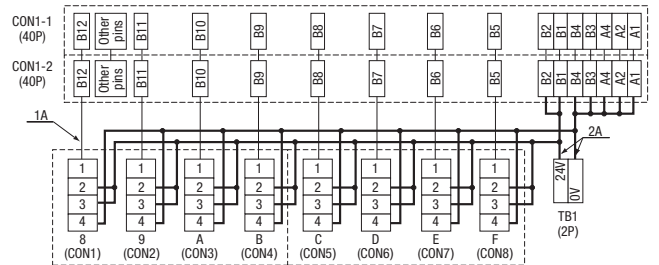
(Unit: mm)

Connection diagram

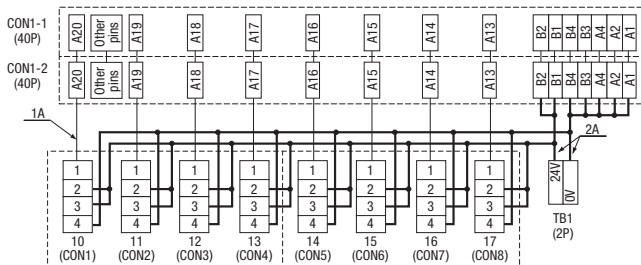
<FA-CB8XY1>



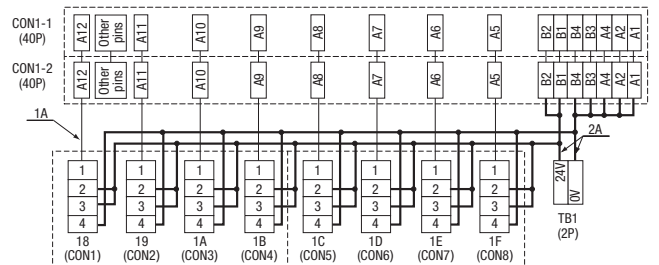
<FA-CB8XY2>



<FA-CB8XY3>



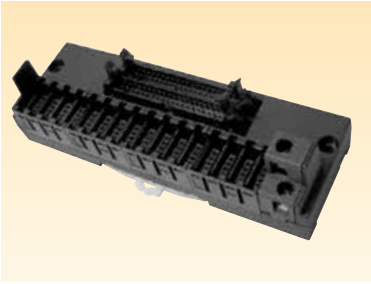
<FA-CB8XY4>



One-touch connector layout

| | |
|---|-------|
| 1 | XY |
| 2 | 24VDC |
| 3 | 24VDC |
| 4 | 0V |

*: Other pins of CON1-1 and CON1-2 (relay connector) shown above are connected to the pins that have the same numbers as CON1-1 and CON1-2. Note that the actual pin layout is different.



MELSEC-dedicated 16-point 3-wire distributed type FA-CB16XY1, FA-CB16XY2

- 32-point I/O signals can be distributed into 16-point units. This product can be used with 8-point/16-point distributed type modules for 8-point junction terminal blocks (one-touch connector type or screw terminal type).
- Cables from a 2-wire/3-wire sensor can be pushed into one-touch connectors without the sheaths stripped.
- One-touch connectors can be easily inserted/removed from sockets using the lever. When a connector is inserted, it will be locked by the lever.
- Cross-head screws of the power supply terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to F, 10 to 1F) numbers are assigned to modules.
- The module can be installed using a DIN rail or screws.

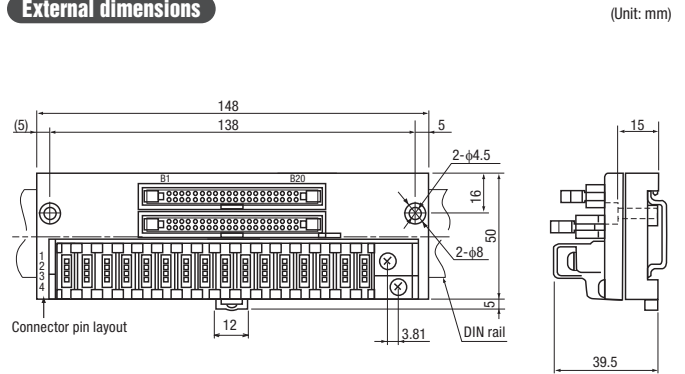
Related products Connector cover P.145

Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| | FA-CB16XY1 | FA-CB16XY2 |
| I/O device No. | X0 to XF or Y0 to YF | X10 to X1F or Y10 to Y1F |
| No. of points | 16 | |
| Rated voltage | 24VDC | |
| Maximum operating voltage/current | Voltage: 28.8VDC, Current: 1A (each signal terminal), 2A (power supply terminal) | |
| One-touch connector | Applicable wire: 0.14 to 0.5mm ² (#26 to #20AWG) (initial contact resistance: 50mΩ or less) Wiring method for common: 16 points/16 (24V) common points + 16 (0V) common points | |
| Power supply terminal block | Terminal screw M3 screw, number of terminals: 2P, spring-up screw with finger protection cover | |
| Module installation | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (5 to 9kgf·cm) |
| | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | |
| Weight | Approx. 120g | |

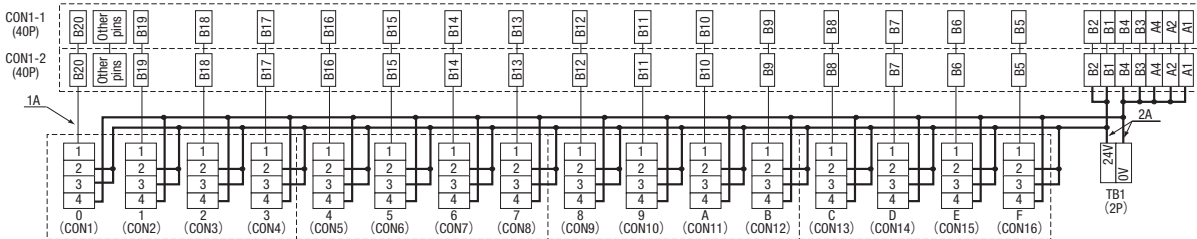
Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 3: The total length of cables between I/O modules and distributed type modules (such as FA-CBL**FMV, FA-CBL**MMH) must be 20m or less.

External dimensions

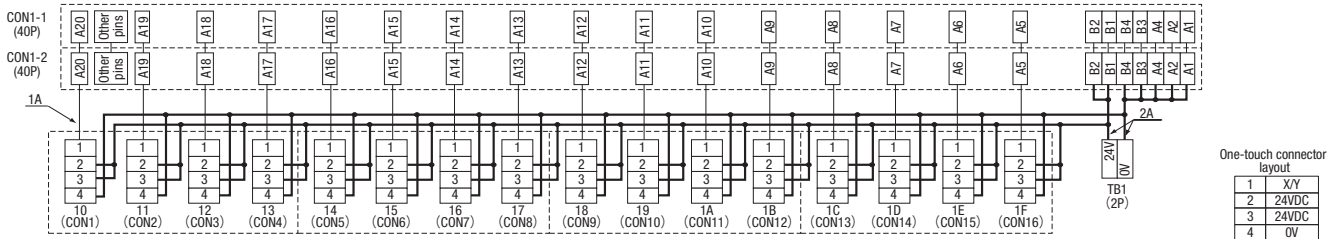


Connection diagram

<FA-CB16XY1>



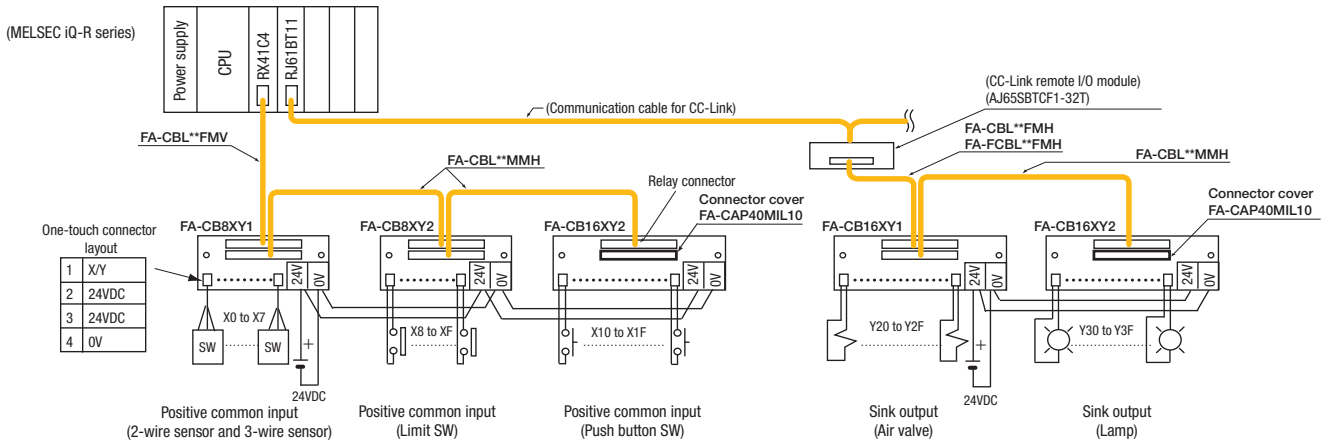
<FA-CB16XY2>



*: Other pins of CON1-1 and CON1-2 (relay connector) shown above are connected to the pins that have the same numbers as CON1-1 and CON1-2.
 Note that the actual pin layout is different.

Example of use

The following shows the example of use of the junction terminal block (one-touch connector type) in MELSEC series.



*: Use the same power supply for each junction terminal block (one-touch connector type) distributed from one I/O module.

Applicable connector

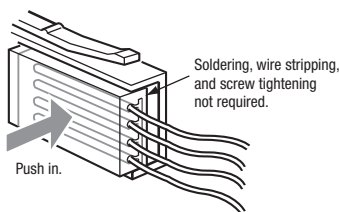
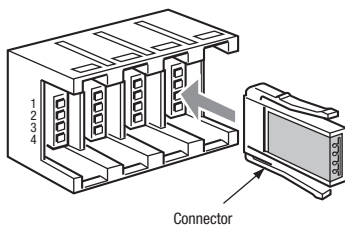
Recommended plugs for one-touch connector

The following table lists the suitable plugs manufactured by Mitsubishi Electric and 3M Japan Limited.

| | Applicable wire specifications | | Color of cover | Model (of Mitsubishi Electric) (20 plugs) | Model (of 3M Japan Limited) (1 plug) |
|--|-----------------------------------|--------------------------|----------------|-------------------------------------------|--------------------------------------|
| | Core wire size (mm ²) | Outer diameter size (mm) | | | |
| | 0.14 to 0.2 (#26 to #24AWG) | φ1.0 to 1.4 | Transparent | A6CON-P214 | 33104-6000FL |
| | | φ1.4 to 2.0 | Yellow | A6CON-P220 | 33104-6100FL |
| | 0.3 to 0.5 (#22 to #20AWG) | φ1.0 to 1.4 | Red | A6CON-P514 | 33104-6200FL |
| | | φ1.4 to 2.0 | Blue | A6CON-P520 | 33104-6300FL |

*: Wire diameter of a cable must be φ0.16 or more.

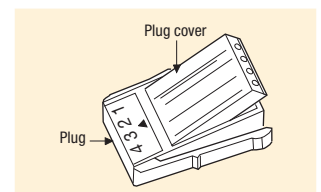
How to connect one-touch connectors



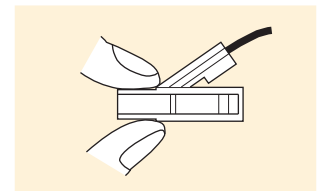
After inserting the discrete cable into the connector, push the side of the plug for the connector so that the cable can be securely connected.

(1) Check if the plug cover is assembled into the plug.

*: Do not push the plug cover into the plug before inserting a cable. Once crimped, the plug cover cannot be reused.

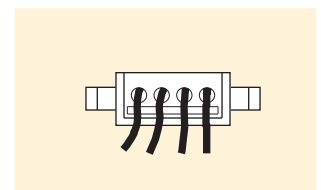


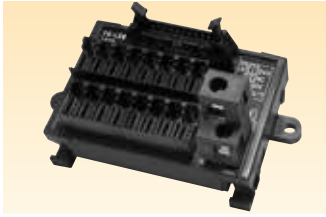
(2) Lift up the back of the plug cover, and insert the cable until it reaches the end.



(3) Push the plug cover into the plug with pliers, etc.

Check that the plug cover is securely assembled into the plug after crimping.





MELSEC-dedicated 16-point 3-wire open type with 4-pole connector

FA-LEB16XY (Screw/DIN rail installation) FA-LEB16XY-D (for DIN rail installation only)

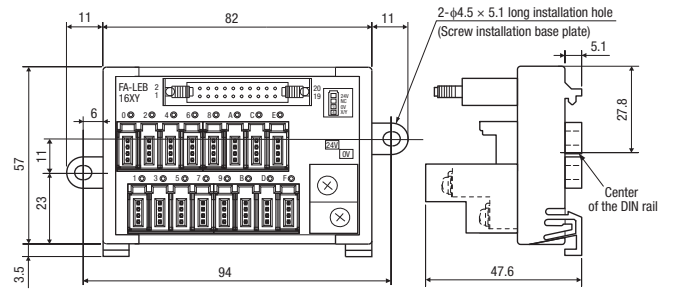
- 16-point I/O signals from a programmable controller are converted into 16-point 4-pole e-CON connector outputs.
- Cables (26 to 20AWG) from a 2-wire/3-wire sensor can be pushed into e-CON connectors collectively using a tool such as pliers. Sheaths need not be stripped.
- e-CON connectors can be easily inserted into/removed from sockets using the lever. When a connector is inserted, it will be locked by the lever.
- Cross-head screws of the power supply terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to F) numbers are assigned to modules.
- DIN rail installation is available for both models. Screw installation is available for FA-LEB16XY only.

Specifications

| Item | Specifications |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I/O device No. | X0 to XF or Y0 to YF |
| No. of points | 16 |
| Rated voltage | 24VDC |
| Maximum operating voltage/current | Voltage: 28.8VDC, Current: 1A (each signal terminal), 2A (power supply terminal) |
| e-CON connector | Applicable wire: 0.14 to 0.5mm ² (#26 to #20AWG) Finishing outer diameter: 0.8 to 2.0mm (initial contact resistance: 50mΩ or less) Wiring method for common: 16 points/16 (24V) common points + 16 (0V) common points |
| Power supply terminal block | Terminal screw: M3 screw, number of terminals: 2P, spring-up screw with finger protection cover Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw: M4 × 0.7mm × 10mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) DIN rail: Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) |
| Weight | Approx. 70g |

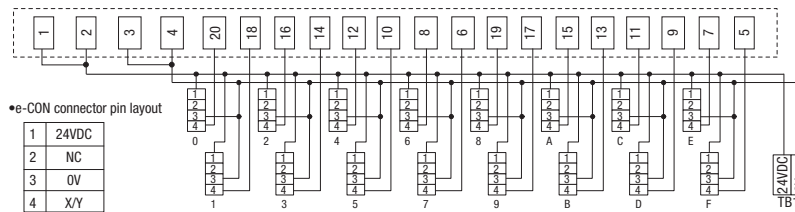
Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



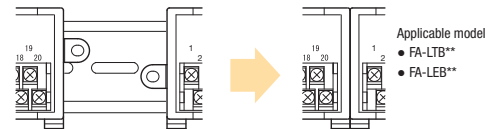
*: The FA-LEB16XY-D does not have a screw installation base plate.

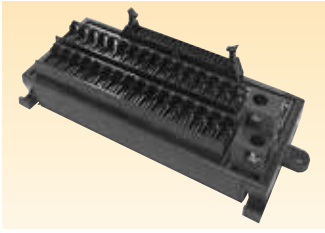
Connection diagram



Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.





MELSEC-dedicated 32-point 3-wire open type with 3-/4-pole connector

FA-LEB32XY, FA-LEB32XY-3, FA-LEB32XY-3A

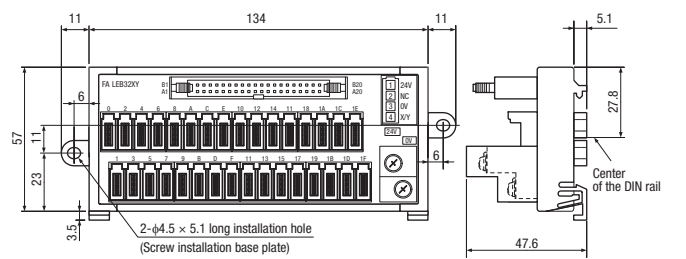
- 32-point I/O signals from a programmable controller are converted into 32-point e-CON connector outputs.
- Cables (26 to 20AWG) from a 2-wire/3-wire sensor can be pushed into e-CON connectors collectively using a tool such as pliers. Sheaths need not be stripped.
- e-CON connectors can be easily inserted into/removed from sockets using the lever. When a connector is inserted, it will be locked by the lever.
- Cross-head screws of the power supply terminals are spring-up screws, making round solderless terminal installation easy.
- The Mitsubishi Electric programmable controller input/output signal (0 to 1F) numbers are assigned to modules.
- DIN rail installation and screw installation are available. When units are installed to a DIN rail side by side, the base of a unit will be under the next unit body.

Specifications

| Item | Specifications | | |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|
| | FA-LEB32XY | FA-LEB32XY-3 | FA-LEB32XY-3A |
| I/O device No. | X0 to X1F or Y0 to Y1F | | |
| No. of points | 32 | | |
| Rated voltage | 24VDC | | |
| Maximum operating voltage/current | Voltage: 28.8VDC, Current: 1A (each signal terminal), 2A (power supply terminal) | | |
| e-CON connector | 4-pole connector | 3-pole connector | |
| | 1P: 24VDC, 2P: N/C, 3P: 0V, 4P: X/Y | 1P: 24VDC, 2P: 0V, 3P: X/Y | 1P: 24VDC, 2P: X/Y, 3P: 0V |
| | Applicable wire: 0.14 to 0.5mm ² (#26 to #20AWG) Finishing outer diameter: φ0.8 to 2.0mm (Initial contact resistance: 50mΩ or less) Wiring method for common: 32 points/32 (24V) common points + 32 (0V) common points | | |
| Power supply terminal block | Terminal screw | M3 screw, number of terminals: 2P, spring-up screw with finger protection cover | |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) | |
| Module installation | Screw | M4 × 0.7mm × 10mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A1 (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground, between charged areas) | | |
| Weight | Approx. 105g | Approx. 100g | |

Note 1: X or Y of the input/output device number is X when an input module is connected, and Y when an output module is connected. The number is determined by the slot where the I/O module is inserted.
Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

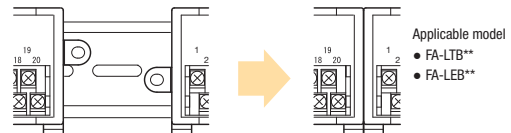
External dimensions



*: The FA-LEB32XY is printed on the module case.

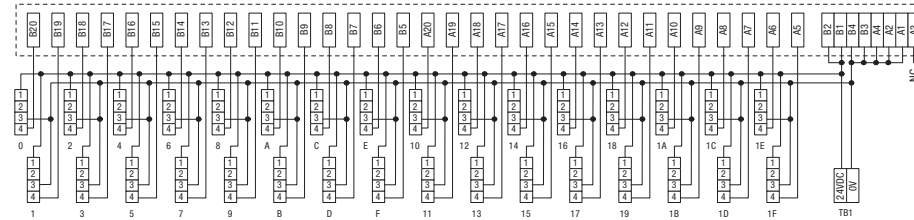
Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



Connection diagram

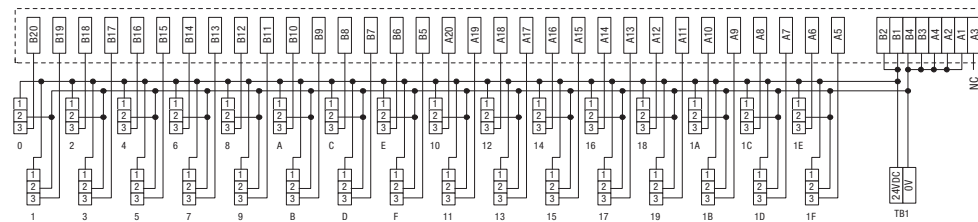
<FA-LEB32XY>



•e-CON connector pin layout

| FA-LEB32XY | |
|------------|-------|
| 1 | 24VDC |
| 2 | NC |
| 3 | 0V |
| 4 | X/Y |

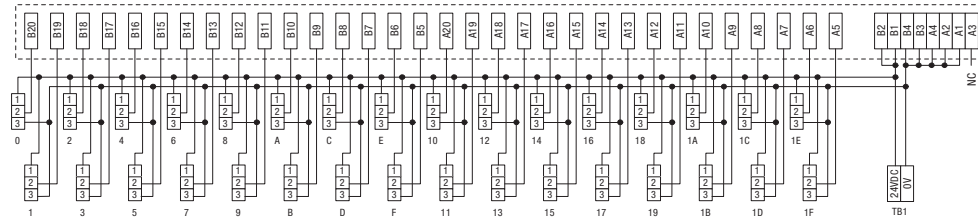
<FA-LEB32XY-3>



•e-CON connector pin layout

| FA-LEB32XY-3 | |
|--------------|-------|
| 1 | 24VDC |
| 2 | 0V |
| 3 | X/Y |

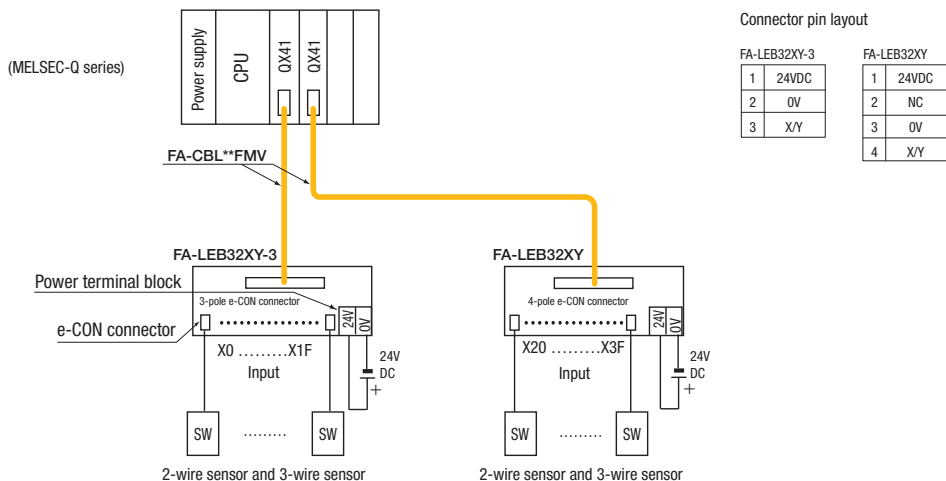
<FA-LEB32XY-3A>



•e-CON connector pin layout

| FA-LEB32XY-3A | |
|---------------|-------|
| 1 | 24VDC |
| 2 | X/Y |
| 3 | 0V |



Example of use



Applicable connector

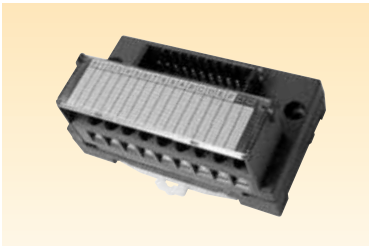
Recommended plugs/sockets/dust covers for connector

The following table lists the suitable plugs, sockets, and dust covers manufactured by 3M

| Type | Product | No. of poles | Applicable wire specifications | | | Color of body | Color of cover | Model (of 3M Japan Limited) | |
|-------------------------------------------------------------------------------------|-------------|--------------|--------------------------------|-------------------------------------------------|--------------------------|---------------|-------------------|-----------------------------|-------------------|
| | | | AWG No. | Nominal cross sectional area (mm ²) | Outer diameter size (mm) | | | | |
|  | Plug | 4 | 26 to 28 | 0.08 to less than 0.14 | φ0.6 to 0.8 | Gray | Purple | 37104-4080-G00 FL | |
| | | | | | φ0.8 to 1.0 | | Red | 37104-4101-G00 FL | |
| | | | 24 to 26 | 0.14 to less than 0.3 | φ0.6 to 0.8 | Black | Purple | 37104-3080-000 FL | |
| | | | | | φ0.8 to 1.0 | | Red | 37104-3101-000 FL | |
| | | | φ1.0 to 1.2 | φ1.2 to 1.6 | φ1.6 to 2.0 | Black | Yellow | 37104-3122-000 FL | |
| | | | | | | | Orange | 37104-3163-000 FL | |
| | | 20 to 22 | 0.3 to 0.5 | φ1.0 to 1.2 | Black | Green | 37104-2124-000 FL | | |
| | | | | φ1.2 to 1.6 | | Blue | 37104-2165-000 FL | | |
| | | 3 | 3 | 26 to 28 | 0.08 to less than 0.14 | φ0.6 to 0.8 | Gray | Purple | 37103-4080-G00 FL |
| | | | | | | φ0.8 to 1.0 | | Red | 37103-4101-G00 FL |
| | | | | 24 to 26 | 0.14 to less than 0.3 | φ0.6 to 0.8 | Black | Purple | 37103-3080-000 FL |
| | | | | | | φ0.8 to 1.0 | | Red | 37103-3101-000 FL |
| φ1.0 to 1.2 | φ1.2 to 1.6 | | | φ1.6 to 2.0 | Black | Yellow | 37103-3122-000 FL | | |
| | | | | | | Orange | 37103-3163-000 FL | | |
| 20 to 22 | 0.3 to 0.5 | φ1.0 to 1.2 | Black | Green | 37103-2124-000 FL | | | | |
| | | φ1.2 to 1.6 | | Blue | 37103-2165-000 FL | | | | |
| | | | | φ1.6 to 2.0 | Gray | | 37103-2206-000 FL | | |
|  | Socket | 4 | 24 to 26 | 0.14 to less than 0.3 | φ0.8 to 1.0 | Black | Red | 37304-3101-000 FL | |
| | | | | | φ1.0 to 1.2 | | Yellow | 37304-3122-000 FL | |
| | | | φ1.2 to 1.6 | φ1.6 to 2.0 | Black | Orange | 37304-3163-000 FL | | |
| | | | | | | Green | 37304-2124-000 FL | | |
| | | | 20 to 22 | 0.3 to 0.5 | φ1.0 to 1.2 | Black | Blue | 37304-2165-000 FL | |
| | | | | | φ1.2 to 1.6 | | Gray | 37304-2206-000 FL | |
| | | 3 | 24 to 26 | 0.14 to less than 0.3 | Black | Red | 37303-3101-000 FL | | |
| | | | | | | Yellow | 37303-3122-000 FL | | |
| | | | φ1.2 to 1.6 | φ1.6 to 2.0 | Black | Orange | 37303-3163-000 FL | | |
| | | | | | | Green | 37303-2124-000 FL | | |
| | | | 20 to 22 | 0.3 to 0.5 | φ1.0 to 1.2 | Black | Blue | 37303-2165-000 FL | |
| | | | | | φ1.2 to 1.6 | | Gray | 37303-2206-000 FL | |
| Dust cover | Dust cover | 4 | - | - | - | Gray | - | 37804-1000-00 | |
| | | 3 | - | - | - | Gray | - | 37803-1000-00 | |

For AC/DC I/O modules

Screw terminal type



For MELSEC terminal block I/O modules, 18-point 1-wire type (18 points/common type) FA-TB18XY (Marking strip: Terminal number)

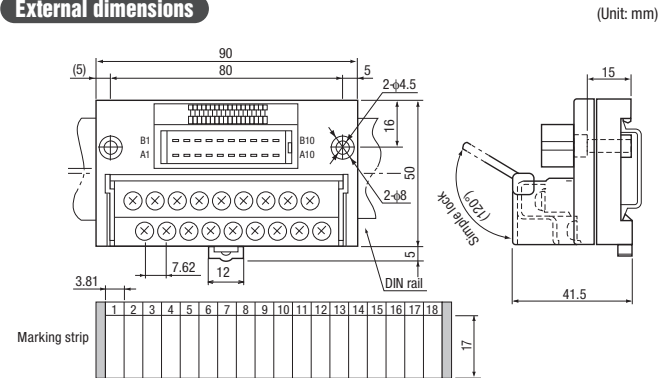
- This product can be used as a general-purpose AC/DC 18-point 1-wire 1-common junction terminal block (screw terminal type).
- Connectors can be inserted/removed by one-touch motion. Current of 2A can be provided for signals and 8A for the power supply commons.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

Specifications

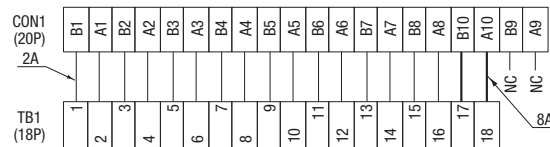
| Item | Specifications | |
|------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 18-point (for signals), 2-point (for power supply) | |
| Rated voltage | 24VDC/240VAC | |
| Maximum operating voltage/current | 121VDC/264VAC, 2A (each signal terminal), 8A (each common terminal) | |
| Wiring method for common | 18 signal terminals/2 power supply commons | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 18P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Aℓ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 1500VAC for 1 minute, 100MΩ or more (between charged areas) | |
| | 2000VAC for 1 minute, 100MΩ or more (between charged areas and ground) | |
| Weight | Approx. 110g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

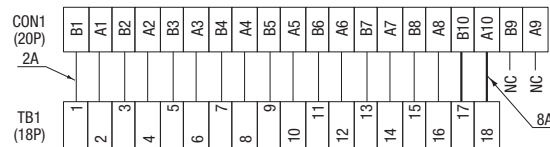
External dimensions



Connection diagram



Connection diagram

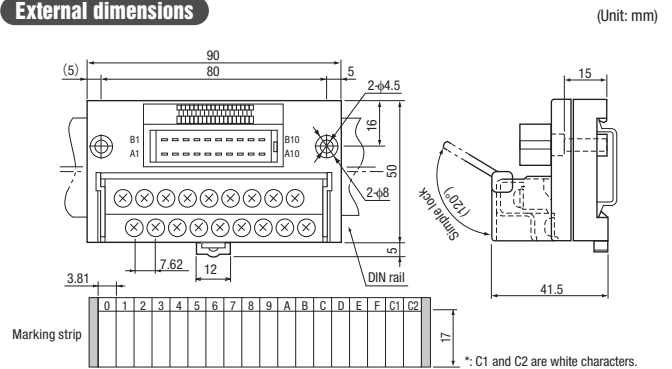


Specifications

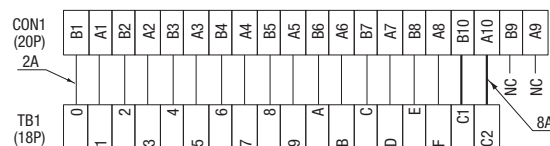
| Item | Specifications | |
|------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | |
| Rated voltage | 24VDC/240VAC | |
| Maximum operating voltage/current | 121VDC/264VAC, 2A (each signal terminal), 8A (each common terminal) | |
| Wiring method for common | 16 signal terminals/2 power supply commons | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 18P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Aℓ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 1500VAC for 1 minute, 100MΩ or more (between charged areas) | |
| | 2000VAC for 1 minute, 100MΩ or more (between charged areas and ground) | |
| Weight | Approx. 110g | |

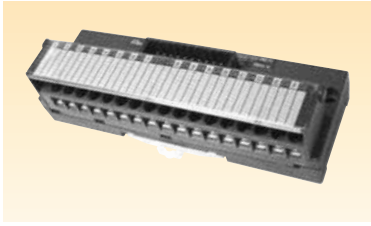
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





For MELSEC terminal block I/O modules, 16-point 2-wire type (16 points/common type, negative common input/sink output)

FA-TB161ACC1

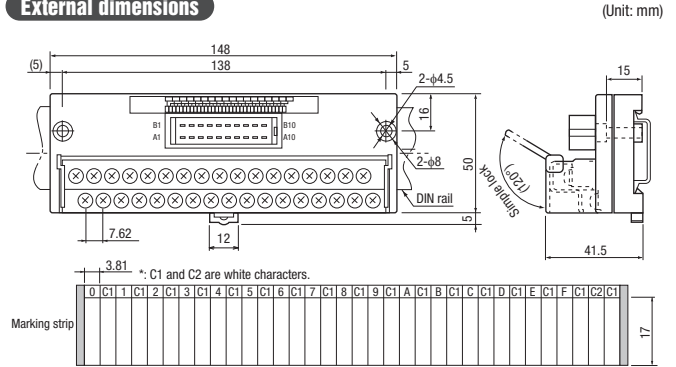
- This product can be used as an AC/DC 2-wire type junction terminal block (screw terminal type) to be connected to a MELSEC-Q series terminal block type I/O module. Wiring of the product is easy as the Mitsubishi Electric programmable controller input/output signal (0 to F) numbers are indicated on the marking strip.
- Connectors can be inserted/removed by one-touch motion. Current of 2A can be provided for signals and 8A for the power supply commons.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

Specifications

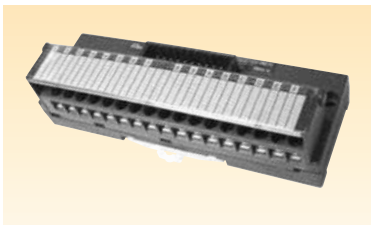
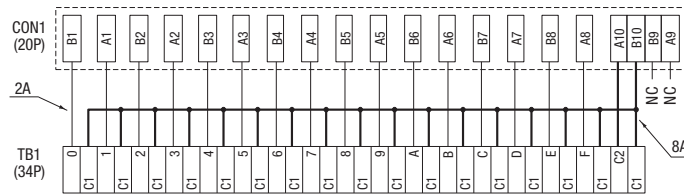
| Item | Specifications | |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | |
| Rated voltage | 24VDC/240VAC | |
| Maximum operating voltage/current | 121VDC/264VAC, 2A (each signal terminal), 8A (each common terminal) | |
| Wiring method for common | 16 signal terminals/18 power supply commons | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A \bar{L} (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 1500VAC for 1 minute, 100M Ω or more (between charged areas) 2000VAC for 1 minute, 100M Ω or more (between charged areas and ground) | |
| Weight | Approx. 170g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram



For MELSEC terminal block I/O modules, 16-point 2-wire type (16 points/common type, positive common input/source output)

FA-TB161ACC2

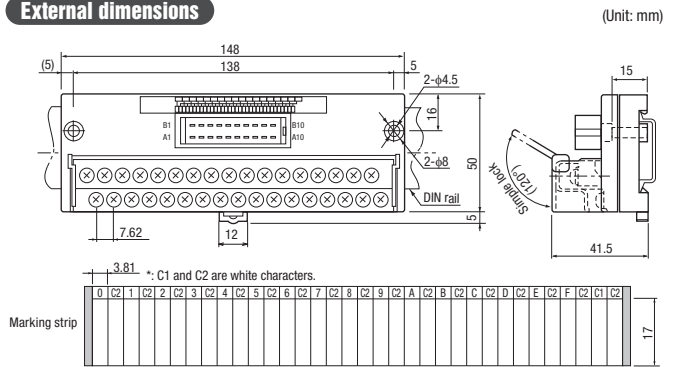
- This product can be used as an AC/DC 2-wire type junction terminal block (screw terminal type) to be connected to a MELSEC-Q series terminal block type I/O module. Wiring of the product is easy as the Mitsubishi Electric programmable controller input/output signal (0 to F) numbers are indicated on the marking strip.
- Connectors can be inserted/removed by one-touch motion. Current of 2A can be provided for signals and 8A for commons.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

Specifications

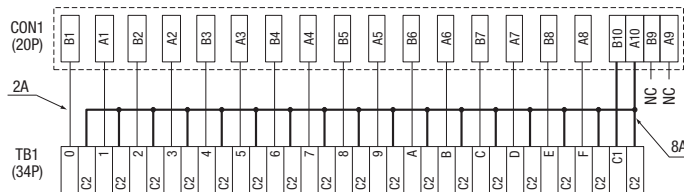
| Item | Specifications | |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 16 points, X0 to XF or Y0 to YF | |
| Rated voltage | 24VDC/240VAC | |
| Maximum operating voltage/current | 121VDC/264VAC, 2A (each signal terminal), 8A (each common terminal) | |
| Wiring method for common | 16 signal terminals/18 power supply commons | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A \bar{L} (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 1500VAC for 1 minute, 100M Ω or more (between charged areas) 2000VAC for 1 minute, 100M Ω or more (between charged areas and ground) | |
| Weight | Approx. 170g | |

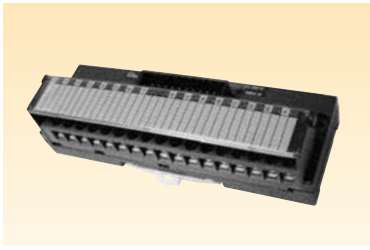
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





General-purpose 16-point 2-wire type (8 points/common type)

FA-TB162ACC

- This product can be used as a 2-wire type general-purpose junction terminal block (screw terminal type) to be connected to an I/O module having two circuits per 8 points/common.
- Connectors can be inserted/removed by one-touch motion. Current of 2A can be provided for signals and 8A for the power supply commons.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

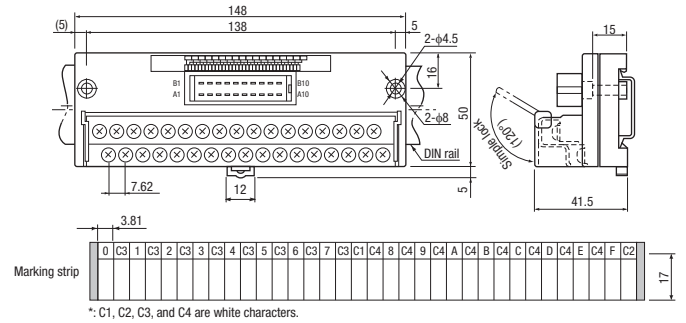
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of points, I/O device No. | 16 | |
| Maximum operating voltage/current | 121VDC/264VAC, 2A (each signal terminal), 8A (each common terminal) | |
| Wiring method for common | 16 signal terminals/18 power supply commons (two circuits in total, 8 signal terminals/9 power supply commons per circuit) | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ℓ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | 1500VAC for 1 minute, 100M Ω or more (between charged areas) | |
| | 2000VAC for 1 minute, 100M Ω or more (between charged areas and ground) | |
| Weight | Approx. 170g | |

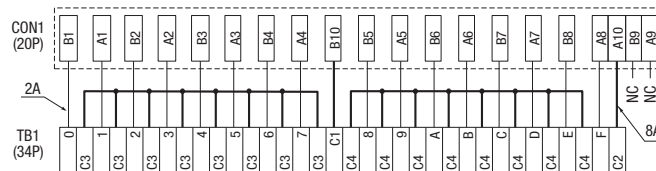
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)

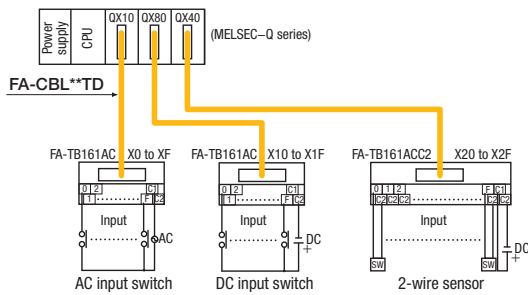


Connection diagram

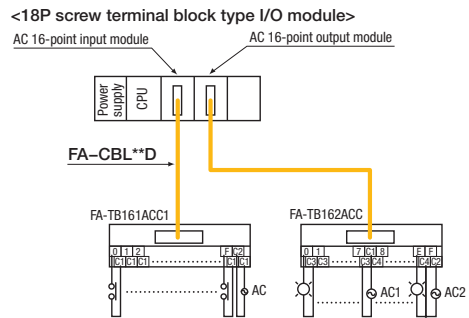


Example of use

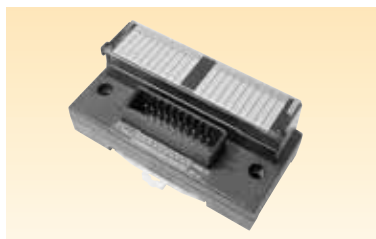
MELSEC-Q terminal block I/O \leftrightarrow Junction terminal block



Non-Mitsubishi PLC terminal block I/O module \leftrightarrow Junction terminal block



Relay module



General-purpose 20P terminal block type

FA-CTB20P

- Each signal for 20 points in the panel can be relayed to the outside of the panel using the 20-core cable for outside of the panel (arranged by users).
- The connector has 20 cores (DK-3100 series manufactured by DDK Ltd.)
- This relay module can be used as a junction terminal block for the general-purpose 20P terminal block and the 20P connector.
- The withstand voltage of 1500VAC and the current of 5A per point can be provided.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The module can be installed using a DIN rail or screws.

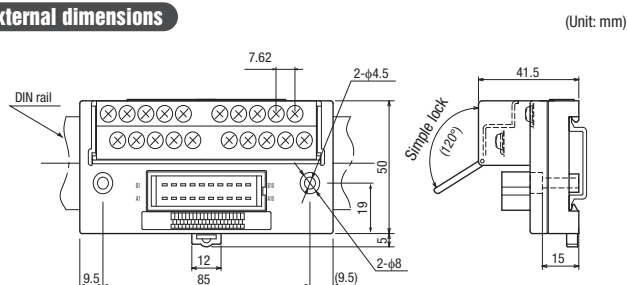
Related products M3 short-circuit bar P.286

Specifications

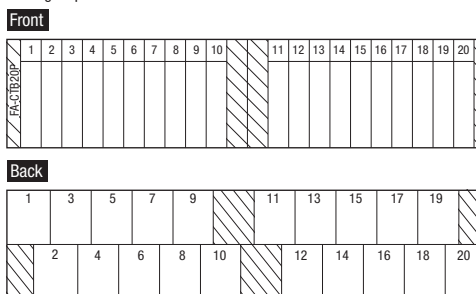
| Item | Specifications |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 20P terminal block relay module (for AC/DC) |
| No. of input/output points | 20 (General-purpose) |
| Maximum operating voltage/current | 121VDC/264VAC, each point: 5A |
| Terminal block | M3 screws, number of terminals: 20P, 7.62mm pitch, spring-up screw with finger protection cover 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Screw installation | M4 × 0.7mm × 20mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| DIN rail installation | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Insulation resistance (Initial value) | 100MΩ or more (measured with 500VDC insulation resistance tester) |
| Withstand voltage | Between charged areas, 1500VAC for 1 minute |
| Weight | Approx. 119g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

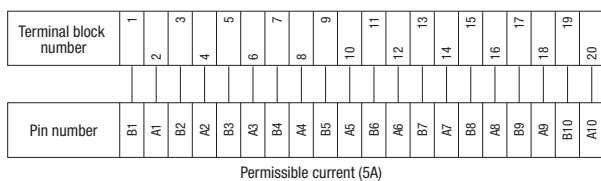
External dimensions



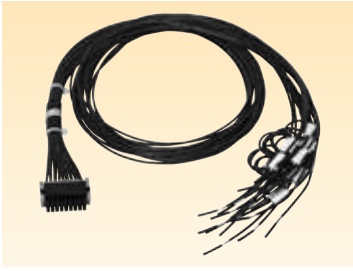
Marking strip



Connection diagram



Connection cables



Cable with spring clamp terminal block (Spring clamp terminal block ⇔ Discrete cable)

FA1-CB3L**SQ**E1F**

- This is a cable with a spring clamp terminal block to which cables have already been wired and is ready to be connected to MELSEC iQ-R series, MELSEC iQ-F series, or remote I/O modules (manufactured by Mitsubishi Electric).
 - Wiring work is reduced by 99% because cables do not need to be terminated or wired individually.
 - Cables are wired by only removing the existing terminal block of a Mitsubishi Electric programmable controller module and connecting this cable.
 - The time required to connect a Mitsubishi Electric programmable controller and a general-purpose product can be reduced significantly.
 - Users can select a best cable for the module according to the number of pins, allowable current, and type (discrete cable or connector).
 - The cable length can be customized.
- (For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

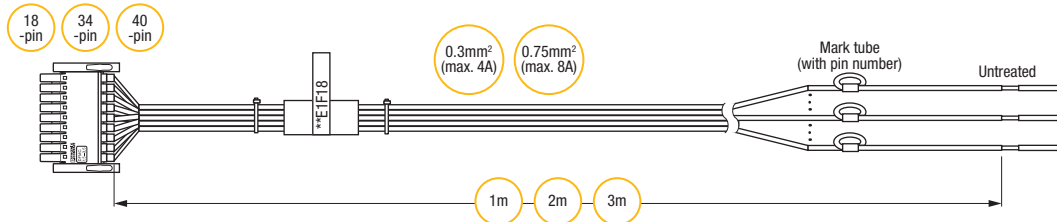
Specifications

| Item | Specifications | |
|-------------------------------------------|------------------------------------------------------------------------|-------------------------------|
| | 0.3mm ² (4A) | 0.75mm ² (8A) |
| Mark tube | Provided (Printing: 1 to 18, 1 to 34, or 1 to 40) | |
| Cable | Stranded wire (heat resistant polyvinyl chloride, blue): 18, 34, or 40 | |
| Nominal cross sectional area of conductor | 0.3mm ² (#22AWG) | 0.75 mm ² (#18AWG) |
| Conductor configuration | 17 wires/0.16mm | 34 wires/0.18mm |
| Insulator outer diameter | 1.6mm | 2.1mm |
| Cable outer diameter | - | - |
| Maximum current | 4A | 8A |
| Conductor resistance (20°C) | 0.0586Ω/m or less | 0.0235Ω/m or less |
| Withstand voltage | 1500VAC for 1 minute | |
| Insulation resistance | 5MΩ·km or more | |
| UL standard (cable area) | UL STYLE No.1007 80°C 300V | |
| Structure diagram | | |

| No. of points | Cross sectional area (allowable current) | Model | Cable length | Weight |
|---------------|------------------------------------------|---------------------|--------------|---------------|
| 18-pin | 0.3mm ² (4A) | FA1-CB3L03S010E1F18 | 1m | Approx. 115g |
| | | FA1-CB3L03S020E1F18 | 2m | Approx. 220g |
| | | FA1-CB3L03S030E1F18 | 3m | Approx. 325g |
| 34-pin | 0.3mm ² (4A) | FA1-CB3L03S010E1F34 | 1m | Approx. 220g |
| | | FA1-CB3L03S020E1F34 | 2m | Approx. 415g |
| | | FA1-CB3L03S030E1F34 | 3m | Approx. 610g |
| 40-pin | 0.3mm ² (4A) | FA1-CB3L03S010E1F40 | 1m | Approx. 260g |
| | | FA1-CB3L03S020E1F40 | 2m | Approx. 495g |
| | | FA1-CB3L03S030E1F40 | 3m | Approx. 730g |
| 18-pin | 0.75mm ² (8A) | FA1-CB3L07S010E1F18 | 1m | Approx. 230g |
| | | FA1-CB3L07S020E1F18 | 2m | Approx. 450g |
| | | FA1-CB3L07S030E1F18 | 3m | Approx. 670g |
| 34-pin | 0.75mm ² (8A) | FA1-CB3L07S010E1F34 | 1m | Approx. 430g |
| | | FA1-CB3L07S020E1F34 | 2m | Approx. 840g |
| | | FA1-CB3L07S030E1F34 | 3m | Approx. 1250g |
| 40-pin | 0.75mm ² (8A) | FA1-CB3L07S010E1F40 | 1m | Approx. 510g |
| | | FA1-CB3L07S020E1F40 | 2m | Approx. 995g |
| | | FA1-CB3L07S030E1F40 | 3m | Approx. 1480g |

External dimensions

(Unit: mm)





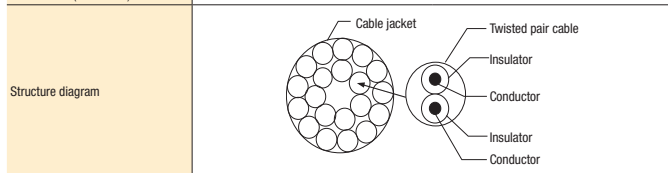
Cable with spring clamp terminal block (Spring clamp terminal block ⇔ MIL connector)

FA*-CB1L**EM*F**

- This is a cable used to connect a programmable controller and a junction terminal block or a digital signal converter.
- Wiring work is reduced by 99% because cables have already been wired to the spring terminal block and do not need to be terminated or wired individually.
- Cables are wired by only removing the existing terminal block of a Mitsubishi Electric programmable controller module and connecting this cable. Cables can also be wired to our products with a connector by a single operation.
- Users can select a best cable for the module according to the number of pins, allowable current, and type (discrete cable or connector).
- The cable length can be customized. (For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

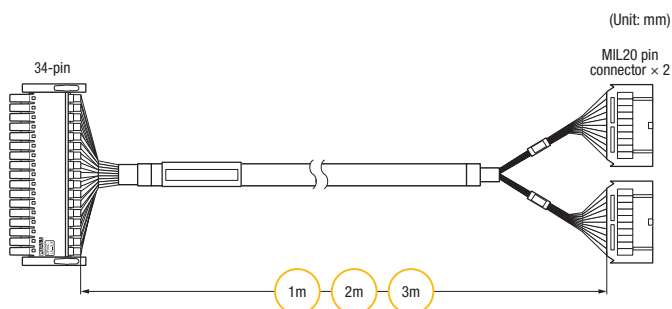
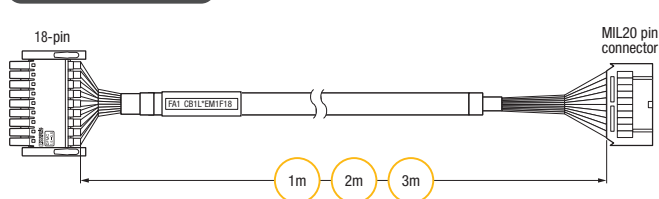
Specifications

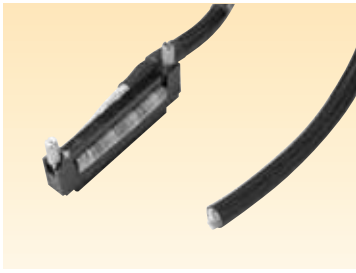
| Item | Specifications | |
|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| | 18-pin connector | 34-pin connector |
| Programmable controller side connector | Spring clamp terminal type, 18P connector | Spring clamp terminal type, 34P connector |
| Junction terminal block side connector | MIL 20P connector | MIL 20P connector × 2 |
| Cable type | 20-core cable (color: black) | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) | |
| Conductor configuration | 7 wires/0.127mm | |
| Insulator outer diameter | 0.88mm | |
| Cable outer diameter | 8.1mm | 9.5mm |
| Rated current | 1A | |
| Conductor resistance (20°C) | 0.232Ω/m or less | |
| Withstand voltage | 500VAC for 1 minute | |
| Insulation resistance | 100MΩ·km or more | |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V | |



| Connectable programmable controller module | No. of points | Model | Cable length | Weight |
|------------------------------------------------------|---------------|-------------------|--------------|--------------|
| MELSEC iQ-R I/O module | 18-pin | FA1-CB1L10EM1F18 | 1m | Approx. 110g |
| | | FA1-CB1L20EM1F18 | 2m | Approx. 210g |
| | | FA1-CB1L30EM1F18 | 3m | Approx. 310g |
| MELSEC iQ-F I/O module (sink) | 18-pin | FA2-CB1L10EM1F18 | 1m | Approx. 110g |
| | | FA2-CB1L20EM1F18 | 2m | Approx. 210g |
| | | FA2-CB1L30EM1F18 | 3m | Approx. 310g |
| MELSEC iQ-F I/O module (source) | 18-pin | FA2-CB1L10EM1F18E | 1m | Approx. 110g |
| | | FA2-CB1L20EM1F18E | 2m | Approx. 210g |
| | | FA2-CB1L30EM1F18E | 3m | Approx. 310g |
| CC-Link IE TSN input module | 18-pin | FA3-CB1L10EM1F18X | 1m | Approx. 110g |
| | | FA3-CB1L20EM1F18X | 2m | Approx. 210g |
| | | FA3-CB1L30EM1F18X | 3m | Approx. 310g |
| CC-Link IE TSN output module | 18-pin | FA3-CB1L10EM1F18Y | 1m | Approx. 110g |
| | | FA3-CB1L20EM1F18Y | 2m | Approx. 210g |
| | | FA3-CB1L30EM1F18Y | 3m | Approx. 310g |
| MELSEC iQ-R I/O module | 34-pin | FA1-CB1L10EM2F34 | 1m | Approx. 180g |
| | | FA1-CB1L20EM2F34 | 2m | Approx. 290g |
| | | FA1-CB1L30EM2F34 | 3m | Approx. 400g |
| CC-Link IE TSN, CC-Link IE Field Basic input module | 34-pin | FA3-CB1L10EM2F34X | 1m | Approx. 180g |
| | | FA3-CB1L20EM2F34X | 2m | Approx. 290g |
| | | FA3-CB1L30EM2F34X | 3m | Approx. 400g |
| CC-Link IE TSN, CC-Link IE Field Basic output module | 34-pin | FA3-CB1L10EM2F34Y | 1m | Approx. 180g |
| | | FA3-CB1L20EM2F34Y | 2m | Approx. 290g |
| | | FA3-CB1L30EM2F34Y | 3m | Approx. 400g |

External dimensions





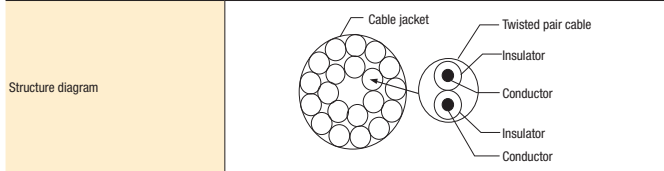
Discrete cable (40-core cable)(FCN 40P type)

FA-CBL**FV

- Cables are vertically pulled out from a connection point of a non-Mitsubishi PLC's FCN 40P (vertical) connector type I/O module.
- Pulling the cable vertically prevents poor contact, disconnection, or other faults caused by the tension at the upper end of the core wire of the cable from the FCN 40P connector.

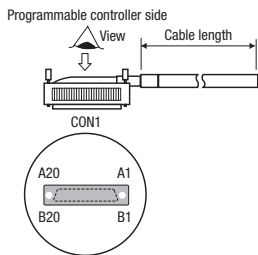
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | - |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |

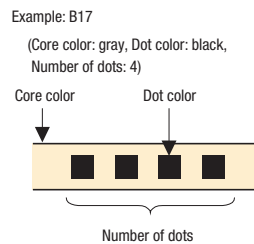


| Model | Cable length | Weight |
|------------|--------------|--------------|
| FA-CBL20FV | 2m | Approx. 270g |
| FA-CBL30FV | 3m | Approx. 390g |
| FA-CBL50FV | 5m | Approx. 610g |
| FA-CBL80FV | 8m | Approx. 920g |

External dimensions

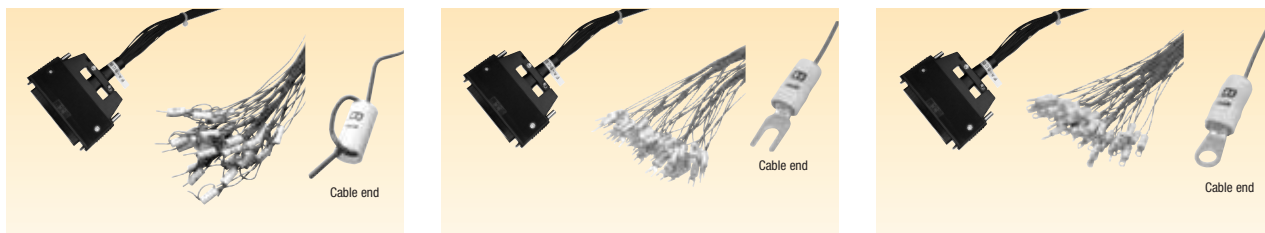


Core wire identification



Connection diagram

| CON1 | Discrete cable | Discrete cable core identification | | |
|------|----------------|------------------------------------|-----------|----------------|
| | | Core color | Dot color | Number of dots |
| B20 | | Pink | Black | 4 |
| A20 | | Pink | Red | 4 |
| B19 | | Yellow | Black | 4 |
| A19 | | Yellow | Red | 4 |
| B18 | | White | Black | 4 |
| A18 | | White | Red | 4 |
| B17 | | Gray | Black | 4 |
| A17 | | Gray | Red | 4 |
| B16 | | Orange | Black | 4 |
| A16 | | Orange | Red | 4 |
| B15 | | Pink | Black | 3 |
| A15 | | Pink | Red | 3 |
| B14 | | Yellow | Black | 3 |
| A14 | | Yellow | Red | 3 |
| B13 | | White | Black | 3 |
| A13 | | White | Red | 3 |
| B12 | | Gray | Black | 3 |
| A12 | | Gray | Red | 3 |
| B11 | | Orange | Black | 3 |
| A11 | | Orange | Red | 3 |
| B10 | | Pink | Black | 2 |
| A10 | | Pink | Red | 2 |
| B9 | | Yellow | Black | 2 |
| A9 | | Yellow | Red | 2 |
| B8 | | White | Black | 2 |
| A8 | | White | Red | 2 |
| B7 | | Gray | Black | 2 |
| A7 | | Gray | Red | 2 |
| B6 | | Orange | Black | 2 |
| A6 | | Orange | Red | 2 |
| B5 | | Pink | Black | 1 |
| A5 | | Pink | Red | 1 |
| B4 | | Yellow | Black | 1 |
| A4 | | Yellow | Red | 1 |
| B3 | | White | Black | 1 |
| A3 | | White | Red | 1 |
| B2 | | Gray | Black | 1 |
| A2 | | Gray | Red | 1 |
| B1 | | Orange | Black | 1 |
| A1 | | Orange | Red | 1 |



Discrete cable (40 strands) (FCN 40P type)

FA-BCBL**FFBL, FA-BCBL**FFBLY, FA-BCBL**FFBLR

- This is a cable with 40 blue strands, each of which is pulled out from a connection point of a non-Mitsubishi PLC's FCN 40P connector type I/O module.
- For the discrete cable side, pin number mark tubes are provided and three types are available: The non-processed type, Y-shaped solderless terminal type, and round solderless terminal type.

Specifications

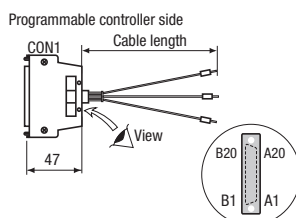
| Item | Specifications | | |
|-------------------------------------------|-------------------------------------------------------|------------------------|---------------------|
| | FA-BCBL**FFBL | FA-BCBL**FFBLY | FA-BCBL**FFBLR |
| Programmable controller side connector | FCN-363J040 manufactured by FUJITSU COMPONENT LIMITED | | |
| Solderless terminal | - | Y-shaped: AVF1.25-V3.5 | Round: RAV1.25-M3.5 |
| Mark tube | Provided (Marks: A1 to A20, B1 to B20) | | |
| Cable | Blue wire with 40 strands (semi-rigid vinyl cable) | | |
| Nominal cross sectional area of conductor | 0.2mm ² (#24AWG) | | |
| Conductor configuration | 11 wires/0.16mm | | |
| Insulator outer diameter | 1.14mm | | |
| Cable outer diameter | - | | |
| Rated current | 48VDC/3A | | |
| Conductor resistance (20°C) | 0.0929Ω/m or less | | |
| Withstand voltage | 500VAC for 1 minute | | |
| Insulation resistance | 5MΩ·km or more | | |
| UL standard (cable area) | UL STYLE NO 1061 80°C 300V | | |
| Structure diagram | | | |

| Model | Cable length | Weight |
|----------------|--------------|--------------|
| FA-BCBL10FFBL | 1m | Approx. 220g |
| FA-BCBL20FFBL | 2m | Approx. 440g |
| FA-BCBL30FFBL | 3m | Approx. 660g |
| FA-BCBL10FFBLY | 1m | Approx. 250g |
| FA-BCBL20FFBLY | 2m | Approx. 490g |
| FA-BCBL30FFBLY | 3m | Approx. 730g |
| FA-BCBL10FFBLR | 1m | Approx. 250g |
| FA-BCBL20FFBLR | 2m | Approx. 490g |
| FA-BCBL30FFBLR | 3m | Approx. 730g |

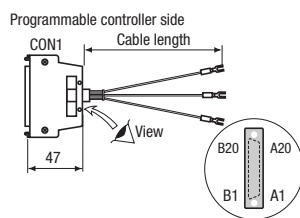
External dimensions

(Unit: mm)

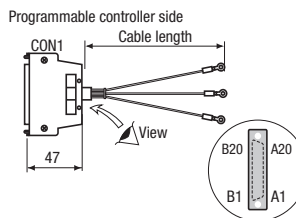
<FA-BCBL**FFBL>



<FA-BCBL**FFBLY>

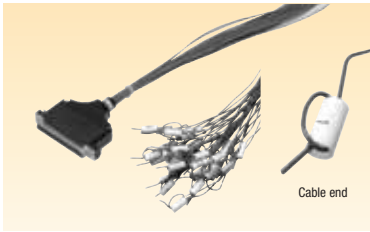


<FA-BCBL**FFBLR>



Connection diagram

| CON1 | Mark tube |
|------|-----------|
| B20 | B20 |
| A20 | A20 |
| B19 | B19 |
| A19 | A19 |
| B18 | B18 |
| A18 | A18 |
| B17 | B17 |
| A17 | A17 |
| B16 | B16 |
| A16 | A16 |
| B15 | B15 |
| A15 | A15 |
| B14 | B14 |
| A14 | A14 |
| B13 | B13 |
| A13 | A13 |
| B12 | B12 |
| A12 | A12 |
| B11 | B11 |
| A11 | A11 |
| B10 | B10 |
| A10 | A10 |
| B9 | B9 |
| A9 | A9 |
| B8 | B8 |
| A8 | A8 |
| B7 | B7 |
| A7 | A7 |
| B6 | B6 |
| A6 | A6 |
| B5 | B5 |
| A5 | A5 |
| B4 | B4 |
| A4 | A4 |
| B3 | B3 |
| A3 | A3 |
| B2 | B2 |
| A2 | A2 |
| B1 | B1 |
| A1 | A1 |



Discrete cable (37 strands) (D-Sub 37P type)

FA-BCBL**DFBL

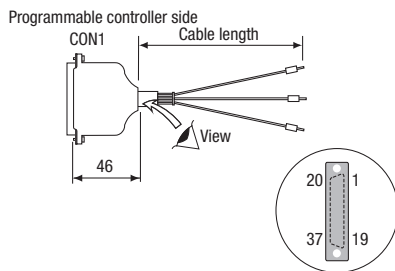
- This is a cable with 37 blue strands, each of which is pulled out from a connection point of a non-Mitsubishi PLC's D-Sub 37P connector type I/O module.
- Pin number mark tubes are provided on the discrete cable side.

Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | 5-747917-2, 1-172928-3 manufactured by TE Connectivity Ltd. |
| Solderless terminal | - |
| Mark tube | Provided (Marks: 1 to 37) |
| Cable | Blue wire with 37 strands (semi-rigid vinyl cable) |
| Nominal cross sectional area of conductor | 0.2mm ² (#24AWG) |
| Conductor configuration | 11 wires/0.16mm |
| Insulator outer diameter | 1.14mm |
| Cable outer diameter | - |
| Rated current | 48VDC/3A |
| Conductor resistance (20°C) | 0.0929Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 1061 80°C 300V |
| Structure diagram | |

| Model | Cable length | Weight |
|---------------|--------------|--------------|
| FA-BCBL30DFBL | 3m | Approx. 600g |

External dimensions



(Unit: mm)

Connection diagram

| CON1 | Mark tube |
|------|-----------|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| 10 | 10 |
| 11 | 11 |
| 12 | 12 |
| 13 | 13 |
| 14 | 14 |
| 15 | 15 |
| 16 | 16 |
| 17 | 17 |
| 18 | 18 |
| 19 | 19 |
| 20 | 20 |
| 21 | 21 |
| 22 | 22 |
| 23 | 23 |
| 24 | 24 |
| 25 | 25 |
| 26 | 26 |
| 27 | 27 |
| 28 | 28 |
| 29 | 29 |
| 30 | 30 |
| 31 | 31 |
| 32 | 32 |
| 33 | 33 |
| 34 | 34 |
| 35 | 35 |
| 36 | 36 |
| 37 | 37 |



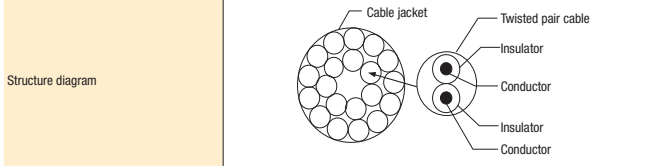
For MELSEC positive common input/sink output (FCN 40P connector and MIL 40P connector)

FA-CBL**FMV

- This cable is used to connect a MELSEC series FCN 40P connector type I/O module and a MELSEC-dedicated 32-point junction terminal block.
- A round 40-core cable is vertically connected to an FCN 40P connector. The other cable end is connected to a MIL 40P connector used for a MELSEC series FCN 40P connector type I/O module or other modules.
- Pulling the cable vertically prevents poor contact, disconnection, or other faults caused by the tension at the upper end of the core wire of the cable from the FCN 40P connector.
- This cable cannot be used for a general-purpose 40-point junction terminal block.

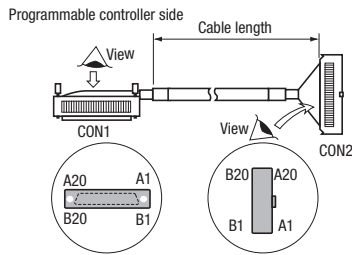
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|--------------|--------------|---------------|
| FA-CBL05FMV | 0.5m | Approx. 100g |
| FA-CBL10FMV | 1m | Approx. 160g |
| FA-CBL20FMV | 2m | Approx. 270g |
| FA-CBL30FMV | 3m | Approx. 390g |
| FA-CBL50FMV | 5m | Approx. 590g |
| FA-CBL80FMV | 8m | Approx. 920g |
| FA-CBL100FMV | 10m | Approx. 1160g |
| FA-CBL150FMV | 15m | Approx. 1730g |
| FA-CBL200FMV | 20m | Approx. 2260g |

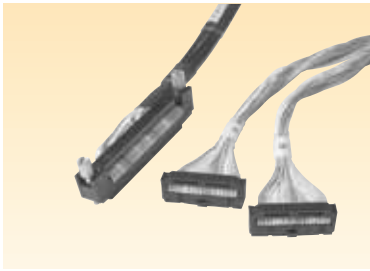
External dimensions



Connection diagram

| CON1 | CON2 |
|------|------|
| B20 | B20 |
| A20 | A20 |
| B19 | B19 |
| A19 | A19 |
| B18 | B18 |
| A18 | A18 |
| B17 | B17 |
| A17 | A17 |
| B16 | B16 |
| A16 | A16 |
| B15 | B15 |
| A15 | A15 |
| B14 | B14 |
| A14 | A14 |
| B13 | B13 |
| A13 | A13 |
| B12 | B12 |
| A12 | A12 |
| B11 | B11 |
| A11 | A11 |
| B10 | B10 |
| A10 | A10 |
| B9 | B9 |
| A9 | A9 |
| B8 | B8 |
| A8 | A8 |
| B7 | B7 |
| A7 | A7 |
| B6 | B6 |
| A6 | A6 |
| B5 | B5 |
| A5 | A5 |
| B4 | B4 |
| A4 | A4 |
| B3 | B3 |
| A3 | A3 |
| B2 | B2 |
| A2 | A2 |
| B1 | B1 |
| A1 | A1 |

*: The cable can be connected to the source output module (QY82P).



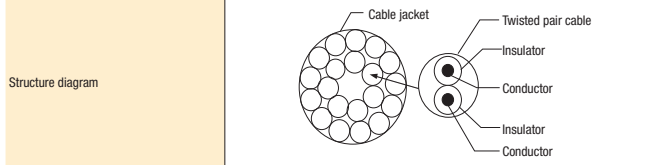
For MELSEC positive common input/sink output (FCN 40P connector and two MIL 20P connectors, branching on MIL 20P connector side)

FA-CBL**FM2V

- A round 40-core cable is pulled out from a MELSEC series FCN 40P connector type I/O module. The other cable end branches into two MIL 20P connectors, each of which is connected to a MELSEC-dedicated 16-point terminal block.
- Pulling the cable vertically prevents poor contact, disconnection, or other faults caused by the tension at the upper end of the core wire of the cable from the FCN 40P connector.
- This cable cannot be used for a general-purpose 20-point junction terminal block.

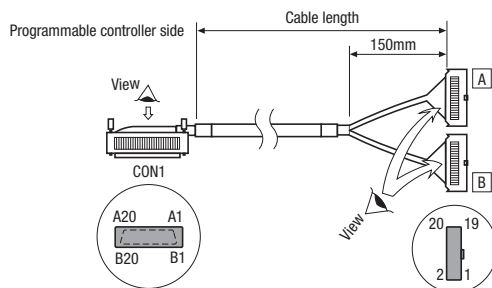
Specifications

| Item | Specifications |
|-------------------------------------------|----------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7920-B500FL, D3448-7920 × 2, manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|---------------|--------------|---------------|
| FA-CBL06FM2V | 0.6m | Approx. 110g |
| FA-CBL10FM2V | 1m | Approx. 160g |
| FA-CBL15FM2V | 1.5m | Approx. 220g |
| FA-CBL20FM2V | 2m | Approx. 270g |
| FA-CBL30FM2V | 3m | Approx. 380g |
| FA-CBL50FM2V | 5m | Approx. 600g |
| FA-CBL100FM2V | 10m | Approx. 1150g |

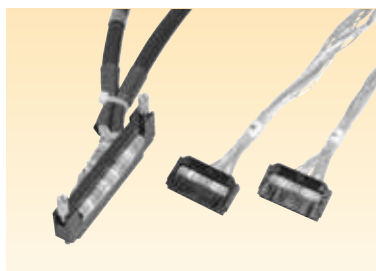
External dimensions



*: A of the 20P connector corresponds to inputs (X0 to XF)/outputs (Y0 to YF), and B of the 20P connector corresponds to inputs (X10 to X1F)/outputs (Y10 to Y1F).

Connection diagram

| MIL 20P connector A | | MIL 20P connector B | |
|---------------------|----|---------------------|----|
| CON1 | | CON1 | |
| B1 | 2 | B2 | 2 |
| A1 | 4 | A2 | 4 |
| B3 | 1 | A3 | 1 |
| B4 | 3 | A4 | 3 |
| B5 | 5 | A5 | 5 |
| B6 | 7 | A6 | 7 |
| B7 | 9 | A7 | 9 |
| B8 | 11 | A8 | 11 |
| B9 | 13 | A9 | 13 |
| B10 | 15 | A10 | 15 |
| B11 | 17 | A11 | 17 |
| B12 | 19 | A12 | 19 |
| B13 | 6 | A13 | 6 |
| B14 | 8 | A14 | 8 |
| B15 | 10 | A15 | 10 |
| B16 | 12 | A16 | 12 |
| B17 | 14 | A17 | 14 |
| B18 | 16 | A18 | 16 |
| B19 | 18 | A19 | 18 |
| B20 | 20 | A20 | 20 |



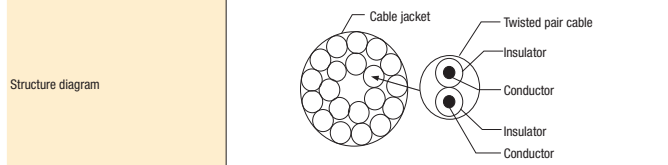
For MELSEC positive common input/sink output (FCN 40P connector and two MIL 20P connectors, branching on programmable controller side)

FA-CBL**FM2LV

- Cables branch into two round 20-core cables on the root of a connector of the MELSEC FCN 40P connector type I/O module. Each cable end has a MIL 20P connector to be connected to a MELSEC-dedicated 16-point junction terminal block.
- Pulling the cable vertically prevents poor contact, disconnection, or other faults caused by the tension at the upper end of the core wire of the cable from the FCN 40P connector.
- This cable cannot be used for a general-purpose 20-point junction terminal block.

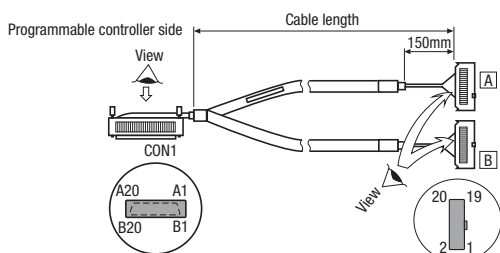
Specifications

| Item | Specifications |
|-------------------------------------------|----------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7920-B500FL, D3448-7920 × 2, manufactured by 3M Japan Limited |
| Cable | Two 20-core cables (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|----------------|--------------|---------------|
| FA-CBL06FM2LV | 0.6m | Approx. 150g |
| FA-CBL10FM2LV | 1m | Approx. 220g |
| FA-CBL20FM2LV | 2m | Approx. 430g |
| FA-CBL30FM2LV | 3m | Approx. 640g |
| FA-CBL50FM2LV | 5m | Approx. 1060g |
| FA-CBL100FM2LV | 10m | Approx. 2110g |

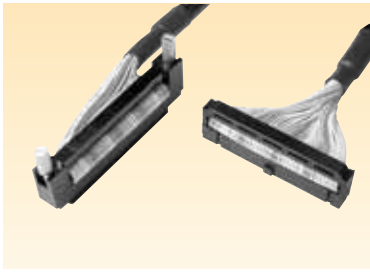
External dimensions



*: A of the 20P connector corresponds to inputs (X0 to XF)/outputs (Y0 to YF), and B of the 20P connector corresponds to inputs (X10 to X1F)/outputs (Y10 to Y1F).

Connection diagram

| MIL 20P connector A | | MIL 20P connector B | |
|---------------------|----|---------------------|----|
| CON1 | | CON1 | |
| B1 | 2 | B2 | 2 |
| A1 | 4 | A2 | 4 |
| B3 | 1 | A3 | 1 |
| B4 | 3 | A4 | 3 |
| B5 | 5 | A5 | 5 |
| B6 | 7 | A6 | 7 |
| B7 | 9 | A7 | 9 |
| B8 | 11 | A8 | 11 |
| B9 | 13 | A9 | 13 |
| B10 | 15 | A10 | 15 |
| B11 | 17 | A11 | 17 |
| B12 | 19 | A12 | 19 |
| B13 | 6 | A13 | 6 |
| B14 | 8 | A14 | 8 |
| B15 | 10 | A15 | 10 |
| B16 | 12 | A16 | 12 |
| B17 | 14 | A17 | 14 |
| B18 | 16 | A18 | 16 |
| B19 | 18 | A19 | 18 |
| B20 | 20 | A20 | 20 |



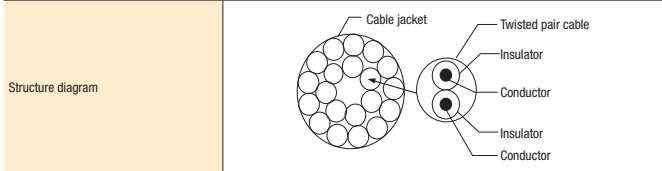
For MELSEC negative common input (FCN 40P connector and MIL 40P connector)

FA-CBL**FMVE

- This cable is used to connect a MELSEC series FCN 40P connector type negative common input module and a MELSEC-dedicated 32-point junction terminal block.
- Pulling the cable vertically prevents poor contact, disconnection, or other faults caused by the tension at the upper end of the core wire of the cable from the FCN 40P connector.
- This cable cannot be used for a general-purpose 40-point junction terminal block.

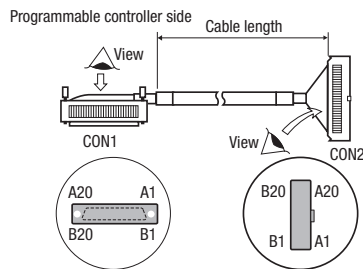
Specifications

| Item | Specifications |
|-------------------------------------------|--------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-ALU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20° C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |

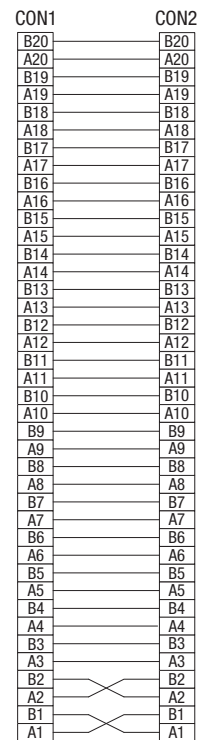


| Model | Cable length | Weight |
|--------------|--------------|--------------|
| FA-CBL05FMVE | 0.5m | Approx. 100g |
| FA-CBL10FMVE | 1m | Approx. 140g |
| FA-CBL20FMVE | 2m | Approx. 270g |
| FA-CBL30FMVE | 3m | Approx. 400g |

External dimensions



Connection diagram





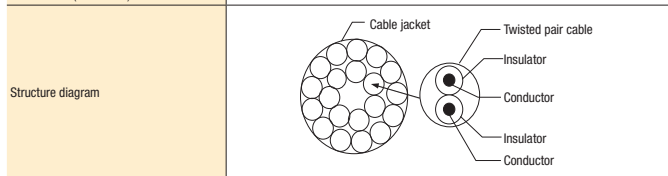
For MELSEC negative common input (D-Sub 37P connector and MIL 40P connector)

FA-CBL**DMFX

- This cable is used to connect a MELSEC series D-Sub 37P connector type negative common input module and a MELSEC-dedicated 32-point junction terminal block.
- This cable cannot be used for a general-purpose 40-point junction terminal block.

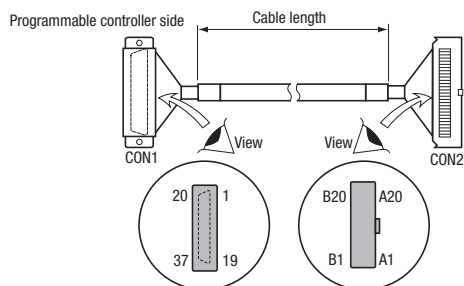
Specifications

| Item | Specifications |
|-------------------------------------------|-----------------------------------------------------------|
| Programmable controller side connector | 1658612-1, 747275-1 manufactured by TE Connectivity Ltd. |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|---------------|--------------|---------------|
| FA-CBL05DMFX | 0.5m | Approx. 110g |
| FA-CBL10DMFX | 1m | Approx. 160g |
| FA-CBL20DMFX | 2m | Approx. 270g |
| FA-CBL30DMFX | 3m | Approx. 390g |
| FA-CBL50DMFX | 5m | Approx. 610g |
| FA-CBL100DMFX | 10m | Approx. 1190g |

External dimensions



Connection diagram

| CON1 | CON2 |
|------|------|
| 1 | B20 |
| 2 | B18 |
| 3 | B16 |
| 4 | B14 |
| 5 | B12 |
| 6 | B10 |
| 7 | B8 |
| 8 | B6 |
| 9 | A20 |
| 10 | A18 |
| 11 | A16 |
| 12 | A14 |
| 13 | A12 |
| 14 | A10 |
| 15 | A8 |
| 16 | A6 |
| 17 | A2 |
| 18 | A1 |
| 19 | B2 |
| 20 | B19 |
| 21 | B17 |
| 22 | B15 |
| 23 | B13 |
| 24 | B11 |
| 25 | B9 |
| 26 | B7 |
| 27 | B5 |
| 28 | A19 |
| 29 | A17 |
| 30 | A15 |
| 31 | A13 |
| 32 | A11 |
| 33 | A9 |
| 34 | A7 |
| 35 | A5 |
| 36 | A4 |
| 37 | A3 |
| NC | B4 |
| NC | B1 |
| NC | B3 |



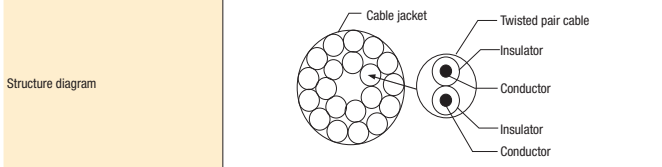
For MELSEC source output (D-Sub 37P connector and MIL 40P connector)

FA-CBL**DMFY

- This cable is used to connect a MELSEC series D-Sub 37P connector type source output module and a MELSEC-dedicated 32-point junction terminal block.
- This cable cannot be used for a general-purpose 40-point junction terminal block.

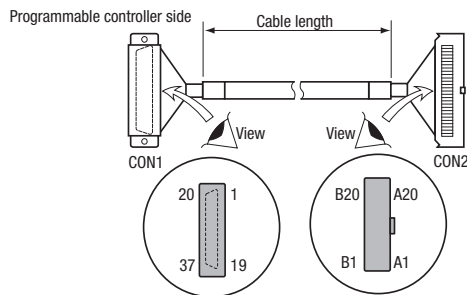
Specifications

| Item | Specifications |
|-------------------------------------------|-----------------------------------------------------------|
| Programmable controller side connector | 1658612-1, 747275-1 manufactured by TE Connectivity Ltd. |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|---------------|--------------|---------------|
| FA-CBL05DMFY | 0.5m | Approx. 110g |
| FA-CBL10DMFY | 1m | Approx. 160g |
| FA-CBL20DMFY | 2m | Approx. 270g |
| FA-CBL30DMFY | 3m | Approx. 390g |
| FA-CBL50DMFY | 5m | Approx. 610g |
| FA-CBL100DMFY | 10m | Approx. 1190g |

External dimensions



Connection diagram

| CON1 | CON2 |
|------|------|
| 1 | B20 |
| 2 | B18 |
| 3 | B16 |
| 4 | B14 |
| 5 | B12 |
| 6 | B10 |
| 7 | B8 |
| 8 | B6 |
| 9 | A20 |
| 10 | A18 |
| 11 | A16 |
| 12 | A14 |
| 13 | A12 |
| 14 | A10 |
| 15 | A8 |
| 16 | A6 |
| 17 | B2 |
| 18 | B1 |
| 19 | A2 |
| 20 | B19 |
| 21 | B17 |
| 22 | B15 |
| 23 | B13 |
| 24 | B11 |
| 25 | B9 |
| 26 | B7 |
| 27 | B5 |
| 28 | A19 |
| 29 | A17 |
| 30 | A15 |
| 31 | A13 |
| 32 | A11 |
| 33 | A9 |
| 34 | A7 |
| 35 | A5 |
| 36 | B4 |
| 37 | A1 |
| | B3 |
| | A4 |
| | A3 |



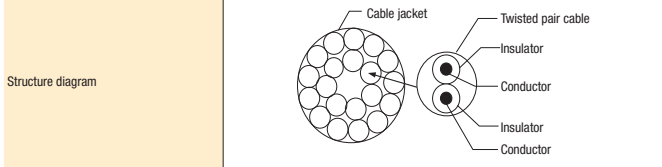
**For MELSEC source output
(D-Sub 37P connector and two MIL 20P connectors, branching on MIL 20P connector side)**

FA-CBLDM2FY**

- This cable is used to connect a MELSEC series D-Sub 37P connector type output module and a MELSEC-dedicated 16-point junction terminal block.
- This cable cannot be used for a general-purpose 20-point junction terminal block.

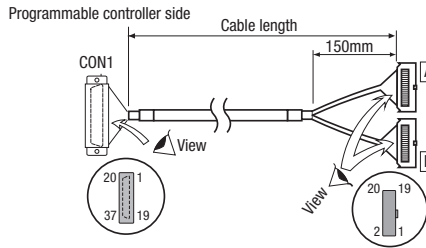
Specifications

| Item | Specifications |
|-------------------------------------------|----------------------------------------------------------------|
| Programmable controller side connector | 1658612-1, 747275-1 manufactured by TE Connectivity Ltd. |
| Module side connector | D7920-B500FL, D3448-7920 × 2, manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|---------------|--------------|--------------|
| FA-CBL20DM2FY | 2m | Approx. 250g |

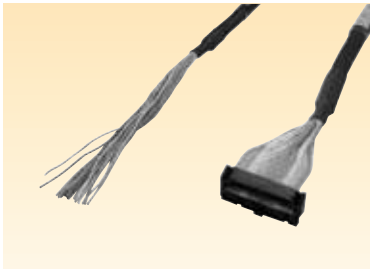
External dimensions



*: A of the 20P connector corresponds to outputs (Y0 to YF), and B of the 20P connector corresponds to outputs (Y10 to Y1F).

Connection diagram

| MIL 20P connector A-side | | | MIL 20P connector B-side | | |
|--------------------------|----|----|--------------------------|----|----|
| CON1 | NC | 3 | CON1 | NC | 3 |
| 17 | | 1 | 36 | | 1 |
| 18 | | 2 | 19 | | 2 |
| 37 | | 4 | 19 | | 4 |
| 27 | | 5 | 35 | | 5 |
| 8 | | 7 | 16 | | 7 |
| 26 | | 9 | 34 | | 9 |
| 7 | | 11 | 15 | | 11 |
| 25 | | 13 | 33 | | 13 |
| 6 | | 15 | 14 | | 15 |
| 24 | | 17 | 32 | | 17 |
| 5 | | 19 | 13 | | 19 |
| 23 | | 6 | 31 | | 6 |
| 4 | | 8 | 12 | | 8 |
| 22 | | 10 | 30 | | 10 |
| 3 | | 12 | 11 | | 12 |
| 21 | | 14 | 29 | | 14 |
| 2 | | 16 | 10 | | 16 |
| 20 | | 18 | 28 | | 18 |
| 1 | | 20 | 9 | | 20 |



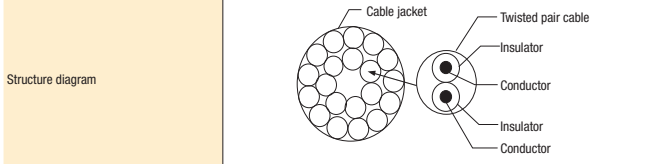
For MELSEC terminal block I/O (discrete cable and MIL 20P connector)

FA-CBL**M20

■ This cable is used to connect a MELSEC terminal block DC I/O module and a MELSEC-dedicated 16-point junction terminal block.

Specifications

| Item | Specifications |
|-------------------------------------------|-----------------------------------------------------------|
| Programmable controller side connector | - |
| Module side connector | D7920-B500FL, D3448-7920 manufactured by 3M Japan Limited |
| Cable | 20-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 8.1mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ-km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|-------------|--------------|--------------|
| FA-CBL06M20 | 0.6m | Approx. 70g |
| FA-CBL10M20 | 1m | Approx. 110g |
| FA-CBL20M20 | 2m | Approx. 210g |

Connection example

| QY40P | | FA-CBL**M20 | | | | FA-TB16XY | |
|--------------|-------------|-------------|-----------|----------------|---------------|---------------|-------------|
| Terminal No. | Signal name | Core color | Dot color | Number of dots | Connector No. | Connector No. | Signal name |
| 1 | Y0 | Pink | Black | 2 | 20 | 20 | Y0 |
| 2 | Y1 | Yellow | Black | 2 | 18 | 18 | Y1 |
| 3 | Y2 | White | Black | 2 | 16 | 16 | Y2 |
| 4 | Y3 | Gray | Black | 2 | 14 | 14 | Y3 |
| 5 | Y4 | Orange | Black | 2 | 12 | 12 | Y4 |
| 6 | Y5 | Pink | Black | 1 | 10 | 10 | Y5 |
| 7 | Y6 | Yellow | Black | 1 | 8 | 8 | Y6 |
| 8 | Y7 | White | Black | 1 | 6 | 6 | Y7 |
| 9 | Y8 | Pink | Red | 2 | 19 | 19 | Y8 |
| 10 | Y9 | Yellow | Red | 2 | 17 | 17 | Y9 |
| 11 | YA | White | Red | 2 | 15 | 15 | YA |
| 12 | YB | Gray | Red | 2 | 13 | 13 | YB |
| 13 | YC | Orange | Red | 2 | 11 | 11 | YC |
| 14 | YD | Pink | Red | 1 | 9 | 9 | YD |
| 15 | YE | Yellow | Red | 1 | 7 | 7 | YE |
| 16 | YF | White | Red | 1 | 5 | 5 | YF |
| 17 | 24VDC | Orange | Black | 1 | 2 | 2 | 24VDC |
| | | Orange | Red | 1 | 1 | 1 | |
| 18 | COM | Gray | Black | 1 | 4 | 4 | OVDC |
| | | Gray | Red | 1 | 3 | 3 | |

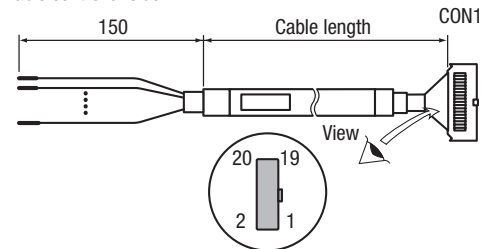
Connection diagram

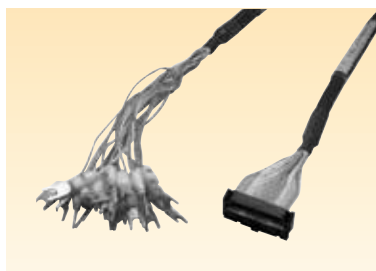
| Discrete cable | | | CON1 |
|----------------|-----------|----------------|------|
| Core color | Dot color | Number of dots | |
| Orange | Red | 1 | 1 |
| Orange | Black | 1 | 2 |
| Gray | Red | 1 | 3 |
| Gray | Black | 1 | 4 |
| White | Red | 1 | 5 |
| White | Black | 1 | 6 |
| Yellow | Red | 1 | 7 |
| Yellow | Black | 1 | 8 |
| Pink | Red | 1 | 9 |
| Pink | Black | 1 | 10 |
| Orange | Red | 2 | 11 |
| Orange | Black | 2 | 12 |
| Gray | Red | 2 | 13 |
| Gray | Black | 2 | 14 |
| White | Red | 2 | 15 |
| White | Black | 2 | 16 |
| Yellow | Red | 2 | 17 |
| Yellow | Black | 2 | 18 |
| Pink | Red | 2 | 19 |
| Pink | Black | 2 | 20 |

External dimensions

(Unit: mm)

Programmable controller side



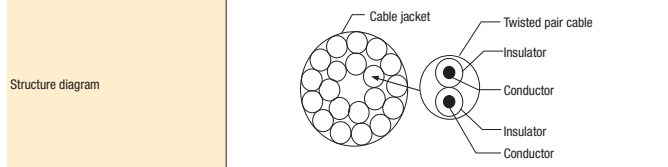


For MELSEC terminal block I/O (Y-shaped solderless terminals and MIL 20P connector) FA-CBL**YM20

■ This cable is used to connect a MELSEC terminal block DC I/O module and a MELSEC-dedicated 16-point junction terminal block.

Specifications

| Item | Specifications |
|-------------------------------------------|----------------------------------------------------------------------------|
| Programmable controller side connector | Y-shaped solderless terminal: Y1.25-3.5K, with mark tubes (Marks: 1 to 20) |
| Module side connector | D7920-B500FL, D3448-7920 manufactured by 3M Japan Limited |
| Cable | 20-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 8.1mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |

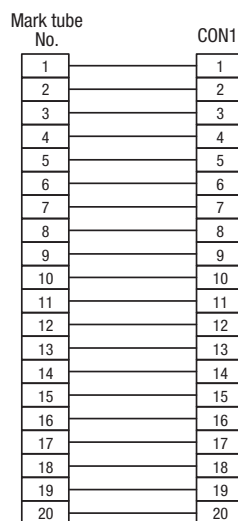


| Model | Cable length | Weight |
|--------------|--------------|--------------|
| FA-CBL10YM20 | 1m | Approx. 130g |
| FA-CBL20YM20 | 2m | Approx. 230g |
| FA-CBL30YM20 | 3m | Approx. 320g |
| FA-CBL50YM20 | 5m | Approx. 520g |

Connection example

| QY40P | | FA-CBL**YM20 | | FA-TB16XY | |
|--------------|-------------|--------------|---------------|---------------|-------------|
| Terminal No. | Signal name | Mark tube | Connector No. | Connector No. | Signal name |
| 1 | Y0 | 20 | 20 | 20 | Y0 |
| 2 | Y1 | 18 | 18 | 18 | Y1 |
| 3 | Y2 | 16 | 16 | 16 | Y2 |
| 4 | Y3 | 14 | 14 | 14 | Y3 |
| 5 | Y4 | 12 | 12 | 12 | Y4 |
| 6 | Y5 | 10 | 10 | 10 | Y5 |
| 7 | Y6 | 8 | 8 | 8 | Y6 |
| 8 | Y7 | 6 | 6 | 6 | Y7 |
| 9 | Y8 | 19 | 19 | 19 | Y8 |
| 10 | Y9 | 17 | 17 | 17 | Y9 |
| 11 | YA | 15 | 15 | 15 | YA |
| 12 | YB | 13 | 13 | 13 | YB |
| 13 | YC | 11 | 11 | 11 | YC |
| 14 | YD | 9 | 9 | 9 | YD |
| 15 | YE | 7 | 7 | 7 | YE |
| 16 | YF | 5 | 5 | 5 | YF |
| 17 | 24VDC | 2 | 2 | 2 | 24VDC |
| 18 | COM | 1 | 1 | 1 | 0VDC |
| | | 4 | 4 | 4 | |
| | | 3 | 3 | 3 | |

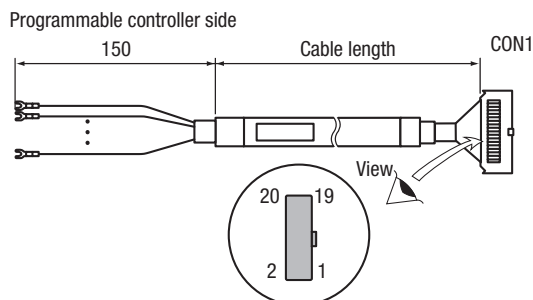
Connection diagram



Pin numbers of the MIL connector are marked on mark tubes.

External dimensions

(Unit: mm)





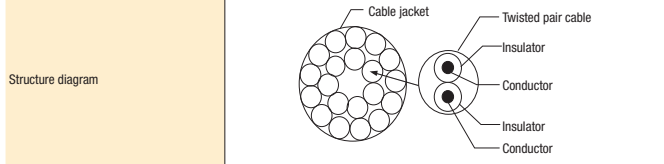
For MELSEC terminal block I/O (MELSEC-Q terminal block and MIL 20P connector)

FA-CBL**TMV20

■ This cable is used to connect a MELSEC-Q/Q-R series terminal block DC I/O module and a MELSEC-dedicated 16-point junction terminal block.

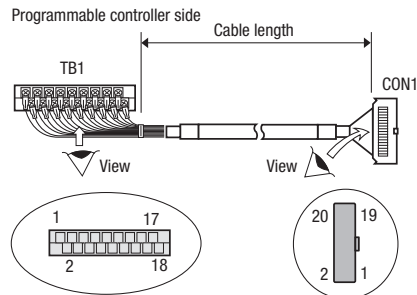
Specifications

| Item | Specifications |
|-------------------------------------------|-----------------------------------------------------------|
| Programmable controller side connector | MELSEC-Q terminal block |
| Module side connector | D7920-B500FL, D3448-7920 manufactured by 3M Japan Limited |
| Cable | 20-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 8.1mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |

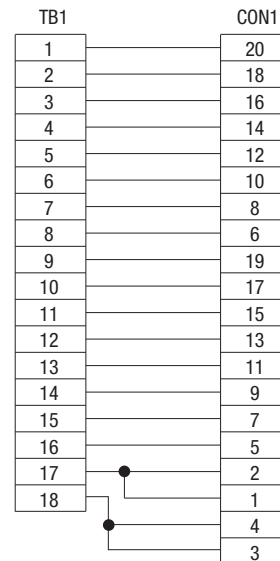


| Model | Cable length | Weight |
|---------------|--------------|--------------|
| FA-CBL06TMV20 | 0.6m | Approx. 130g |
| FA-CBL10TMV20 | 1m | Approx. 170g |
| FA-CBL20TMV20 | 2m | Approx. 260g |
| FA-CBL30TMV20 | 3m | Approx. 360g |

External dimensions



Connection diagram





For connecting distributed type modules, or general-purpose (MIL 40P connector and MIL 40P connector)

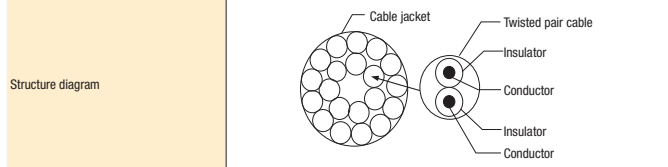
FA-CBL**MMH

- This 40-core cable has MIL 40P connectors at both ends, and is used to connect distributed type junction terminal blocks.
- The cable is used to connect a MIL 40P connector of a controller and a general-purpose 40P junction terminal block. (For a MIL 40P connector on controller side, use the 3432-6002LCPL (straight type) and 3432-5002LCPL (right-angle type) manufactured by 3M Japan Limited.)

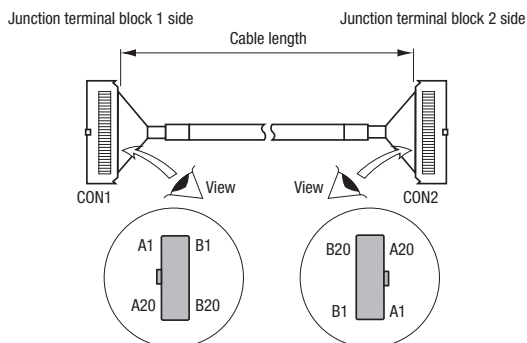
Specifications

| Item | Specifications |
|-------------------------------------------|-----------------------------------------------------------|
| Programmable controller side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |

| Model | Cable length | Weight |
|--------------|--------------|---------------|
| FA-CBL05MMH | 0.5m | Approx. 90g |
| FA-CBL10MMH | 1m | Approx. 140g |
| FA-CBL20MMH | 2m | Approx. 260g |
| FA-CBL30MMH | 3m | Approx. 370g |
| FA-CBL50MMH | 5m | Approx. 590g |
| FA-CBL80MMH | 8m | Approx. 880g |
| FA-CBL100MMH | 10m | Approx. 1130g |

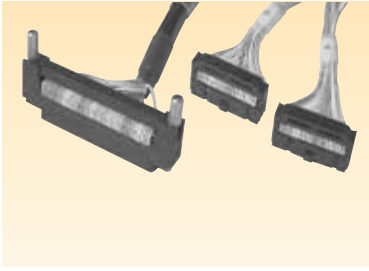


External dimensions



Connection diagram

| CON1 | CON2 |
|------|------|
| B20 | B20 |
| A20 | A20 |
| B19 | B19 |
| A19 | A19 |
| B18 | B18 |
| A18 | A18 |
| B17 | B17 |
| A17 | A17 |
| B16 | B16 |
| A16 | A16 |
| B15 | B15 |
| A15 | A15 |
| B14 | B14 |
| A14 | A14 |
| B13 | B13 |
| A13 | A13 |
| B12 | B12 |
| A12 | A12 |
| B11 | B11 |
| A11 | A11 |
| B10 | B10 |
| A10 | A10 |
| B9 | B9 |
| A9 | A9 |
| B8 | B8 |
| A8 | A8 |
| B7 | B7 |
| A7 | A7 |
| B6 | B6 |
| A6 | A6 |
| B5 | B5 |
| A5 | A5 |
| B4 | B4 |
| A4 | A4 |
| B3 | B3 |
| A3 | A3 |
| B2 | B2 |
| A2 | A2 |
| B1 | B1 |
| A1 | A1 |



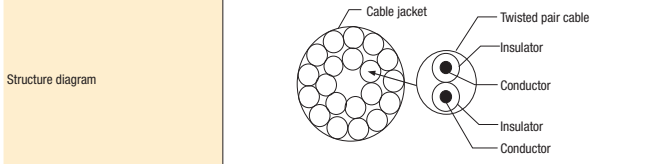
For positive common input/sink output of Mitsubishi Electric CC-Link remote I/O module (FCN 40P connector and two MIL 20P connectors, branching on MIL 20P connector side)

FA-CBL**FM2H

■ A round 40-core cable is pulled out from a connection point of the Mitsubishi Electric CC-Link FCN 40P connector type remote I/O module. The other cable end branches into two MIL 20P connectors, each of which is connected to a MELSEC-dedicated 16-point junction terminal block.

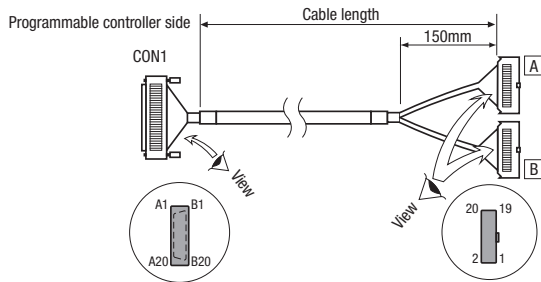
Specifications

| Item | Specifications |
|-------------------------------------------|----------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7920-B500FL, D3448-7920 × 2, manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|--------------|--------------|--------------|
| FA-CBL03FM2H | 0.3m | Approx. 80g |
| FA-CBL10FM2H | 1m | Approx. 150g |
| FA-CBL20FM2H | 2m | Approx. 270g |
| FA-CBL30FM2H | 3m | Approx. 380g |

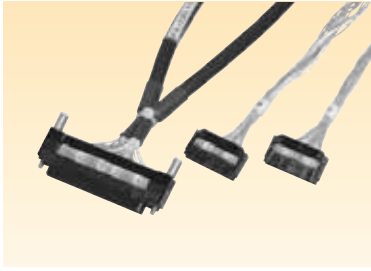
External dimensions



*: A of the 20P connector corresponds to inputs (X0 to XF)/outputs (Y0 to YF), and B of the 20P connector corresponds to inputs (X10 to X1F)/outputs (Y10 to Y1F).

Connection diagram

| MIL 20P connector A-side | | MIL 20P connector B-side | |
|--------------------------|----|--------------------------|----|
| CON1 | | CON1 | |
| B1 | 2 | B2 | 2 |
| A1 | 4 | A2 | 4 |
| B3 | 1 | A3 | 1 |
| B4 | 3 | A4 | 3 |
| B5 | 5 | A5 | 5 |
| B6 | 7 | A6 | 7 |
| B7 | 9 | A7 | 9 |
| B8 | 11 | A8 | 11 |
| B9 | 13 | A9 | 13 |
| B10 | 15 | A10 | 15 |
| B11 | 17 | A11 | 17 |
| B12 | 19 | A12 | 19 |
| B13 | 6 | A13 | 6 |
| B14 | 8 | A14 | 8 |
| B15 | 10 | A15 | 10 |
| B16 | 12 | A16 | 12 |
| B17 | 14 | A17 | 14 |
| B18 | 16 | A18 | 16 |
| B19 | 18 | A19 | 18 |
| B20 | 20 | A20 | 20 |



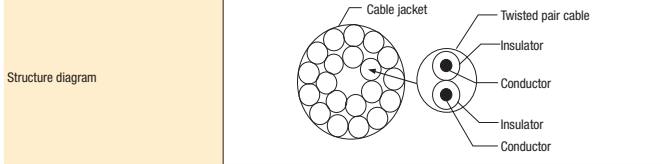
For positive common input/sink output of Mitsubishi Electric CC-Link remote I/O module (FCN 40P connector and two MIL 20P connectors, branching on programmable controller side)

FA-CBLFM2LH**

■ Cables branch into two round 20-core cables on the root of a connection point of the Mitsubishi Electric CC-Link FCN 40P connector type remote I/O module. Each cable end has a MIL 20P connector to be connected to a MELSEC-dedicated 16-point junction terminal block.

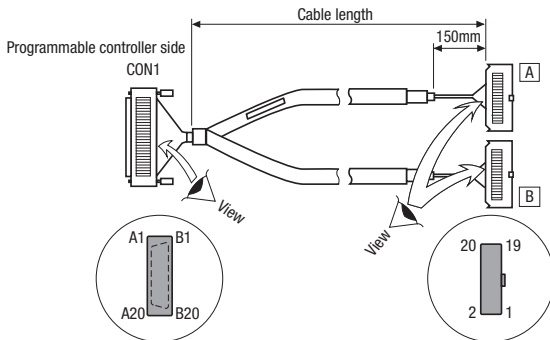
Specifications

| Item | Specifications |
|-------------------------------------------|----------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7920-B500FL, D3448-7920 × 2, manufactured by 3M Japan Limited |
| Cable | Two 20-core cables (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 8.1mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|---------------|--------------|---------------|
| FA-CBL10FM2LH | 1m | Approx. 230g |
| FA-CBL20FM2LH | 2m | Approx. 430g |
| FA-CBL30FM2LH | 3m | Approx. 640g |
| FA-CBL50FM2LH | 5m | Approx. 1040g |

External dimensions



*: A of the 20P connector corresponds to inputs (X0 to XF)/outputs (Y0 to YF), and B of the 20P connector corresponds to inputs (X10 to X1F)/outputs (Y10 to Y1F).

Connection diagram

| MIL 20P connector A-side | | MIL 20P connector B-side | |
|--------------------------|----|--------------------------|----|
| CON1 | | CON1 | |
| B1 | 2 | B2 | 2 |
| A1 | 4 | A2 | 4 |
| B3 | 1 | A3 | 1 |
| B4 | 3 | A4 | 3 |
| B5 | 5 | A5 | 5 |
| B6 | 7 | A6 | 7 |
| B7 | 9 | A7 | 9 |
| B8 | 11 | A8 | 11 |
| B9 | 13 | A9 | 13 |
| B10 | 15 | A10 | 15 |
| B11 | 17 | A11 | 17 |
| B12 | 19 | A12 | 19 |
| B13 | 6 | A13 | 6 |
| B14 | 8 | A14 | 8 |
| B15 | 10 | A15 | 10 |
| B16 | 12 | A16 | 12 |
| B17 | 14 | A17 | 14 |
| B18 | 16 | A18 | 16 |
| B19 | 18 | A19 | 18 |
| B20 | 20 | A20 | 20 |



For Mitsubishi Electric CC-Link/LT remote I/O module (MIL 20P connector and MIL 20P connector)

FA-CBL**MMH20

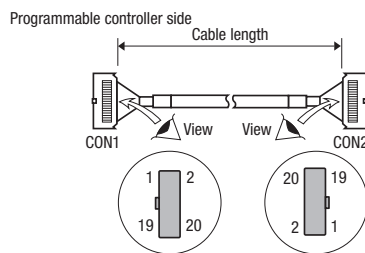
- This cable is used to connect a Mitsubishi Electric MIL 20P connector type CC-Link/LT remote I/O module and a MELSEC-dedicated 16-point junction terminal block.
- The cable is used to connect a MIL 20P connector of a controller and a general-purpose 20P junction terminal block. (For a MIL 20P connector on controller side, use the 3428-6002LCPL (straight type) and 3428-5002LCPL (right-angle type) manufactured by 3M Japan Limited.)

Specifications

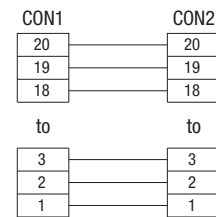
| Item | Specifications |
|-------------------------------------------|-----------------------------------------------------------|
| Programmable controller side connector | D7920-B500FL, D3448-7920 manufactured by 3M Japan Limited |
| Module side connector | D7920-B500FL, D3448-7920 manufactured by 3M Japan Limited |
| Cable | 20-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 8.1mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |
| Structure diagram | |

| Model | Cable length | Weight |
|---------------|--------------|--------------|
| FA-CBL06MMH20 | 0.6m | Approx. 90g |
| FA-CBL10MMH20 | 1m | Approx. 130g |
| FA-CBL20MMH20 | 2m | Approx. 230g |
| FA-CBL30MMH20 | 3m | Approx. 330g |
| FA-CBL50MMH20 | 5m | Approx. 530g |

External dimensions



Connection diagram





Connection cable for 16-point input/output sink

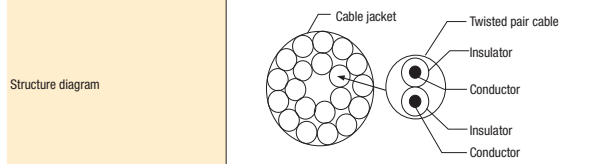
FA-FXCBL**MMH20

■ This cable is used to connect a 16-point junction terminal block or digital signal converter and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module, extension block.

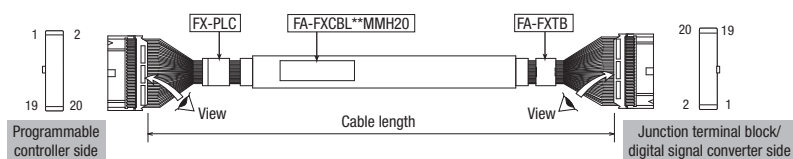
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------|
| Cable | 20-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 8.1mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

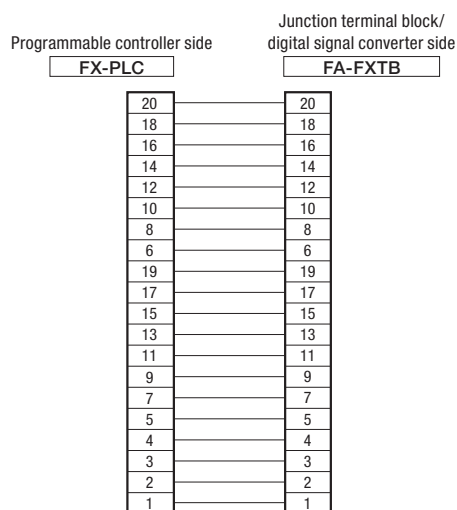
| Model | Cable length | Programmable controller side connector | Junction terminal block / digital signal converter side connector |
|-----------------|--------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| FA-FXCBL06MMH20 | 0.6m | MIL 20P connector FRCS-A020-3TDS-FA (manufactured by DDK Ltd.) | MIL 20P connector D7820-B500FL, D3448-7920 (manufactured by 3M Japan Limited) |
| FA-FXCBL10MMH20 | 1m | | |
| FA-FXCBL15MMH20 | 1.5m | | |
| FA-FXCBL20MMH20 | 2m | | |
| FA-FXCBL30MMH20 | 3m | | |



External dimensions



Connection diagram





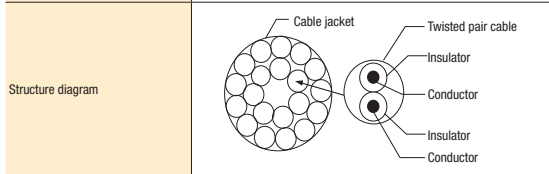
Connection cable for 16-point input/output source

FA2-CB1L**MM1H20E

■ This cable is used to connect a 16-point junction terminal block or digital signal converter and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module, extension block.

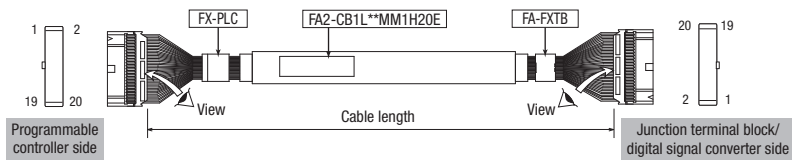
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------|
| Cable | 20-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 8.1mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

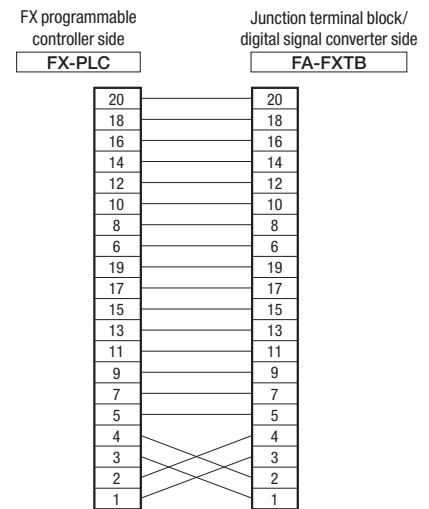


| Model | Cable length | Programmable controller side connector | Terminal block side connector |
|-------------------|--------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| FA2-CB1L06MM1H20E | 0.6m | MIL 20P connector FRCS-AQ20-3TOS-FA (manufactured by DDK Ltd.) | MIL 20P connector D7920-B500FL, D3448-7920 (manufactured by 3M Japan Limited) |
| FA2-CB1L10MM1H20E | 1m | | |
| FA2-CB1L15MM1H20E | 1.5m | | |
| FA2-CB1L20MM1H20E | 2m | | |
| FA2-CB1L30MM1H20E | 3m | | |

External dimensions



Connection diagram





Connection cable for 16-point input/output sink, withstanding -20°C

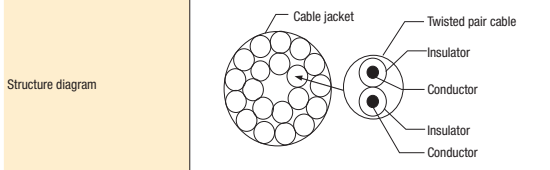
FA2-CB1LT**MM1H20

■ This cable is used to connect a 16-point junction terminal block or digital signal converter and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module, extension block.

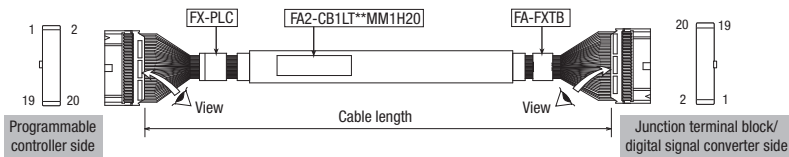
Specifications

| Item | Specifications |
|-----------------------------|-------------------------------|
| Cable type | Round 20-core cable |
| Conductor configuration | 7 wires/0.127mm (#28AWG) |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter, color | 8.1mm (standard), black |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 50MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

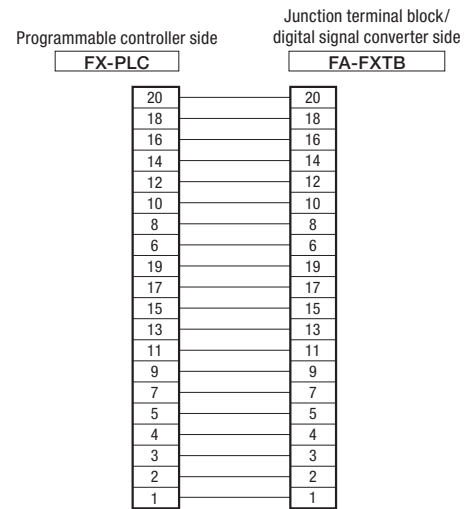
| Model | Cable length | Programmable controller side connector | Terminal block side connector |
|-------------------|--------------|-------------------------------------------------|----------------------------------------------------------------|
| FA2-CB1LT10MM1H20 | 1m | MIL 20P connector | MIL 20P connector |
| FA2-CB1LT20MM1H20 | 2m | FRC5-A020-3TOS-FA (manufactured by DDK Ltd.) | D7920-B500FL, D3448-7920 (manufactured by 3M Japan Limited) |
| FA2-CB1LT30MM1H20 | 3m | | |



External dimensions



Connection diagram





Connection cable for 16-point input/output source, withstanding -20°C

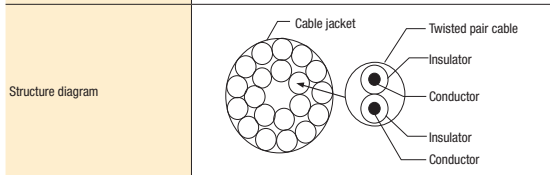
FA2-CB1LT**MM1H20E

■ This cable is used to connect a 16-point junction terminal block or digital signal converter and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module, extension block.

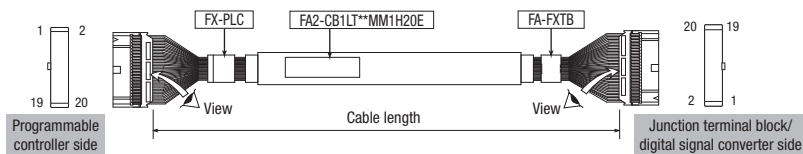
Specifications

| Item | Specifications |
|-----------------------------|-------------------------------|
| Cable type | Round 20-core cable |
| Conductor configuration | 7 wires/0.127mm (#28AWG) |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter, color | 8.1mm (standard), black |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 50MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

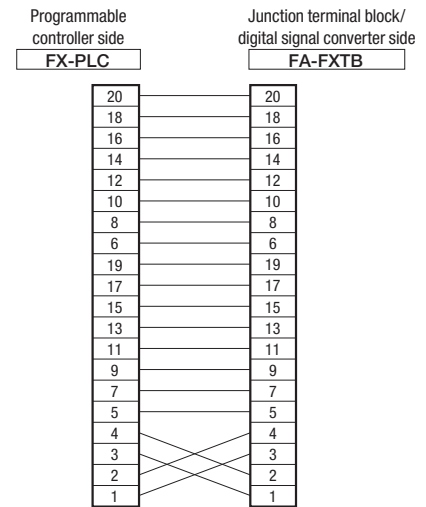
| Model | Cable length | Programmable controller side connector | Terminal block side connector |
|--------------------|--------------|-------------------------------------------------|----------------------------------------------------------------|
| FA2-CB1LT10MM1H20E | 1m | MIL 20P connector | MIL 20P connector |
| FA2-CB1LT20MM1H20E | 2m | FRC5-A020-3TOS-FA (manufactured by DDK Ltd.) | D7920-B500FL, D3448-7920 (manufactured by 3M Japan Limited) |
| FA2-CB1LT30MM1H20E | 3m | | |



External dimensions



Connection diagram





Connection cable for 32-point input/output sink

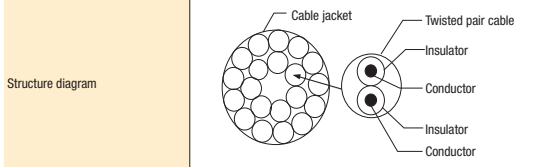
FA-FXCBL**MM2H

■ This cable is used to connect a 32-point junction terminal block and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module, extension block.

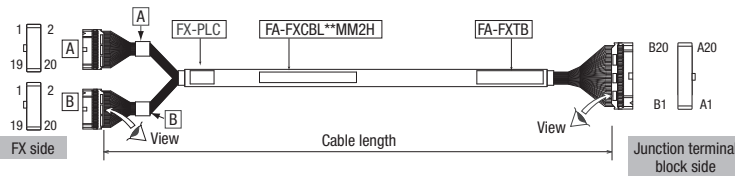
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------|
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

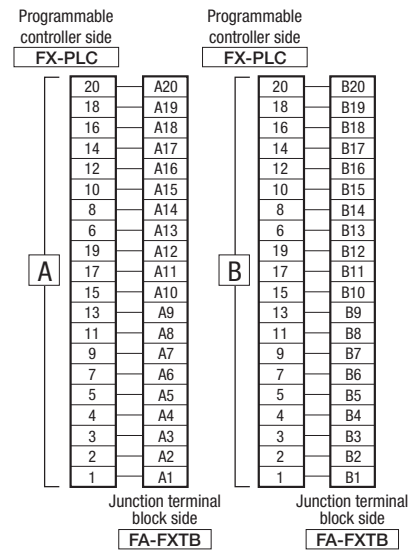
| Model | Cable length | Programmable controller side connector | Terminal block side connector |
|----------------|--------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| FA-FXCBL06MM2H | 0.6m | MIL 20P connector FRC5-A020-3TOS-FA (manufactured by DDK Ltd.) × 2 | MIL 40P connector D7940-7500SC, D3448-7940 (manufactured by 3M Japan Limited) |
| FA-FXCBL10MM2H | 1m | | |
| FA-FXCBL15MM2H | 1.5m | | |
| FA-FXCBL20MM2H | 2m | | |
| FA-FXCBL30MM2H | 3m | | |



External dimensions



Connection diagram





Connection cable for 32-point input/output sink, withstanding -20°C

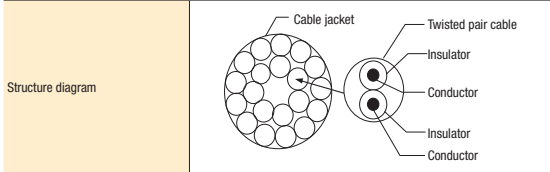
FA2-CB1LT**MM2H

■ This cable is used to connect a 32-point junction terminal block and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module, extension block.

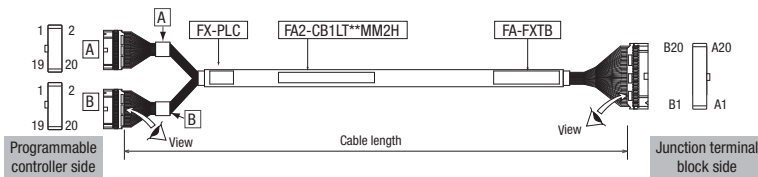
Specifications

| Item | Specifications |
|-----------------------------|-------------------------------|
| Cable type | Round 40-core cable |
| Conductor configuration | 7 wires/0.127mm (#28AWG) |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter, color | 9.5mm (standard), black |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 50MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

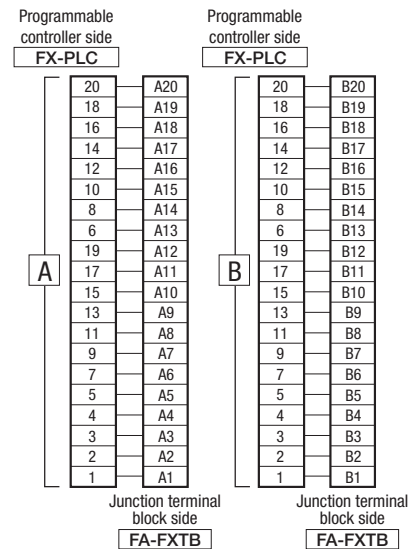
| Model | Cable length | Programmable controller side connector | Terminal block side connector |
|-----------------|--------------|-----------------------------------------------------|----------------------------------------------------------------|
| FA2-CB1LT10MM2H | 1m | MIL 20P connector | MIL 40P connector |
| FA2-CB1LT20MM2H | 2m | FRC5-A020-3TOS-FA (manufactured by DDK Ltd.) × 2 | D7940-7500SC, D3448-7940 (manufactured by 3M Japan Limited) |
| FA2-CB1LT30MM2H | 3m | | |



External dimensions



Connection diagram





Connection cable for 16-point input/16-point output mixed terminal block

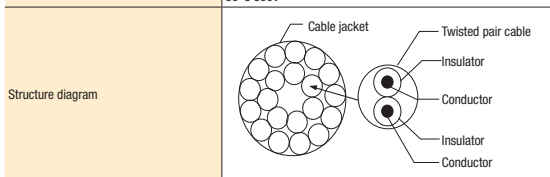
FA-FXCBL**MM2H16X16Y

■ This cable is used to connect a 16-point input/16-point output mixed junction terminal block FA-FXTB16X16Y and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module.

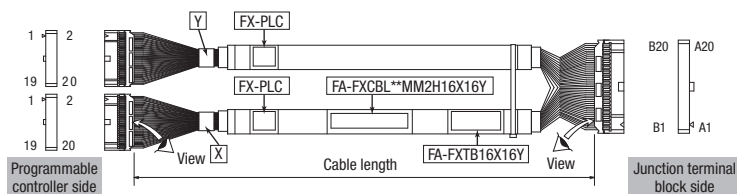
Specifications

| Item | Specifications |
|-----------------------------|-------------------------------|
| Cable | Round 20-core cable |
| Conductor configuration | 7 wires/0.127mm (#28AWG) |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter, color | 8.1mm (standard), black |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

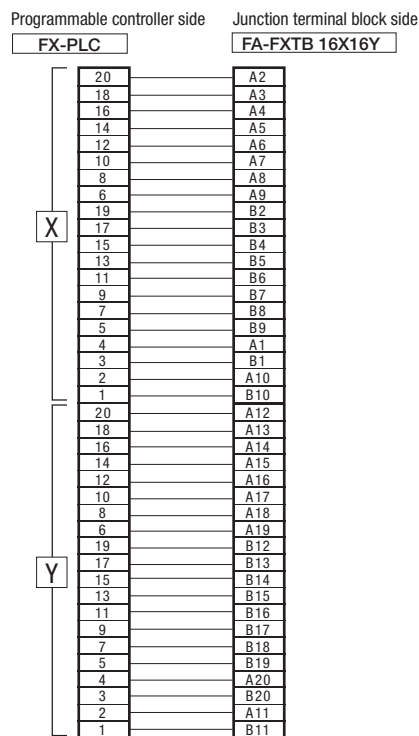
| Model | Cable length | Programmable controller side connector | Terminal block side connector |
|----------------------|--------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| FA-FXCBL06MM2H16X16Y | 0.6m | MIL 20P connector FRCS-A020-3T0S-FA (manufactured by DDK Ltd.) × 2 | MIL 40P connector D7940-7500SC, D3448-7940 (manufactured by 3M Japan Limited) |
| FA-FXCBL10MM2H16X16Y | 1m | | |
| FA-FXCBL15MM2H16X16Y | 1.5m | | |
| FA-FXCBL20MM2H16X16Y | 2m | | |
| FA-FXCBL30MM2H16X16Y | 3m | | |



External dimensions



Connection diagram





Connection cable for 16-point input/16-point output mixed terminal block, withstanding -20°C

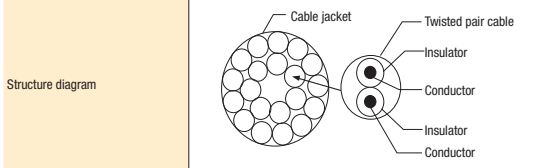
FA2-CB1LT**MM2H16X16Y

■ This cable is used to connect a 16-point input/16-point output mixed junction terminal block FA-FXTB16X16Y and a Mitsubishi Electric micro programmable controller iQ-F/F series connector-type main unit/CPU module/I/O module.

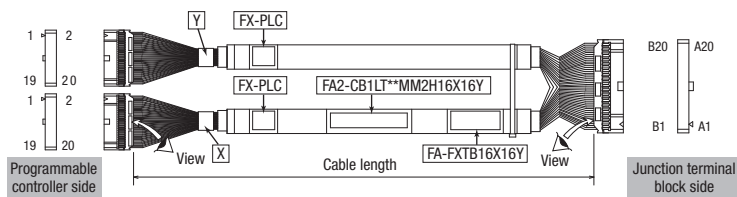
Specifications

| Item | Specifications |
|-----------------------------|-----------------------------------------|
| Cable type | Two round 20-core cables (color: black) |
| Conductor configuration | 7 wires/0.127mm (#28AWG) |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter, color | 8.1mm (standard), black |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 50MΩ·km or more |
| UL standard (cable area) | UL STYLE No 2464 80°C 300V |

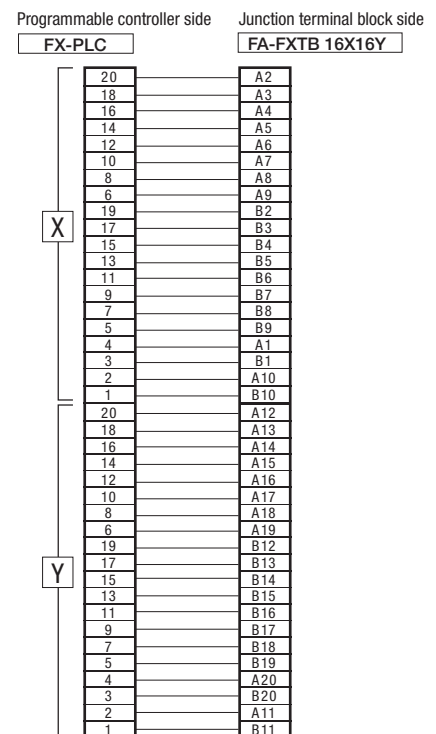
| Model | Cable length | Programmable controller side connector | Terminal block side connector |
|-----------------------|--------------|-----------------------------------------------------|----------------------------------------------------------------|
| FA2-CB1LT10MM2H16X16Y | 1m | MIL 20P connector | MIL 40P connector |
| FA2-CB1LT20MM2H16X16Y | 2m | FRC5-A020-3TOS-FA (manufactured by DDK Ltd.) × 2 | D7940-7500SC, D3448-7940 (manufactured by 3M Japan Limited) |
| FA2-CB1LT30MM2H16X16Y | 3m | | |

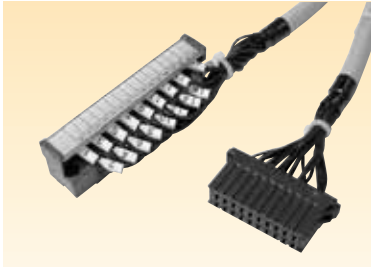


External dimensions



Connection diagram





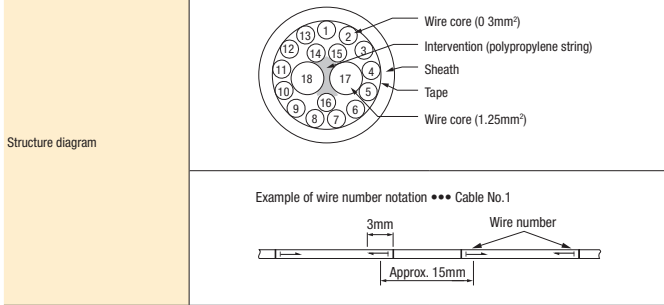
For MELSEC terminal block I/O (MELSEC-Q terminal block and 20P connector with 18-core cable)

FA-CBL**TD

- This cable is used to connect a MELSEC-Q series terminal block type I/O module and a junction terminal block.
- The cable has a MELSEC-Q series terminal block, which makes inserting/removing easy.
- Current of 2A can be provided for signals and 8A for commons.
- Cable outer diameter is 9.3mm, enabling easy wiring in panel.

Specifications

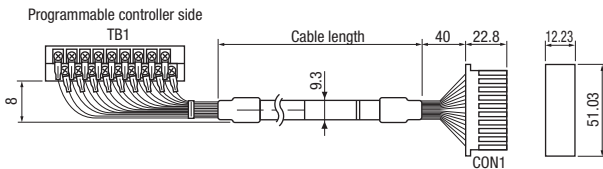
| Item | Specifications | |
|-------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------|
| Programmable controller side | MELSEC-Q series terminal block | |
| Junction terminal block side | 20P connector (DDK): DK-3100D-20R, DK-3RECLMP1-100, DK-3RECLLP1-100 | |
| Cable | 18-core cable (color: light gray) | |
| Nominal cross sectional area of conductor | 0.3mm ² (equivalent to #23AWG): 16 wires | 1.25mm ² (equivalent to #17AWG): 2 wires |
| Conductor configuration | 12 wires/0.18mm | 50 wires/0.18mm |
| Insulator outer diameter | 0.7mm | 1.5mm |
| Conductor resistance | 62.3Ω/km | 15.1Ω/km |
| Cable outer diameter | 9.3mm | |
| Insulation resistance (20°C) | 10MΩ·km or more | |
| Withstand voltage (20°C) | 1500VAC for 1 minute | |
| Operating temperature/humidity | -15 to 80°C, non-condensing | |
| Certified standards | UL Subject 758, AWM (Appliance Wiring Material) Style 2464 | |
| Flame retardancy | UL VW-1 | |



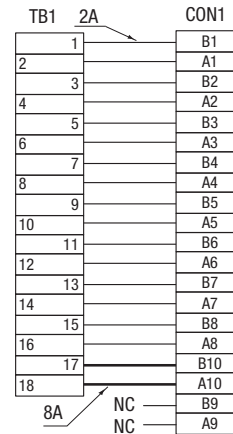
| Model | Cable length | Weight |
|------------|--------------|--------------|
| FA-CBL05TD | 0.5m | Approx. 170g |
| FA-CBL07TD | 0.7m | Approx. 200g |
| FA-CBL10TD | 1m | Approx. 250g |
| FA-CBL15TD | 1.5m | Approx. 330g |
| FA-CBL20TD | 2m | Approx. 400g |
| FA-CBL25TD | 2.5m | Approx. 480g |
| FA-CBL30TD | 3m | Approx. 560g |

External dimensions

(Unit: mm)



Connection diagram





For MELSEC terminal block I/O or non-Mitsubishi PLC (discrete cable and MIL 20P connector with 18-core cable)

FA-CBL**D

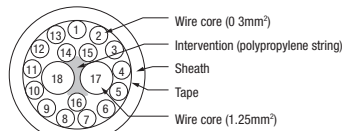
- This cable is used to connect a MELSEC terminal block type I/O module and a junction terminal block.
- A non-Mitsubishi PLC can be used by connecting discrete cables to a general-purpose junction terminal.
- Cable numbers are indicated, enabling easy wiring.
- Current of 2A can be provided for signals and 8A for commons.
- Cable outer diameter is 9.3mm, enabling easy wiring in panel.

Specifications

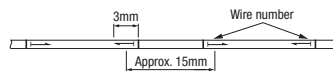
| Item | Specifications |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Programmable controller side | — |
| Junction terminal block side | 20P connector (DDK: DK-3100D-20R, DK-3RECMLP1-100, DK-3RECLLP1-100) |
| Cable | 18-core cable (color: light gray) |
| Nominal cross sectional area of conductor | 0.3mm ² (equivalent to #23AWG): 16 wires 1.25mm ² (equivalent to #17AWG): 2 wires |
| Conductor configuration | 12 wires/0.18mm 50 wires/0.18mm |
| Insulator outer diameter | 0.7mm 1.5mm |
| Conductor resistance | 62.3Ω/km 15.1Ω/km |
| Cable outer diameter | 9.3mm |
| Insulation resistance (20°C) | 10MΩ·km or more |
| Withstand voltage (20°C) | 1500VAC for 1 minute |
| Operating temperature/humidity | -15 to 80°C, non-condensing |
| Certified standards | UL Subject 758, AWM (Appliance Wiring Material) Style 2464 |
| Flame retardancy | UL VW-1 |

| Model | Cable length | Weight |
|-----------|--------------|--------------|
| FA-CBL20D | 2m | Approx. 350g |

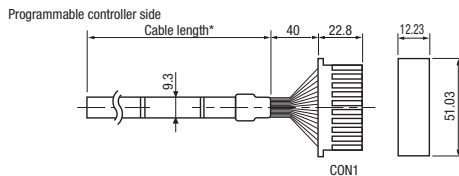
Structure diagram



Example of wire number notation ●●● Cable No.1



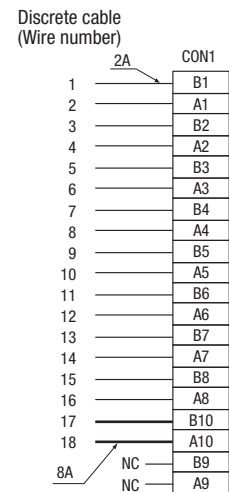
External dimensions



*: The cable is 10cm longer than the specified cable length by consideration of the wiring length to the terminal block.

(Unit: mm)

Connection diagram





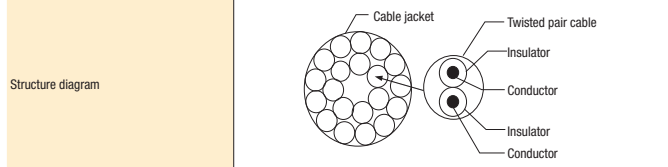
For positive common input/sink output of Mitsubishi Electric CC-Link remote I/O module or general-purpose type for OMRON's PLCs (FCN 40P connector and MIL 40P connector)

FA-CBL**FMH

- This cable is used to connect a Mitsubishi Electric FCN 40P connector type CC-Link remote I/O module and a MELSEC-dedicated 32-point junction terminal block. This cable cannot be used for a general-purpose 40-point junction terminal block.
- The cable is used to connect an OMRON's FCN 40P connector type 32-point I/O module and a general-purpose 40P junction terminal block.

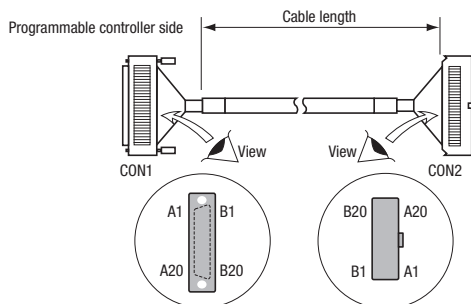
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



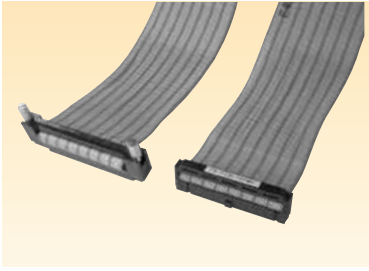
| Model | Cable length | Weight |
|-------------|--------------|--------------|
| FA-CBL05FMH | 0.5m | Approx. 100g |
| FA-CBL10FMH | 1m | Approx. 160g |
| FA-CBL20FMH | 2m | Approx. 280g |
| FA-CBL30FMH | 3m | Approx. 380g |
| FA-CBL50FMH | 5m | Approx. 610g |

External dimensions



Connection diagram

| CON1 | CON2 |
|------|------|
| B20 | B20 |
| A20 | A20 |
| B19 | B19 |
| A19 | A19 |
| B18 | B18 |
| A18 | A18 |
| B17 | B17 |
| A17 | A17 |
| B16 | B16 |
| A16 | A16 |
| B15 | B15 |
| A15 | A15 |
| B14 | B14 |
| A14 | A14 |
| B13 | B13 |
| A13 | A13 |
| B12 | B12 |
| A12 | A12 |
| B11 | B11 |
| A11 | A11 |
| B10 | B10 |
| A10 | A10 |
| B9 | B9 |
| A9 | A9 |
| B8 | B8 |
| A8 | A8 |
| B7 | B7 |
| A7 | A7 |
| B6 | B6 |
| A6 | A6 |
| B5 | B5 |
| A5 | A5 |
| B4 | B4 |
| A4 | A4 |
| B3 | B3 |
| A3 | A3 |
| B2 | B2 |
| A2 | A2 |
| B1 | B1 |
| A1 | A1 |



For positive common input/sink output of Mitsubishi Electric CC-Link remote I/O module or general-purpose type for OMRON's PLCs (with flat cable)
(FCN 40P connector and MIL 40P connector)

FA-FCBL**FMH

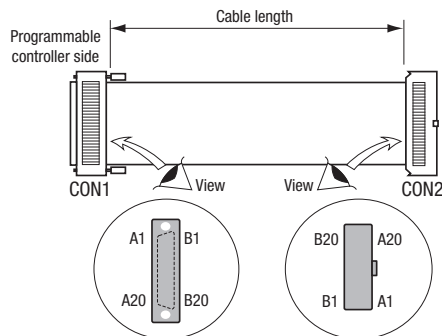
- This cable is used to connect a Mitsubishi Electric FCN 40P connector type CC-Link remote I/O module and a MELSEC-dedicated 32-point junction terminal block. This cable cannot be used for a general-purpose 40-point junction terminal block.
- The cable is used to connect an OMRON's FCN 40P connector type 32-point I/O module and a general-purpose 40P junction terminal block.

Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core flat cable (color: gray) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.98mm |
| Cable outer diameter | 50.8mm (cable full width) |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 10MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2651 105°C 300V |
| Structure diagram | |

| Model | Cable length | Weight |
|--------------|--------------|--------------|
| FA-FCBL05FMH | 0.5m | Approx. 90g |
| FA-FCBL10FMH | 1m | Approx. 130g |
| FA-FCBL20FMH | 2m | Approx. 210g |
| FA-FCBL30FMH | 3m | Approx. 300g |

External dimensions



Connection diagram

| CON1 | CON2 |
|------|------|
| B20 | B20 |
| A20 | A20 |
| B19 | B19 |
| A19 | A19 |
| B18 | B18 |
| A18 | A18 |
| B17 | B17 |
| A17 | A17 |
| B16 | B16 |
| A16 | A16 |
| B15 | B15 |
| A15 | A15 |
| B14 | B14 |
| A14 | A14 |
| B13 | B13 |
| A13 | A13 |
| B12 | B12 |
| A12 | A12 |
| B11 | B11 |
| A11 | A11 |
| B10 | B10 |
| A10 | A10 |
| B9 | B9 |
| A9 | A9 |
| B8 | B8 |
| A8 | A8 |
| B7 | B7 |
| A7 | A7 |
| B6 | B6 |
| A6 | A6 |
| B5 | B5 |
| A5 | A5 |
| B4 | B4 |
| A4 | A4 |
| B3 | B3 |
| A3 | A3 |
| B2 | B2 |
| A2 | A2 |
| B1 | B1 |
| A1 | A1 |



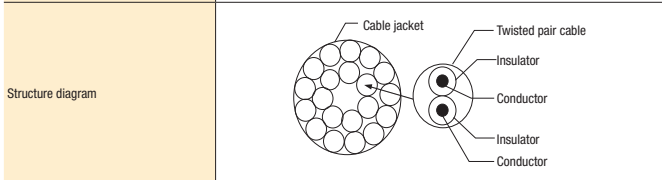
General-purpose type for Mitsubishi Electric programmable controllers (FCN 40P connector and MIL 40P connector)

FA-CBL**FMV-M

- This cable is used to connect a Mitsubishi Electric FCN 40P connector type I/O module and a general-purpose 40P junction terminal block.
- Pulling the cable vertically prevents poor contact, disconnection, or other faults caused by the tension at the upper end of the core wire of the cable from the FCN 40P connector.
- A MELSEC-dedicated 32-point junction terminal block cannot be connected.

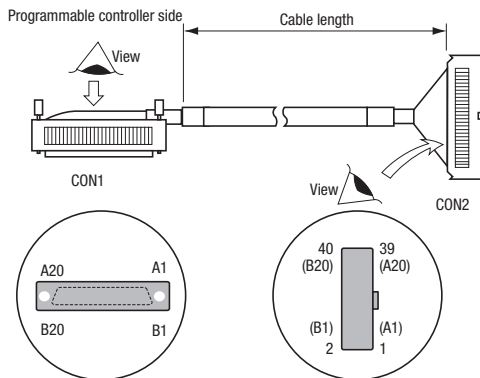
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|---------------|--------------|--------------|
| FA-CBL05FMV-M | 0.5m | Approx. 110g |
| FA-CBL10FMV-M | 1m | Approx. 160g |
| FA-CBL20FMV-M | 2m | Approx. 270g |
| FA-CBL30FMV-M | 3m | Approx. 380g |
| FA-CBL50FMV-M | 5m | Approx. 600g |

External dimensions



Connection diagram

| CON1 | CON2 |
|------|----------|
| B20 | 1 (A1) |
| A20 | 2 (B1) |
| B19 | 3 (A2) |
| A19 | 4 (B2) |
| B18 | 5 (A3) |
| A18 | 6 (B3) |
| B17 | 7 (A4) |
| A17 | 8 (B4) |
| B16 | 9 (A5) |
| A16 | 10 (B5) |
| B15 | 11 (A6) |
| A15 | 12 (B6) |
| B14 | 13 (A7) |
| A14 | 14 (B7) |
| B13 | 15 (A8) |
| A13 | 16 (B8) |
| B12 | 17 (A9) |
| A12 | 18 (B9) |
| B11 | 19 (A10) |
| A11 | 20 (B10) |
| B10 | 21 (A11) |
| A10 | 22 (B11) |
| B9 | 23 (A12) |
| A9 | 24 (B12) |
| B8 | 25 (A13) |
| A8 | 26 (B13) |
| B7 | 27 (A14) |
| A7 | 28 (B14) |
| B6 | 29 (A15) |
| A6 | 30 (B15) |
| B5 | 31 (A16) |
| A5 | 32 (B16) |
| B4 | 33 (A17) |
| A4 | 34 (B17) |
| B3 | 35 (A18) |
| A3 | 36 (B18) |
| B2 | 37 (A19) |
| A2 | 38 (B19) |
| B1 | 39 (A20) |
| A1 | 40 (B20) |



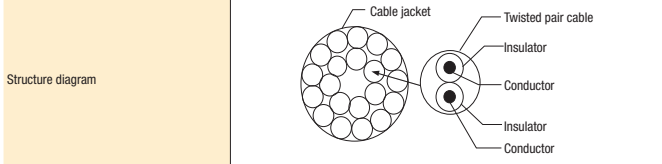
General-purpose type for Mitsubishi Electric CC-Link remote I/O module (FCN 40P connector and MIL 40P connector)

FA-CBL**FMH-M

- This cable is used to connect a Mitsubishi Electric FCN 40P connector type CC-Link remote I/O module and a general-purpose 40P junction terminal block.
- A MELSEC-dedicated 32-point junction terminal block cannot be connected.

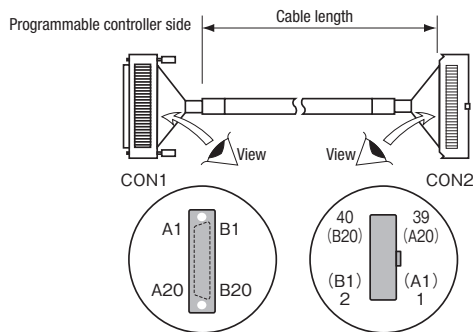
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|---------------|--------------|--------------|
| FA-CBL05FMH-M | 0.5m | Approx. 110g |

External dimensions



Connection diagram

| CON1 | CON2 |
|------|----------|
| B20 | 1 (A1) |
| A20 | 2 (B1) |
| B19 | 3 (A2) |
| A19 | 4 (B2) |
| B18 | 5 (A3) |
| A18 | 6 (B3) |
| B17 | 7 (A4) |
| A17 | 8 (B4) |
| B16 | 9 (A5) |
| A16 | 10 (B5) |
| B15 | 11 (A6) |
| A15 | 12 (B6) |
| B14 | 13 (A7) |
| A14 | 14 (B7) |
| B13 | 15 (A8) |
| A13 | 16 (B8) |
| B12 | 17 (A9) |
| A12 | 18 (B9) |
| B11 | 19 (A10) |
| A11 | 20 (B10) |
| B10 | 21 (A11) |
| A10 | 22 (B11) |
| B9 | 23 (A12) |
| A9 | 24 (B12) |
| B8 | 25 (A13) |
| A8 | 26 (B13) |
| B7 | 27 (A14) |
| A7 | 28 (B14) |
| B6 | 29 (A15) |
| A6 | 30 (B15) |
| B5 | 31 (A16) |
| A5 | 32 (B16) |
| B4 | 33 (A17) |
| A4 | 34 (B17) |
| B3 | 35 (A18) |
| A3 | 36 (B18) |
| B2 | 37 (A19) |
| A2 | 38 (B19) |
| B1 | 39 (A20) |
| A1 | 40 (B20) |



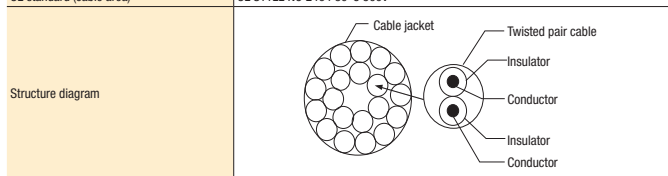
General-purpose type for OMRON's PLCs (MIL 40P connector and MIL 40P connector)

FA-CBL**MMH-R

- This cable is used to connect an OMRON's MIL 40P connector type I/O module and a general-purpose 40P junction terminal block.
- A MELSEC-dedicated 32-point junction terminal block cannot be connected.

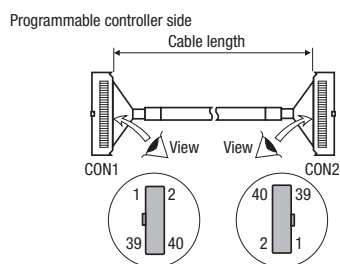
Specifications

| Item | Specifications |
|-------------------------------------------|-----------------------------------------------------------|
| Programmable controller side connector | XG4M-4030-T manufactured by OMRON |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |

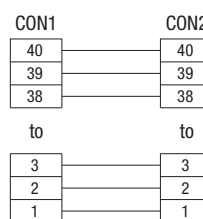


| Model | Cable length | Weight |
|---------------|--------------|--------------|
| FA-CBL05MMH-R | 0.5m | Approx. 80g |
| FA-CBL20MMH-R | 2m | Approx. 260g |

External dimensions



Connection diagram





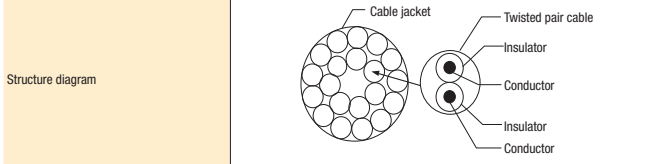
General-purpose type for PLCs of Yokogawa Electric Corporation or Fuji Electric FA Components & Systems Co., Ltd. (FCN 40P connector and MIL 40P connector)

FA-CBL**FMH-FY

- This cable is used to connect a general-purpose 40P junction terminal block and an FCN 40P connector type I/O module of Fuji Electric FA Components & Systems Co., Ltd. or Yokogawa Electric Corporation.
- A MELSEC-dedicated 32-point junction terminal block cannot be connected.

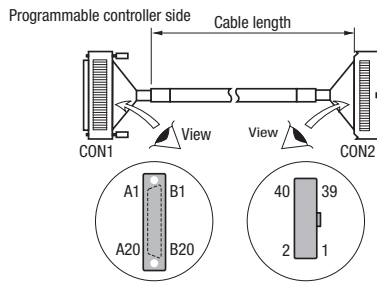
Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------------|
| Programmable controller side connector | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Module side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited |
| Cable | 40-core cable (color: black) |
| Nominal cross sectional area of conductor | 0.08mm ² (#28AWG) |
| Conductor configuration | 7 wires/0.127mm |
| Insulator outer diameter | 0.88mm |
| Cable outer diameter | 9.5mm |
| Rated current | 1A |
| Conductor resistance (20°C) | 0.232Ω/m or less |
| Withstand voltage | 500VAC for 1 minute |
| Insulation resistance | 5MΩ·km or more |
| UL standard (cable area) | UL STYLE NO 2464 80°C 300V |



| Model | Cable length | Weight |
|----------------|--------------|--------------|
| FA-CBL05FMH-FY | 0.5m | Approx. 120g |
| FA-CBL10FMH-FY | 1m | Approx. 160g |
| FA-CBL20FMH-FY | 2m | Approx. 270g |
| FA-CBL30FMH-FY | 3m | Approx. 390g |
| FA-CBL50FMH-FY | 5m | Approx. 610g |

External dimensions



Connection diagram

| CON1 | CON2 |
|------|------|
| B20 | 39 |
| A20 | 40 |
| B19 | 37 |
| A19 | 38 |
| B18 | 35 |
| A18 | 36 |
| B17 | 33 |
| A17 | 34 |
| B16 | 31 |
| A16 | 32 |
| B15 | 29 |
| A15 | 30 |
| B14 | 27 |
| A14 | 28 |
| B13 | 25 |
| A13 | 26 |
| B12 | 23 |
| A12 | 24 |
| B11 | 21 |
| A11 | 22 |
| B10 | 19 |
| A10 | 20 |
| B9 | 17 |
| A9 | 18 |
| B8 | 15 |
| A8 | 16 |
| B7 | 13 |
| A7 | 14 |
| B6 | 11 |
| A6 | 12 |
| B5 | 9 |
| A5 | 10 |
| B4 | 7 |
| A4 | 8 |
| B3 | 5 |
| A3 | 6 |
| B2 | 3 |
| A2 | 4 |
| B1 | 1 |
| A1 | 2 |

For analog modules

Screw terminal type



For isolated analog I/O modules (small type)

FA1-TBS40ADGN, FA1-TBS40ADDG, FA1-TBS40DAG

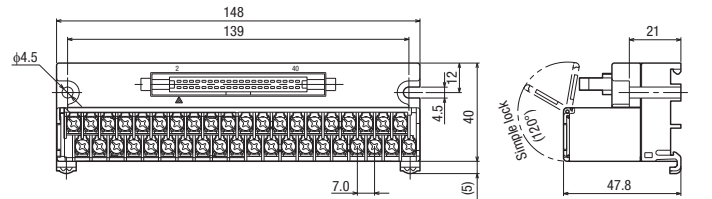
- Screw fall prevention and screw holding mechanisms are provided, enabling easy installation of round solderless terminals.
- Black screws are provided every five terminals, making terminal locations easily identified.
- The module can be installed using a DIN rail or screws.

Specifications

| Item | Specifications | | |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------|
| | FA1-TBS40ADGN | FA1-TBS40ADDG | FA1-TBS40DAG |
| Connectable module | R60AD8/16-G, Q68AD-G | R60AD6-DG, Q66AD-DG | R60DA8/16-G (Note 1), Q66DA-G |
| Terminal block | Terminal screw | M3 screws, number of terminals: 40P, 7mm pitch, with screw holding and fall-prevention mechanism | |
| | Applicable wire, tightening torque | 0.3 to 1.25mm ² (with solderless terminal used), 43 to 58N-cm (4.4 to 5.9kgf-cm) | |
| Module installation | Screw | M4 × 0.7mm × 25mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ϵ (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | Between channels: 1000VAC for 1 minute, 10M Ω or more, Other: 500VAC for 1 minute, 10M Ω or more | | |
| Weight | Approx. 190g | Approx. 190g | Approx. 190g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 2: When connecting the R60DA8/16-G, replace the marking strip with the one provided in the package before use.

External dimensions

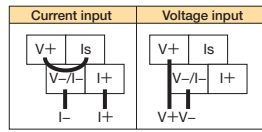


(Unit: mm)

External connection

☉ For wiring to the terminal block, refer to "Notes on wiring for current input".

For the external wiring method when using a dedicated cable (FA-CBL**Q68ADGN), connect the terminals as described below.
 Current input: Connect the V+ and Is terminals.
 Voltage input: Do not connect wiring to the Is and I+ terminals.



*: Is terminal: A dedicated terminal that connects with the V+ terminal when using current input.

<FA1-TBS40ADGN>

| | | | | | | | | | | | | | | | | | | | | |
|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | ADGN |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | ADGN |
| V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | ADGN |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | |
| V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | |

<FA1-TBS40ADDG>

| | | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | ADDG |
| CH1 | I | CH2 | I | CH3 | I | CH4 | I | CH5 | I | CH6 | I | CH7 | I | CH8 | I | CH8 | I | CH8 | I | ADDG |
| P | CHK | P | CHK | P | CHK | P | CHK | P | CHK | P | CHK | P | CHK | P | CHK | P | CHK | P | CHK | ADDG |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | |
| I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | I+ | |
| CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | CHK+ | |

<FA1-TBS40DAG (For the Q66DA-G connection)>

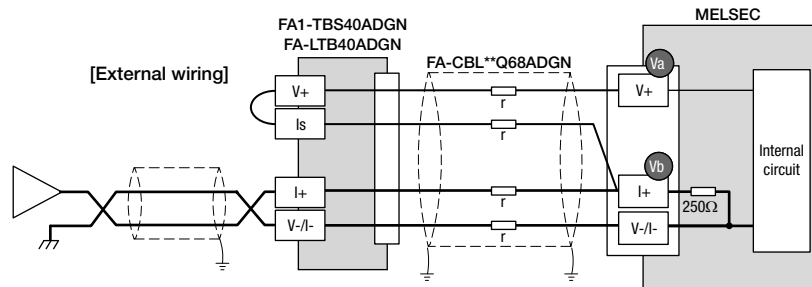
| | | | | | | | | | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-----|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | DAG |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | DAG |
| V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | DAG |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | |
| COM1 | | COM2 | | COM3 | | COM4 | | COM5 | | COM6 | | COM6 | | COM6 | | COM6 | | COM6 | | DAG |

<FA1-TBS40DAG (For the R60DA8-G, R60DA16-G connection)>

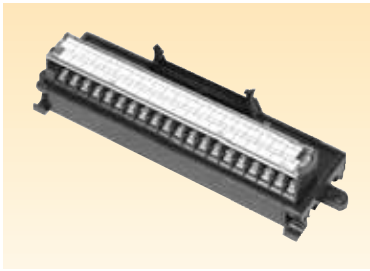
| | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | DAG |
| CH1 | CH2 | CH3 | CH4 | CH5 | CH6 | CH7 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | DAG |
| V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | V+/I+ | DAG |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | |
| CH1 | CH2 | CH3 | CH4 | CH5 | CH6 | CH7 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | CH8 | DAG |
| V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | V-/I- | DAG |

☉ Ground the shielded cable in the same manner as the programmable controller module.
 When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.

Notes on wiring for current input



Using the Is terminal can reduce the error difference between Va and Vb caused by wiring resistance (r).



For isolated analog I/O modules

FA-LTB40ADGN, FA-LTB40ADDG, FA-LTB40DAG

- Wiring is easy as signals are converted into terminal block outputs.

Related products M3 short-circuit bar P.286

Specifications

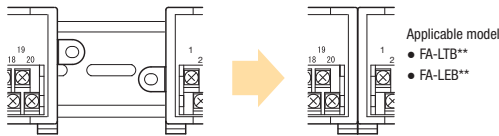
| Item | Specifications | | |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------|
| | FA-LTB40ADGN | FA-LTB40ADDG | FA-LTB40DAG |
| Connectable module | R60DA8/16-G, Q68AD-G | Q66AD-DG | R60DA8/16-G (Note 1), Q66DA-G |
| Terminal block | Terminal screw | M3 screws, 7.62mm pitch | |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N·cm (5.2 to 7.6kgf·cm) | |
| Module installation | Screw | M4 x 0.7mm x 8mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ϵ (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | Between channels: 1000VAC for 1 minute, 10M Ω or more, Other: 500VAC for 1 minute, 10M Ω or more | | |
| Weight | Approx. 240g | Approx. 240g | Approx. 240g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

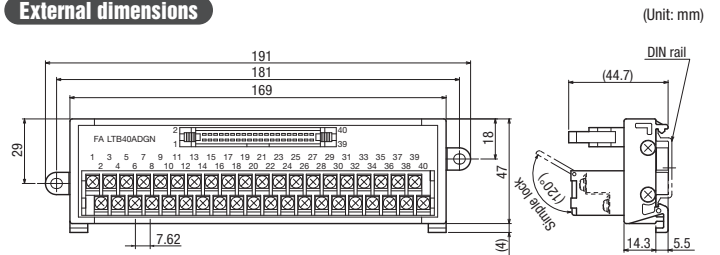
Note 2: When connecting the R60DA8/16-G, replace the marking strip with the one provided in the package before use.

Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



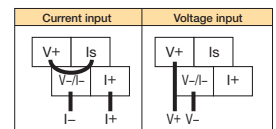
External dimensions



External connection

- ◎ For wiring to the terminal block, refer to "Notes on wiring for current input".

For the external wiring method when using a dedicated cable (FA-CBL**Q68ADGN), connect the terminals as described below. Current input: Connect the V+ and Is terminals. (Short-circuit bar (FA-BAR20P) is available.) Voltage input: Do not connect wiring to the Is and I+ terminals.



*: Is terminal: A dedicated terminal that connects with the V+ terminal when using current input.

<FA-LTB40ADGN>

| | | | | | | | | | | | | | | | | | | | |
|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH9 | CH9 | CH0 | CH0 |
| V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is | V+ | Is |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH9 | CH9 | CH0 | CH0 |
| V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ |

<FA-LTB40ADDG>

| | | | | | | | | | | | | | | | | | | | |
|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH9 | CH9 | CH0 | CH0 |
| P | I/CHK | P | I/CHK | P | I/CHK | P | I/CHK | P | I/CHK | P | I/CHK | P | I/CHK | P | I/CHK | P | I/CHK | P | I/CHK |
| I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ | I+ | I/CHK+ |

<FA-LTB40DAG (For the Q66DA-G connection)>

| | | | | | | | | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH9 | CH9 | CH0 | CH0 |
| V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ |
| COM1 | | COM2 | | COM3 | | COM4 | | COM5 | | COM6 | | COM7 | | COM8 | | COM9 | | COM0 | |

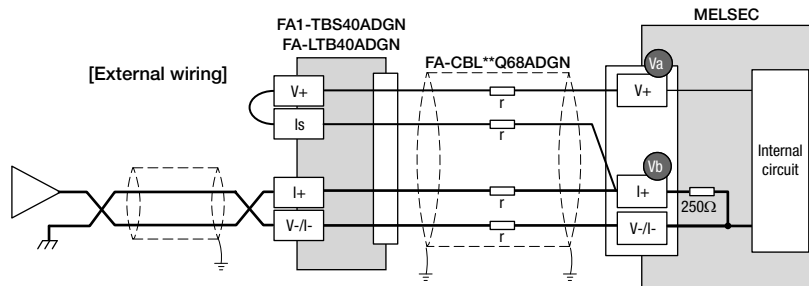
<FA-LTB40DAG (For the R60DA8-G, R60DA16-G connection)>

| | | | | | | | | | | | | | | | | | | | |
|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH9 | CH9 | CH0 | CH0 |
| V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ | V+ | I+ |
| V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ | V-/I- | I+ |

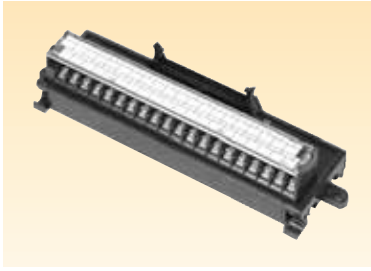
- ◎ Ground the shielded cable in the same manner as the programmable controller module.

When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.

Notes on wiring for current input



Using the Is terminal can reduce the error difference between Va and Vb caused by wiring resistance (r).



For isolated thermocouple input modules

FA-LTB40TDG

- The accuracy specification of a programmable controller is satisfied when this junction terminal block is connected.
- Mounting this product away from a heating element in the control panel prevents heat from affecting measurement.

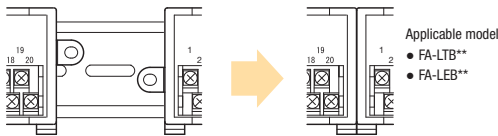
Specifications

| Item | Specifications |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable module | R60TD8-G, Q68TD-G-H01, Q68TD-G-H02 |
| Cold junction compensation resistance | Not included (Use the resistance provided with a programmable controller.) |
| Terminal block | Terminal screw: M3 screws, 7.62mm pitch Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 50 to 75N-cm (5.2 to 7.6kgf-cm) |
| Module installation | Screw: M4 × 0.7mm × 8mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) DIN rail: Applicable DIN rail: TH35-7.5Fe, TH35-7.5Aℓ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | Between channels: 1000VAC for 1 minute, 10MΩ or more, Other: 500VAC for 1 minute, 10MΩ or more |
| Weight | Approx. 240g |

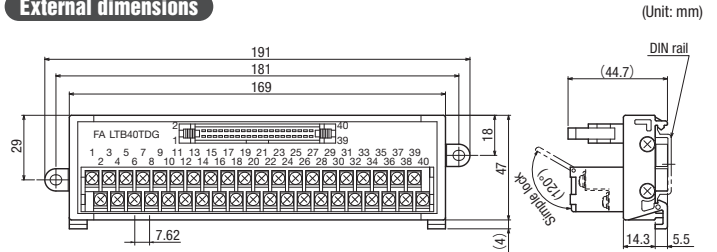
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



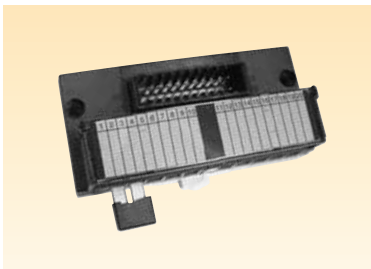
External dimensions



External connection

- Install devices in a location where the ambient temperature is constant.
- Connect a thermocouple or compensation lead wire directly to the terminal block.
- Ground the shielded cable in the same manner as the programmable controller module.
When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.
- For the cold junction compensation resistor (RTD), connect the programmable controller accessory between the terminal numbers 38 and 40 as illustrated below. Between the terminal number 39 (RTD G) and terminal number 40 (RTD -) is connected inside the junction terminal block, and therefore do not require external wiring.

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|-------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 |
| CH1 | CH2 | CH3 | CH4 | CH5 | CH6 | CH7 | CH8 | CH9 | CH10 | CH11 | CH12 | CH13 | CH14 | CH15 | CH16 | CH17 | CH18 | CH19 | RTD G |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| CH1 | CH2 | CH3 | CH4 | CH5 | CH6 | CH7 | CH8 | CH9 | CH10 | CH11 | CH12 | CH13 | CH14 | CH15 | CH16 | CH17 | CH18 | CH19 | RTD + |
| | | | | | | | | | | | | | | | | | | | RTD - |



For thermocouple input modules

FA-TB20TD

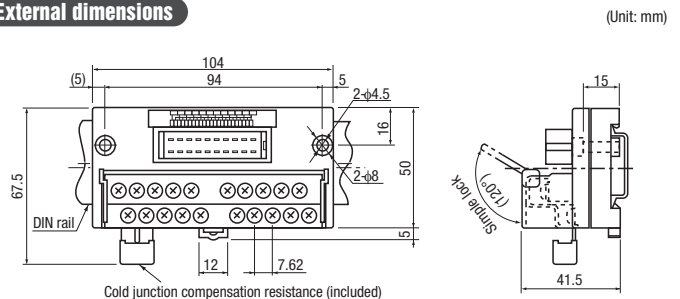
- The accuracy specification of a programmable controller is satisfied when this junction terminal block is connected.
- Mounting this product away from a heating element in the control panel prevents heat from affecting measurement.

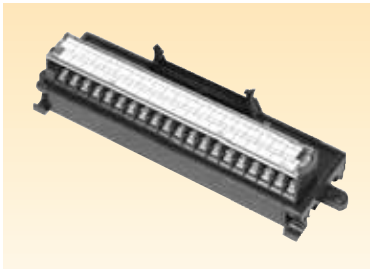
Specifications

| Item | Specifications |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable module | Q64TD, Q64TDV-GH |
| Cold junction compensation resistance | Included with the module |
| Terminal block | Terminal screw: M3 spring-up screws, 7.62mm pitch Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw: M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) DIN rail: Applicable DIN rail: TH35-7.5Fe, TH35-7.5Aℓ (IEC 60715 compliant) |
| Weight | Approx. 160g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions





For RTD input modules

FA-LTB40RD3G

- The accuracy specification of a programmable controller is satisfied when this junction terminal block is connected.

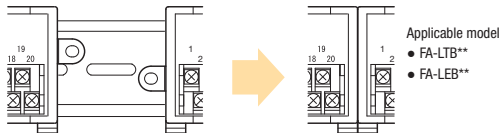
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable module | R60RD8-G, Q68RD3-G | |
| Terminal block | Terminal screw | M3 screws, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N-cm (5.2 to 7.6kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 8mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ϵ (IEC 60715 compliant) |
| Withstand voltage, insulation resistance | Between channels: 1000VAC for 1 minute, 10M Ω or more, Other: 500VAC for 1 minute, 10M Ω or more | |
| Weight | Approx. 240g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

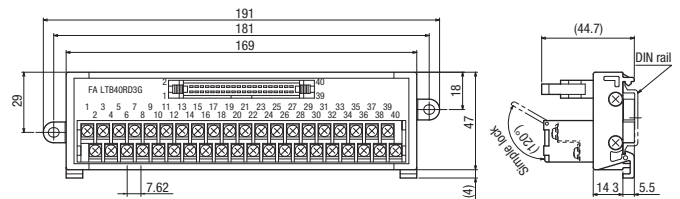
Notes for module installation

When the modules cable the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



External dimensions

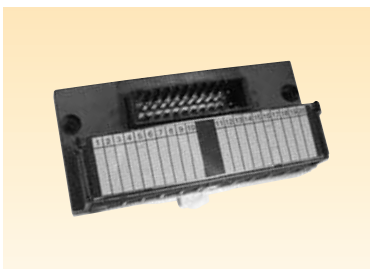
(Unit: mm)



External connection

- ⊙ Ground the shielded cable in the same manner as the programmable controller module. When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.
- ⊙ For wiring to the terminal block, refer to the manual of the RTD input module to be connected, published by Mitsubishi Electric.

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH9 | CH9 | CH10 | CH10 |
| A1 | b1 | B2 | b2 | A3 | b3 | B4 | b4 | A5 | b5 | B6 | b6 | A7 | b7 | B8 | b8 | A9 | b9 | B10 | b10 |
| CH1 | CH1 | CH2 | CH2 | CH3 | CH3 | CH4 | CH4 | CH5 | CH5 | CH6 | CH6 | CH7 | CH7 | CH8 | CH8 | CH9 | CH9 | CH10 | CH10 |
| B1 | A2 | B2 | b2 | B3 | b3 | A4 | b4 | B5 | b5 | A6 | b6 | B7 | b7 | A8 | b8 | B9 | b9 | A10 | b10 |



For temperature control modules

FA-TB20TC

- The accuracy specification of a programmable controller is satisfied when this junction terminal block is connected.
- Mounting this product away from a heating element in the control panel prevents heat from affecting measurement.

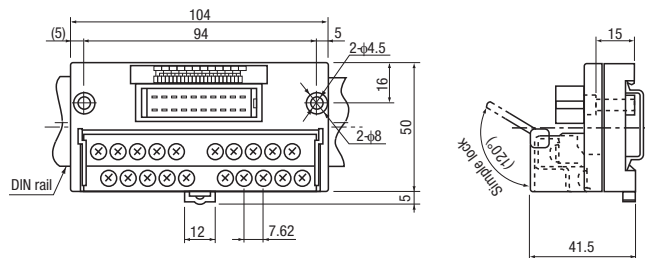
Specifications

| Item | Specifications | |
|---------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable module | R60TCTRT2T2, R60TCTRT2T2BW, Q64CTCT, Q64CTCTBW, Q64CTCTN, Q64CTCTBWN | |
| Cold junction compensation resistance | Built-in type | |
| Terminal block | Terminal screw | M3 spring-up screws, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ϵ (IEC 60715 compliant) |
| Weight | Approx. 160g | |

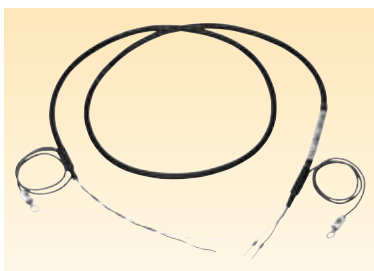
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)



Connection cables



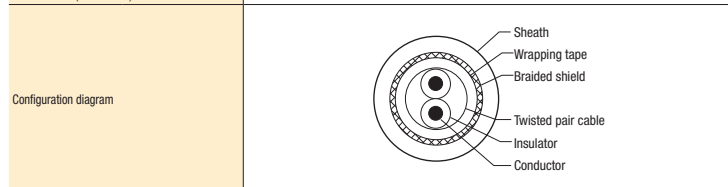
Analog shielded cable with ferrules

FA1-CB2L**S1B2-4

- This is an analog signal cable with ferrules (for 1 channel).
- Current/voltage settings are selectable for each channel.
- A noise-resistant shielded cable can be connected to each channel.
- Terminal processing of cables is not required because ferrules are attached.

Specifications

| Item | Specifications |
|-------------------------------------------|-------------------------------------------------------|
| Solderless terminal | Ferrule (Al 0.34-10 TQ) |
| SLD cable | M4 round solderless terminal |
| Cable type | One pair (2-core) shielded twisted pair cable (black) |
| Nominal cross sectional area of conductor | 0.3mm ² (#22AWG) |
| Conductor configuration | 60 wires/0.08mm |
| Insulator outer diameter | 0.75mm |
| Cable outer diameter | 4.9mm |
| Conductor resistance (20°C) | 0.072Ω/m or less |
| Withstand voltage | 2000VAC for 1 minute |
| Insulation resistance | 100MΩ·km or more |
| UL standard (cable area) | UL STYLE No.2464 80°C 300V |

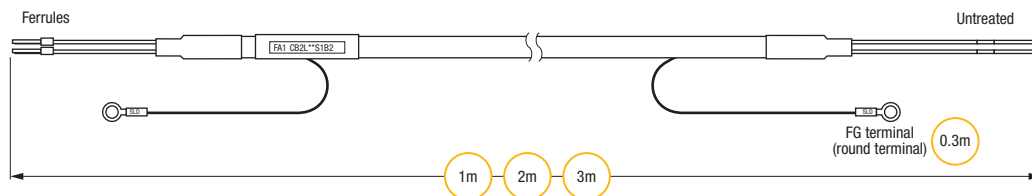


| Model ^{*1} | Cable length | Weight ^{*2} |
|---------------------|--------------|----------------------|
| FA1-CB2L10S1B2-4 | 1m | Approx. 100g |
| FA1-CB2L20S1B2-4 | 2m | Approx. 200g |
| FA1-CB2L30S1B2-4 | 3m | Approx. 300g |

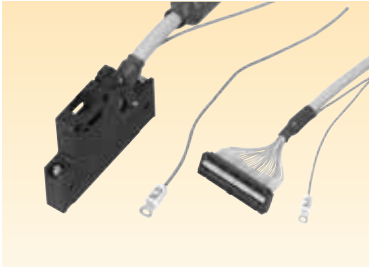
*1: Model for four FA1-CBL**S1B2 cables
 *2: Weight per cable

External dimensions

(Unit: mm)



Connection cables



Connection cable for isolated analog I/O module

FA-CBLQ68ADGN, FA-CBL**Q66ADDG,
FA-CBL**Q66DAG, FA1-CBL**R60DA8G**

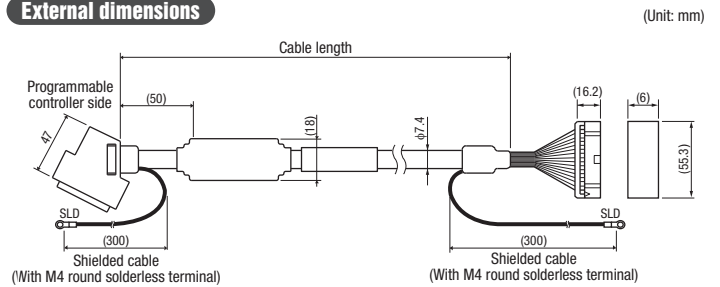
■ This cable is a shielded twisted pair cable, and is provided with a solderless terminal for shield grounding.

Specifications

| Item | Specifications | | | |
|---------------------|----------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------|
| | FA-CBL**Q68ADGN | FA-CBL**Q66ADDG | FA-CBL**Q66DAG | FA1-CBL**R60DA8G |
| Connectable module | Between the Q68AD-G or R60AD8/16-G and junction terminal block | Between the Q66AD-DG and junction terminal block | Between the Q66DA-G and junction terminal block | Between the R60DA8-G or R60DA16-G and junction terminal block |
| Solderless terminal | M4 round solderless terminal | | | |

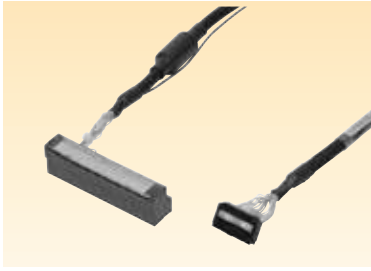
| Model | FA-CBL**Q68ADGN | FA-CBL**Q66ADDG | FA-CBL**Q66DAG | FA1-CBL**R60DA8G |
|-------|-----------------|-----------------|----------------|------------------|
| ** | Cable length | Weight | Weight | Weight |
| 05 | 0.5m | Approx. 150g | Approx. 150g | Approx. 150g |
| 10 | 1m | Approx. 200g | Approx. 200g | Approx. 200g |
| 20 | 2m | Approx. 300g | Approx. 300g | Approx. 300g |
| 30 | 3m | Approx. 400g | Approx. 400g | Approx. 400g |

External dimensions



Precautions

- FA-LTB40ADGN, FA-CBL**Q68ADGN
Replacing a conventional the FA-LTB40ADG or FA-CBL**Q68ADG (production discontinued) product without an N at the end of the model name
 - The replacing products cannot be used with the conventional products together. (For example, the FA-LTB40ADGN cannot be used with the FA-CBL**Q68ADG.)
 - The external wiring methods differ between the conventional products and the replacing products. At the time of replacement, verify the wiring of the FA-LTB40ADGN.
- FA-LTB40DAG, FA-CBL**Q66DAG
When a junction terminal block or cable is used, voltage drops due to wiring resistance may affect the Q66DA-G conversion characteristics. Be sure to take voltage drops caused by wiring resistance into adequate consideration.
 - Affected model Q66DA-G, Conditions: voltage output is selected and load resistance is 50kΩ or less
 - Wiring resistance reference value Cable resistance value: 226Ω/km (20°C)
Resistance value of junction terminal block and cable (3m): 0.867Ω or less



Connection cables with junction terminal block for analog module

FA-CBL**Q68ADT, FA-CBL**Q64ADT, FA-CBL**Q68DAT, FA-CBL**Q64DAT

■ The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

Related products M3 short-circuit bar P.286 Junction terminal block P.145

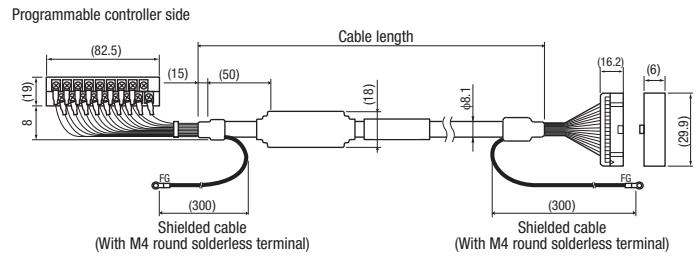
Specifications

| Item | Specifications | | | |
|--------------------------------------------|----------------------------------|----------------|------------------------------------|-------------------------------------------|
| | FA-CBL**Q68ADT | FA-CBL**Q64ADT | FA-CBL**Q68DAT | FA-CBL**Q64DAT |
| Connectable programmable controller module | R60ADV8, R60ADI8, Q68ADV, Q68ADI | R60AD4, Q64ADH | R60DAV8, R60DAI8, Q68DAVN, Q68DAIN | R60DA4, Q64DAN, Q64DAH, Q62AD-DGH, Q62DAN |
| Connectable junction terminal block | FA-LTB20P | | | |
| Conductor resistance (20°C) | 232Ω/km | | | |
| Solderless terminal | M4 round solderless terminal | | | |

| Model | FA-CBL**Q68ADT | FA-CBL**Q64ADT | FA-CBL**Q68DAT | FA-CBL**Q64DAT |
|-----------------|----------------|----------------|----------------|----------------|
| ** Cable length | Weight | Weight | Weight | Weight |
| 05 | 0.5m | Approx. 200g | — | Approx. 200g |
| 20 | 2m | Approx. 350g | Approx. 350g | Approx. 350g |
| 30 | 3m | Approx. 450g | Approx. 450g | Approx. 450g |

External dimensions

(Unit: mm)



External connection

◎ For wiring to the terminal block, refer to the manual of the analog module to be connected, published by Mitsubishi Electric.

<For the R60ADV8, R60ADI8, Q68ADV, Q68ADI connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|----|----|----|----|
| Signal name | CH1 V+/+ | CH1 V-/ | CH2 V+/+ | CH2 V-/ | CH3 V+/+ | CH3 V-/ | CH4 V+/+ | CH4 V-/ | CH5 V+/+ | CH5 V-/ | CH6 V+/+ | CH6 V-/ | CH7 V+/+ | CH7 V-/ | CH8 V+/+ | CH8 V-/ | NC | NC | NC | NC |

<For the Q64AD, Q64ADH connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------|----|----|----|----|
| Signal name | CH1 V+ | CH1 V- | CH1 I+ | CH1 SLD | CH2 V+ | CH2 V- | CH2 I+ | CH2 SLD | CH3 V+ | CH3 V- | CH3 I+ | CH3 SLD | CH4 V+ | CH4 V- | CH4 I+ | CH4 SLD | NC | NC | NC | NC |

<For the R60AD4 connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|----|----|----|----|
| Signal name | CH1 V+ | CH1 V-/ | CH1 I+ | CH1 SLD | CH2 V+ | CH2 V-/ | CH2 I+ | CH2 SLD | CH3 V+ | CH3 V-/ | CH3 I+ | CH3 SLD | CH4 V+ | CH4 V-/ | CH4 I+ | CH4 SLD | NC | NC | NC | NC |

<For the R60DAV8, R60DAI8, Q68DAVN, Q68DAIN connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-----|-----|----|----|
| Signal name | CH1 V+/+ | CH1 COM | CH2 V+/+ | CH2 COM | CH3 V+/+ | CH3 COM | CH4 V+/+ | CH4 COM | CH5 V+/+ | CH5 COM | CH6 V+/+ | CH6 COM | CH7 V+/+ | CH7 COM | CH8 V+/+ | CH8 COM | 24V | 24G | NC | NC |

<For the R60DA4, Q64DAN, Q64DAH connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-----------|------------|-----------|----|-----------|------------|-----------|----|-----------|------------|-----------|----|-----------|------------|-----------|-----|-----|----|----|----|
| Signal name | CH1 V+ | CH1 COM | CH1 I+ | NC | CH2 V+ | CH2 COM | CH2 I+ | NC | CH3 V+ | CH3 COM | CH3 I+ | NC | CH4 V+ | CH4 COM | CH4 I+ | 24V | 24G | NC | NC | NC |

<For the Q62DAN connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-----------|------------|-----------|----|-----------|------------|-----------|----|----|----|----|----|----|----|----|-----|-----|----|----|----|
| Signal name | CH1 V+ | CH1 COM | CH1 I+ | NC | CH2 V+ | CH2 COM | CH2 I+ | NC | NC | NC | NC | NC | NC | NC | NC | 24V | 24G | NC | NC | NC |

<For the Q62AD-DGH connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|----------|---------------|-------------|----|----|----|----|----|----------|---------------|-------------|----|----|----|----|-----|-----|----|----|----|
| Signal name | CH1 P | CH1 I/CHK+ | CH1 CHK- | NC | NC | NC | NC | NC | CH2 P | CH2 I/CHK+ | CH2 CHK- | NC | NC | NC | NC | 24V | 24G | NC | NC | NC |

◎ Ground the FG wire in the same manner as the programmable controller module.

When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.

Precautions

When a junction terminal block or cable is used, voltage drops due to wiring resistance may affect the programmable controller module's conversion characteristics.

Be sure to take voltage drops caused by wiring resistance into adequate consideration.

◎ Affected model

- R60AD4, Q64AD, and Q64ADH when current input is selected
- R60DAV8 and Q68DAVN when voltage output is selected and load resistance is 50kΩ or less
- R60DA4, Q64DAN, and Q64DAH when voltage output is selected and load resistance is 50kΩ or less
- Q62DAN when voltage output is selected and load resistance is 50kΩ or less

◎ Wiring resistance reference value

- Cable resistance value: 232Ω/km (20°C)
- Resistance value of junction terminal block and cable (3m): 0.867Ω or less



Connection cables for analog module

FA-CBL**Q68ADA, FA-CBL**Q68DAA

- The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

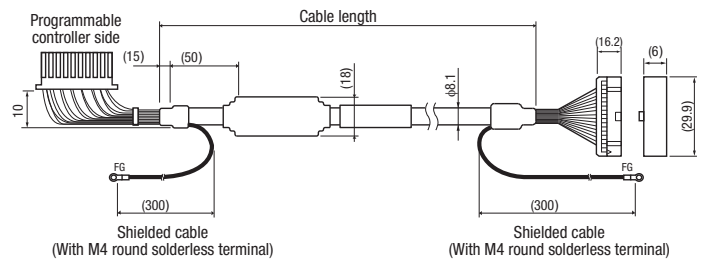
Related products Junction terminal block P.145 M3 short-circuit bar P.286 Conversion adapter P.317

Specifications

| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------|------------------------------------|
| | FA-CBL**Q68ADA | FA-CBL**Q68DAA |
| Connectable programmable controller module | R60ADV8, R60ADI8, Q68ADV, Q68ADI | R60DAV8, R60DAI8, Q68DAV8, Q68DAI8 |
| Connector conversion adapter | FA-Q6TCA (mounted to programmable controller module) | |
| Connectable junction terminal block | FA-LTB20P | |
| Conductor resistance (20°C) | 232Ω/km | |
| Solderless terminal | M4 round solderless terminal | |

| Model | FA-CBL**Q68ADA | | FA-CBL**Q68DAA | |
|-------|----------------|--------------|----------------|--------------|
| | Cable length | Weight | Cable length | Weight |
| ** | | | | |
| 05 | 0.5m | - | 2m | Approx. 160g |
| 20 | 2m | Approx. 310g | 2m | Approx. 310g |

External dimensions



External connection

- For wiring to the terminal block, refer to the manual of the analog module to be connected, published by Mitsubishi Electric.

<For the Q68ADV, Q68ADI, R60ADV8, R60ADI8 connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----|----|----|----|
| Signal name | CH1 V+/+ | CH1 V-/+ | CH2 V+/+ | CH2 V-/+ | CH3 V+/+ | CH3 V-/+ | CH4 V+/+ | CH4 V-/+ | CH5 V+/+ | CH5 V-/+ | CH6 V+/+ | CH6 V-/+ | CH7 V+/+ | CH7 V-/+ | CH8 V+/+ | CH8 V-/+ | NC | NC | NC | NC |

<For the Q68DAV8, Q68DAI8, R60DAV8, R60DAI8 connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-----|-----|----|----|
| Signal name | CH1 V+/+ | CH1 COM | CH2 V+/+ | CH2 COM | CH3 V+/+ | CH3 COM | CH4 V+/+ | CH4 COM | CH5 V+/+ | CH5 COM | CH6 V+/+ | CH6 COM | CH7 V+/+ | CH7 COM | CH8 V+/+ | CH8 COM | 24V | 24G | NC | NC |

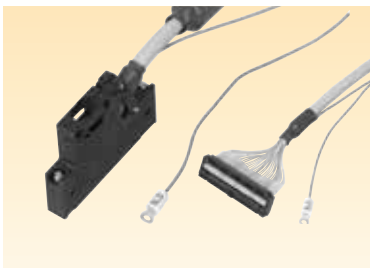
- Ground the FG wire in the same manner as the programmable controller module.
When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.

Precautions

When a junction terminal block or cable is used, voltage drops due to wiring resistance may affect the programmable controller module's conversion characteristics.

Be sure to take voltage drops caused by wiring resistance into adequate consideration.

- Affected model
R60DAV8 and Q68DAV8 when voltage output is selected and load resistance is 50kΩ or less
- Wiring resistance reference value
Cable resistance value: 232Ω/km (20°C)
Resistance value of junction terminal block and cable (2m): 0.635Ω or less



For isolated thermocouple input modules

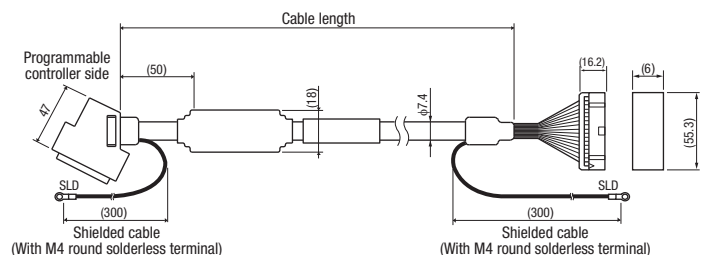
FA-CBL**Q68TDG

- This cable can be used as a compensation lead wire between a junction terminal block and a programmable controller module.
- The cable is a shielded instrumentation cable, and is provided with a solderless terminal for shield grounding.

Specifications

| Item | Specifications | | | |
|---------------------|-----------------------------------------------------|---------------|---------------|---------------|
| | FA-CBL068TDG | FA-CBL1068TDG | FA-CBL2068TDG | FA-CBL3068TDG |
| Connectable module | Between Q68TD-G-H01/H02 or R60TD8-G and FA-LTB40TDG | | | |
| Cable length | 0.5m | 1m | 2m | 3m |
| Solderless terminal | M4 round solderless terminal | | | |
| Weight | Approx. 150g | Approx. 200g | Approx. 300g | Approx. 400g |

External dimensions





Connection cables with terminal block for thermocouple input module (for MELSEC-Q series)

FA-CBLQ64TD**

■ This cable can be used as a compensation lead wire between a junction terminal block and a programmable controller module.

Specifications

| Item | Specifications | | |
|--------------------|------------------------------------------|---------------|---------------|
| | FA-CBLQ64TD15 | FA-CBLQ64TD20 | FA-CBLQ64TD30 |
| Connectable module | Between Q64TD or Q64TDV-GH and FA-TB20TD | | |
| Cable length | 1.5m | 2m | 3m |
| Weight | Approx. 410g | Approx. 490g | Approx. 650g |

How to ground

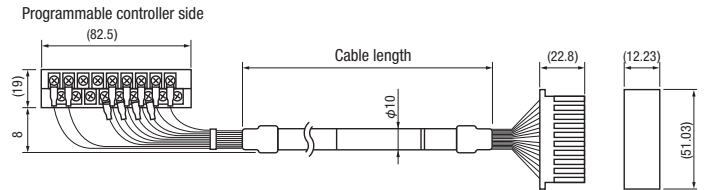
⊙ Grounding with the FA-TB20TD is not possible as a grounding wire is not provided with the cable.

Ground the cable on the terminal block of a programmable controller module.

Use the terminal No.18 of the Q64TD or Q64TDV-GH.

External dimensions

(Unit: mm)



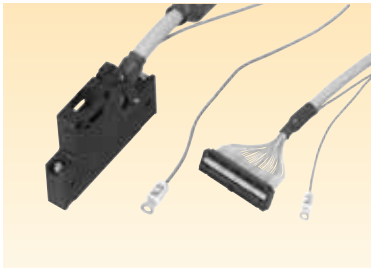
External connection

- ⊙ Install devices in a location where the ambient temperature is constant.
- ⊙ Connect a thermocouple or compensation lead wire directly to the terminal block.
- ⊙ For the cold junction compensation resistor (RTD), connect the FA-TB20TD accessory as illustrated below.

<For the Q64TD, Q64TDV-GH connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|----|-------|----|-------|----|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|----|----|----|
| Signal name | NC | RTD + | NC | RTD - | NC | SLD | SLD | CH1 + | CH2 + | CH1 - | CH2 - | CH3 + | CH4 + | CH3 - | CH4 - | SLD | SLD | NC | NC | NC |

- ⊙ For wiring to the terminal block, refer to the manual of the thermocouple input module to be connected, published by Mitsubishi Electric.



Connection cable for RTD input module

FA-CBL**Q68RD3G

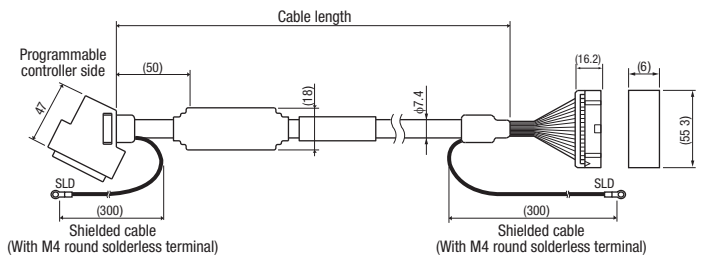
■ This cable is a shielded twisted pair cable, and is provided with a solderless terminal for shield grounding.

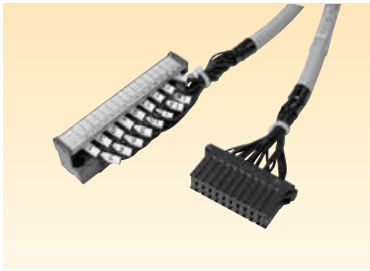
Specifications

| Item | Specifications | | | |
|---------------------|-----------------------------------------------|-----------------|-----------------|-----------------|
| | FA-CBL05068RD3G | FA-CBL10068RD3G | FA-CBL20068RD3G | FA-CBL30068RD3G |
| Connectable module | Between Q68RD3-G or R60RD8-G and FA-LTB40RD3G | | | |
| Cable length | 0.5m | 1m | 2m | 3m |
| Solderless terminal | M4 round solderless terminal | | | |
| Weight | Approx. 150g | Approx. 200g | Approx. 300g | Approx. 400g |

External dimensions

(Unit: mm)





Connection cable with terminal block for temperature control module

FA-CBLQ64TC**

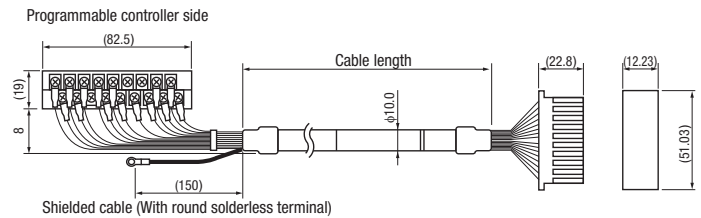
- This cable can be used as a compensation lead wire between a junction terminal block and a programmable controller module.
- The cable is a shielded instrumentation cable, and is provided with a solderless terminal for shield grounding

Specifications

| Item | Specifications | | |
|--------------------|-----------------------------------------------------------------------------------------------------------|---------------|---------------|
| | FA-CBLQ64TC05 | FA-CBLQ64TC10 | FA-CBLQ64TC20 |
| Connectable module | Between either of R60TCTRT2TT2, R60TCTRT2TT2BW, Q64TCTT, Q64TCTTBW, Q64TCTTN, or Q64TCTTBWN and FA-TB20TC | | |
| Cable length | 0.5m | 1m | 2m |
| Weight | Approx. 210g | Approx. 300g | Approx. 480g |

External dimensions

(Unit: mm)



External connection

- Install devices in a location where the ambient temperature is constant.
- Connect a thermocouple or compensation lead wire directly to the terminal block.
- Cold junction compensation resistance is built in the FA-TB20TC. Remove the cold junction compensation resistance in the temperature control module.
- Ground the shielded cable in the same manner as the programmable controller module.
When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.
- For wiring to the terminal block, refer to the manual of the temperature control module to be connected, published by Mitsubishi Electric.
- To use the Q64TCTT and Q64TCTTBW, ensure that its production information is "040815#####-C" or later, and its product information is "040310#####-C" or later.

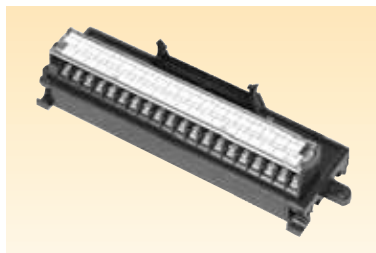
<For the R60TCTRT2TT2, R60TCTRT2TT2BW, Q64TCTT, Q64TCTTBW, Q64TCTTN, Q64TCTTBWN connection>

| Terminal No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------|----|----|----|----|-----|----|-----|-----|-----|-----|----|----|----|----|-----|-----|-----|-----|----|----|
| Signal name | L1 | L2 | L3 | L4 | COM | NC | CH1 | CH2 | CH1 | CH2 | NC | NC | NC | NC | CH3 | CH4 | CH3 | CH4 | NC | NC |

- *: Q64TCTTBW and Q64TCTTBWN can be used for terminals on thermocouple input side only.
They cannot be used for terminals on current sensor side.

For high-speed counter modules

Screw terminal type



For multichannel high-speed counter module (MELSEC-Q series)

FA-LTB40D63P6V5, FA-LTB40D63P6V12, FA-LTB40D63P6V24

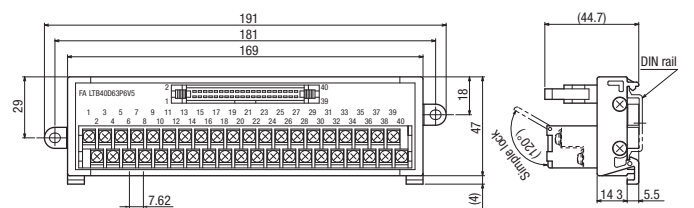
- This module is used to receive counter input signals on the terminal block, making wiring easy.
- For 12/24V input, a resistance is built in the module. An external resistance is not required.
- The marking strip can reduce wiring mistakes.

Specifications

| Item | Specifications | | | |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------|----------------|
| | FA-LTB40D63P6V5 | FA-LTB40D63P6V12 | FA-LTB40D63P6V24 | |
| Connectable module | QD63P6 | | | |
| Counter input signal | Voltage | 5V±10% | 12V±10% | 24V±10% |
| | Current | 6.4 to 11.5mA | 10.8 to 15.9mA | 10.5 to 14.9mA |
| | Pulse width | Conforms to the QD63P6 performance specifications. | | |
| Connectable encoder | Open collector output, CMOS voltage output | | Open collector output | |
| Terminal block | Terminal screw | M3 screws, 7.62mm pitch | | |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N·cm (5.2 to 7.6kgf·cm) | | |
| Module installation | Screw | M4 × 0.7mm × 8mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) | | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | | |
| Withstand voltage, insulation resistance | Withstand voltage: 500VAC for 1 minute, Resistance: 10MΩ or more (between all external terminals and ground) | | | |
| Weight | Approx. 240g | Approx. 240g | Approx. 240g | |

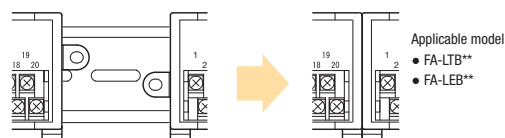
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



External connection

<FA-LTB40D63P6V5>

| | | | | | | | | | | | | | | | | | | | | | |
|-----------|-----------|-------|---|-----------|-----------|----|----|-----------|-----------|----|----|-----------|-----------|----|----|-----------|-----------|----|----|-----------|-----------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | 40 | |
| CH1 A*(5) | CH1 B*(5) | | | CH2 A*(5) | CH2 B*(5) | | | CH3 A*(5) | CH3 B*(5) | | | CH4 A*(5) | CH4 B*(5) | | | CH5 A*(5) | CH5 B*(5) | | | CH6 A*(5) | CH6 B*(5) |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | | |
| | CH1 A | CH1 B | | CH2 A | CH2 B | | | CH3 A | CH3 B | | | CH4 A | CH4 B | | | CH5 A | CH5 B | | | CH6 A | CH6 B |

<FA-LTB40D63P6V12>

| | | | | | | | | | | | | | | | | | | | | | |
|------------|------------|-------|---|------------|------------|----|----|------------|------------|----|----|------------|------------|----|----|------------|------------|----|----|------------|------------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | 40 | |
| CH1 A*(12) | CH1 B*(12) | | | CH2 A*(12) | CH2 B*(12) | | | CH3 A*(12) | CH3 B*(12) | | | CH4 A*(12) | CH4 B*(12) | | | CH5 A*(12) | CH5 B*(12) | | | CH6 A*(12) | CH6 B*(12) |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | | |
| | CH1 A | CH1 B | | CH2 A | CH2 B | | | CH3 A | CH3 B | | | CH4 A | CH4 B | | | CH5 A | CH5 B | | | CH6 A | CH6 B |

<FA-LTB40D63P6V24>

| | | | | | | | | | | | | | | | | | | | | | |
|------------|------------|-------|---|------------|------------|----|----|------------|------------|----|----|------------|------------|----|----|------------|------------|----|----|------------|------------|
| 1 | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | 40 | |
| CH1 A*(24) | CH1 B*(24) | | | CH2 A*(24) | CH2 B*(24) | | | CH3 A*(24) | CH3 B*(24) | | | CH4 A*(24) | CH4 B*(24) | | | CH5 A*(24) | CH5 B*(24) | | | CH6 A*(24) | CH6 B*(24) |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | | |
| | CH1 A | CH1 B | | CH2 A | CH2 B | | | CH3 A | CH3 B | | | CH4 A | CH4 B | | | CH5 A | CH5 B | | | CH6 A | CH6 B |

*: A limiting resistor required for the input signals 12V/24V is included inside the junction terminal block. External resistors are not required. For wiring other than illustrated at left, refer to the manual of the counter module to be connected, published by Mitsubishi Electric.

Connection cables



Connection cables for multichannel high-speed counter module (MELSEC-Q series)

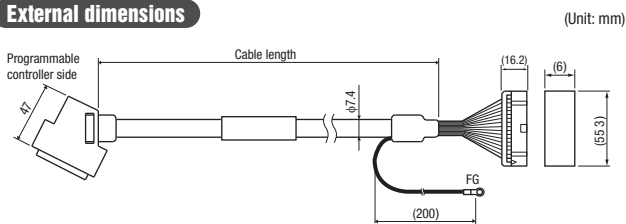
FA-CBL**QD63P6

- Connectors can be inserted by one-touch motion, reducing time and cost for wiring.
- The cable is a shielded cable with high noise resistance.

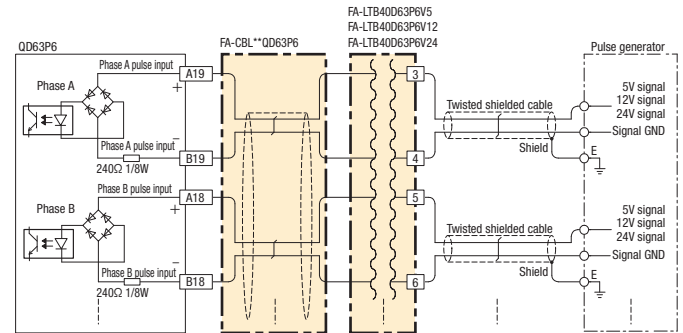
Specifications

| Item | Specifications | | | |
|---------------------|----------------|----------------|----------------|----------------|
| | FA-CBL05QD63P6 | FA-CBL10QD63P6 | FA-CBL15QD63P6 | FA-CBL20QD63P6 |
| Cable length | 0.5m | 1m | 1.5m | 2m |
| Solderless terminal | M4 | | | |
| Weight | Approx. 110g | Approx. 160g | Approx. 210g | Approx. 260g |

External dimensions

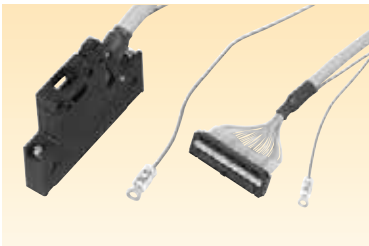


Connection example



Precautions for use

The total length of cables from a pulse generator to the QD63P6 depends on the device used and usage conditions. Consider above precautions and select the optimum cable length when a connection cable is selected.



For high-speed counter, connection cable for MELSEC-L CPU module with built-in I/O function

FA-SCBL**FMV-M

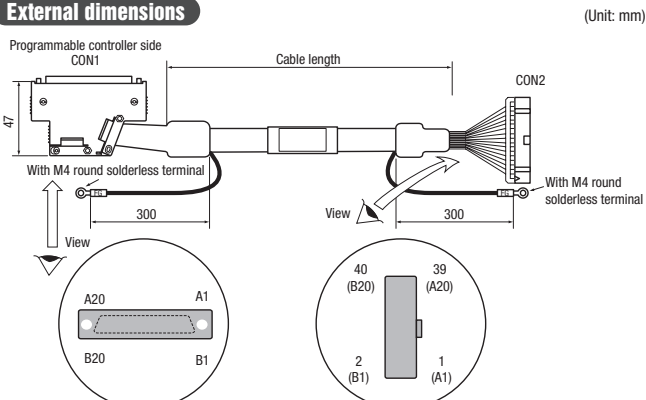
- Connectors can be inserted by one-touch motion, reducing time and cost for wiring.
- The cable is a shielded cable with high noise resistance.

Related products Junction terminal block P.144

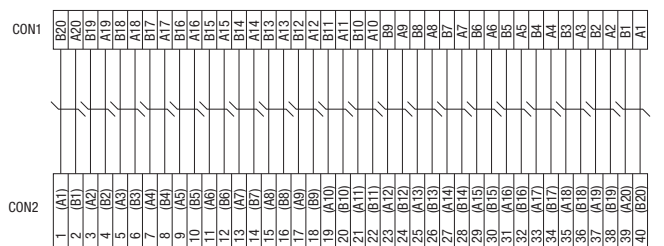
Specifications

| Item | Specifications | | | |
|----------------------------------------|--------------------------------------------------------------------------|----------------|----------------|----------------|
| | FA-SCBL05FMV-M | FA-SCBL10FMV-M | FA-SCBL15FMV-M | FA-SCBL20FMV-M |
| Programmable controller side connector | 1473381-1 manufactured by TE Connectivity Ltd. | | | |
| Junction terminal block side connector | D7940-7500SC, D3448-7940 manufactured by 3M Japan Limited | | | |
| Cable | Round 40-core cable (cable color: pearl gray) | | | |
| Conductor configuration | 28AWG (0.08mm ²) | | | |
| Cable length | 0.5m | 1m | 1.5m | 2m |
| Solderless terminal | M4 (RAV1.25-S4 manufactured by DAIDO SOLDERLESS TERMINAL MFG. CO., LTD.) | | | |
| Weight | Approx. 110g | Approx. 160g | Approx. 210g | Approx. 260g |

External dimensions



Connection diagram



For high-speed counter modules

External connection

The following shows the names of signals input to the terminals of the connected junction terminal block FA-TBS40P.

For wiring to the terminal block, refer to the manual of the high-speed module to be connected, published by Mitsubishi Electric.

Table with 3 sections for modules RD62P2, RD62P2E, and RD62D2. Each section contains a table mapping Terminal No. to Signal name across 39 terminals. Signal names include CH1, CH2, PRST, FUNC, and EQU1/EQU2.

Ground the shielded cable in the same manner as the programmable controller module. When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.

For MELSEC-L CPU module with built-in I/O function

External connection

The following shows the names of signals input to the terminals of the connected junction terminal block FA-TBS40P.

For wiring to the terminal block, refer to the manual of the MELSEC-L CPU module to be connected, published by Mitsubishi Electric.

Table with 2 sections for MELSEC-L CPU module. Each section contains a table mapping Programmable controller side connector pin No. to Signal name across 39 pins. Signal names include IN0-IN9, OUT0-OUT9, INA-INC, and INB-IND.

Ground the shielded cable in the same manner as the programmable controller module. When grounding is not performed and the extra wire is rolled up, the wire may act as an antenna, possibly introducing noise. Caution is required.

Connection example 1: when the high-speed counter function is used

Table showing terminal assignments for high-speed counter function. Signal names include PULSE A1, PULSE B1, PULSE Z1, IN COM, and LATCH1.

Connection example 2: when the positioning function is used

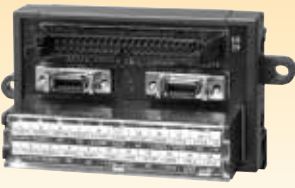
Table showing terminal assignments for positioning function. Signal names include PG01, PG02, IN COM, CHG, READY, DOG, and FLS.

Connection example 3: when combination of 24VDC input/output, high-speed counter, and positioning function is used

Table showing terminal assignments for combined functions. Signal names include PULSE A1, PULSE B1, PULSE Z1, X2, X3, PG02, IN COM, CHG, READY, DOG, FLS, Y1, and CLEAR2.

For positioning modules

Screw terminal type



Between positioning modules and servo amplifier

FA-LTBQ75DP

- Positioning signals are converted into terminal block outputs, enabling easy wiring of devices.
- The marking strip can reduce wiring mistakes.

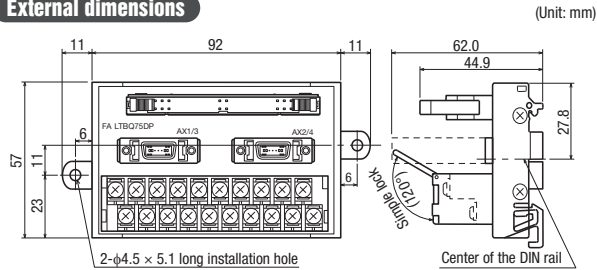
Specifications

| Item | Specifications | |
|-----------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable module | RD75D2/4, RD75P2/4, QD75D1/1N/2/2N/4/4N, QD75P1/1N/2/2N/4/4N, QD70D4/8, LD75D1/2/4, LD75P1/2/4 | |
| No. of axes supported | 2 (Use two terminal blocks to support 4 axes, and four terminal blocks to support 8 axes.) | |
| Terminal block | Terminal screw | M3 screws, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N-cm (5.2 to 7.6kgf-cm) |
| Connector | Positioning module side | MIL 40P connector |
| | Servo amplifier side | MDR14P side connector × 2 |
| Module installation | Screw | M4 × 0.7mm × 8mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Withstand voltage | 500VAC for 1 minute (between all DC external terminals and ground) | |
| Weight | Approx. 140g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

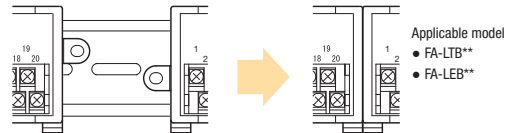
Note 2: To connect the differential driver common terminal (third/fourth axis side connector) of the RD75D2/4, use the PULSER B- and PULSER A- terminals (No.1 and No.3).

External dimensions

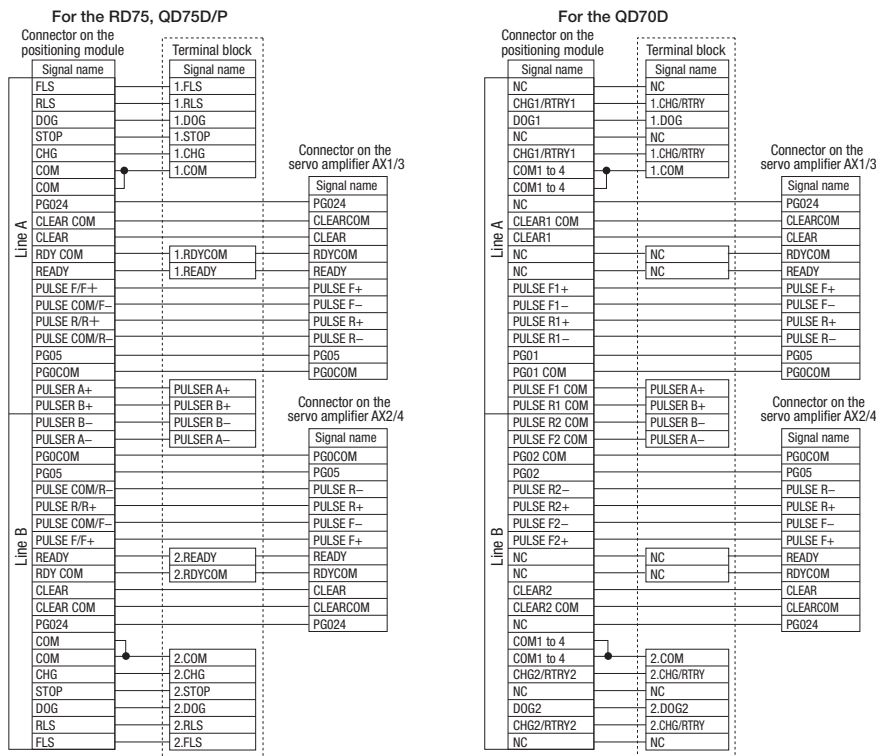


Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



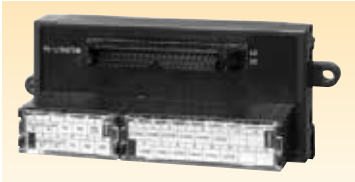
Connection diagram



How to read the marking strip

- Signal name when the RD75/QD75 is used
... Black characters in the white background
- Signal name when the QD70 is used
... White characters on the black background

| | | | | | | | | | | |
|-----------|-----------|-----------|----------|---------|-----------------------|-----------------------|--------|-----------------------|-----------------------|-------|
| PULSER B- | PULSER A- | 2.RDYCOM | 2.READY | 2.COM | 2.CHG | 2.STOP | 2.DOG | 2.RLS | 2.FLS | 75 |
| PULSER B- | PULSER A- | NC | NC | 2.COM | ² CHG/RTRY | NC | 2.DOG | ² CHG/RTRY | NC | 70 |
| 75 | PULSER B+ | PULSER A+ | 1.RDYCOM | 1.READY | 1.COM | 1.CHG | 1.STOP | 1.DOG | 1.RLS | 1.FLS |
| 70 | PULSER B+ | PULSER A+ | NC | NC | 1.COM | ¹ CHG/RTRY | NC | 1.DOG | ¹ CHG/RTRY | NC |



For positioning modules

FA-LTBQ75M

- Positioning signals are converted into terminal block outputs, enabling easy wiring of devices.
- The marking strip can reduce wiring mistakes.

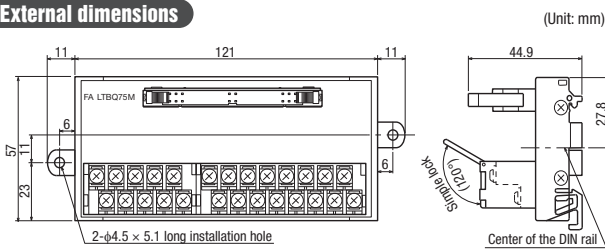
Specifications

| Item | Specifications | |
|-----------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable module | RD77MS2/4/8/16, QD77MS2/4/16, QD75MH1/2/4, QD75M1/2/4 | |
| No. of axes supported | 2 (Use two terminal blocks to support 4 axes.) | |
| Terminal block | Terminal screw | M3 screws, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N·cm (5.2 to 7.6kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 8mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5A ¹ (IEC 60715 compliant) |
| Withstand voltage | 500VAC for 1 minute (between all DC external terminals and ground) | |
| Weight | Approx. 150g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

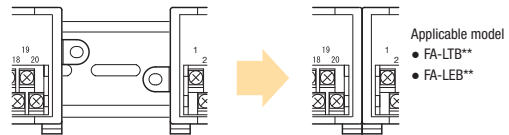
Note 2: When the QD77MS* is used, signals to which a manual pulse generator or incremental synchronous encoder is connected (HAH, HAL, HBH, HBL signals) are not available. Use a voltage/transistor output type manual pulse generator or incremental synchronous encoder.

External dimensions



Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



Connection diagram

| For the QD75M | | For the QD75MH | | For the QD77MS | |
|-------------------------------------|----------------|-------------------------------------|----------------|-------------------------------------|----------------|
| Connector on the positioning module | Terminal block | Connector on the positioning module | Terminal block | Connector on the positioning module | Terminal block |
| Signal name | Signal name | Signal name | Signal name | Signal name | Signal name |
| FLS | 1.FLS | FLS | 1.FLS | FLS | 1.FLS |
| RLS | 1.RLS | RLS | 1.RLS | RLS | 1.RLS |
| DOG | 1.DOG | DOG | 1.DOG | DOG | 1.DOG |
| STOP | 1.STOP | STOP | 1.STOP | STOP | 1.STOP |
| CHG | 1.CHG | CHG | 1.CHG | D1 | 1.CHG |
| COM | 1.COM | COM | 1.COM | COM | 1.COM |
| COM | | COM | | COM | |
| NC | EMI | EMI | EMI | EMI | EMI |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | SG | NC | | NC | |
| NC | P5 | SG | SG | SG | SG |
| NC | | P5 | P5 | 5V | P5 |
| NC | | NC | | NC | |
| NC | | NC | | HAH | |
| NC | | NC | | HBH | |
| PULSER A+ | PULSER A+ | PULSER A+ | PULSER A+ | 5V | PULSER A+ |
| PULSER B+ | PULSER B+ | PULSER B+ | PULSER B+ | 5V | PULSER B+ |
| PULSER B- | PULSER B- | PULSER B- | PULSER B- | HB | PULSER B- |
| PULSER A- | PULSER A- | PULSER A- | PULSER A- | HA | PULSER A- |
| NC | | NC | | HBL | |
| NC | | NC | | HAL | |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | P5 | P5 | P5 | 5V | P5 |
| NC | SG | SG | SG | SG | SG |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | | NC | | NC | |
| NC | EMI.COM | NC | | NC | |
| COM | | EMI.COM | EMI.COM | EMI.COM | EMI.COM |
| COM | 2.COM | COM | 2.COM | COM | 2.COM |
| CHG | 2.CHG | CHG | 2.CHG | COM | 2.COM |
| STOP | 2.STOP | STOP | 2.STOP | D2 | 2.CHG |
| DOG | 2.DOG | DOG | 2.DOG | STOP | 2.STOP |
| RLS | 2.RLS | DOG | 2.DOG | DOG | 2.DOG |
| FLS | 2.FLS | RLS | 2.RLS | RLS | 2.RLS |
| | | FLS | 2.FLS | FLS | 2.FLS |



For MELSEC-L CPU module with built-in I/O function (positioning function) FA-PT1LBD

- This product converts outputs into the differential driver outputs, improving the external-noise resistance.
- The maximum wiring length to a drive unit is 10m, which allows more flexible installation of units.

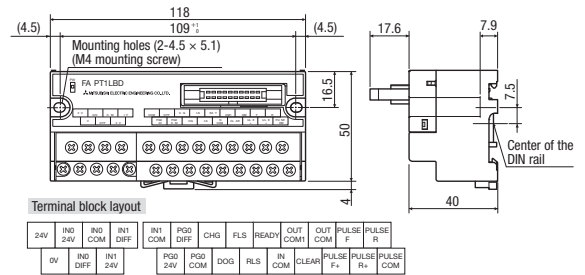
Specifications

| Item | Specifications | |
|------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No. of conversion axes | 1 | |
| Output | Differential drivers equivalent to the AM26C31 | |
| Maximum output pulse | 200kpps | |
| PULSE F/R output specifications | Pulse width | 2.0μs or more |
| | Maximum connection distance with drive module | 10m |
| Power supply for command pulse signals | 24V±10%, 50mA or less | |
| PGO/CHG/DOG/FLS/RLS input specifications | | |
| READY input specifications | Depends on MELSEC-L CPU module with built-in I/O function (positioning function) | |
| CLEAR output specifications | | |
| Module power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 40mA at 24VDC (not including current consumption of programmable controller) | |
| Terminal block | Terminal screw | M3 screws, number of terminals: 25P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque | 0.5 to 1.25mm ² , 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Withstand voltage, insulation resistance | Between power supply and signal: 500VAC for 1 minute, 10MΩ or more | |
| Module installation | Screw | M4 × 0.7mm × 16mm or more, tightening torque: 78 to 108N-cm (8 to 11kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Aℓ (IEC 60715 compliant) |
| Weight | Approx. 170g | |

*: For wiring to the terminal block, refer to the manual of the MELSEC-L CPU module to be connected, published by Mitsubishi Electric.

External dimensions

(Unit: mm)



Connection diagram



Connection cables



Connection cable between positioning module and servo amplifier
(for Mitsubishi Electric MR-J5-A/J4-A/J3-A series)

**FA-CBLQ75M2J3, FA-CBLQ75M2J3-P, FA-CBLQ75M2J3-1,
FA-CBLQ75PM2J3, FA-CBLQ75PM2J3-1**

- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

| Item | Specifications | | | | |
|------------------------------|-----------------------------------------------------------------------------------------------------|-----------------|-------------------|------------------------------------|-------------------|
| | FA-CBLQ75M2J3 | FA-CBLQ75M2J3-P | FA-CBLQ75M2J3-1 | FA-CBLQ75PM2J3 | FA-CBLQ75PM2J3-1 |
| Connectable module | RD75D2/4, OD75D2/2N/4/4N, LD75D2/4 | | OD75D1/1N, LD75D1 | RD75P2/4, OD75P2/2N/4/4N, LD75P2/4 | OD75P1/1N, LD75P1 |
| No. of axes supported | 2 | | 1 | 2 | 1 |
| Manual pulse generator cable | Not included | Included | Not included | | |
| Cable | For fixing area, Length: 2m, Permissible bending radius: 120mm | | | | |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire | | | | |
| Solderless terminal | V1.25-M3 (Round insulated solderless terminal for M3.5 screw) manufactured by J.S.T. MFG. CO., LTD. | | | | |
| Weight | Approx. 1,370g | Approx. 1,480g | Approx. 780g | Approx. 1,360g | Approx. 780g |

Note 1: These cables are not compatible with the absolute position detection system.

Note 2: The differential driver common terminal (third/fourth axis side connector) of the RD75D4 can be wired with the manual pulse generator cables from "PULSER B-" and "PULSER A-" terminals of the FA-CBLQ75M2J3-P.

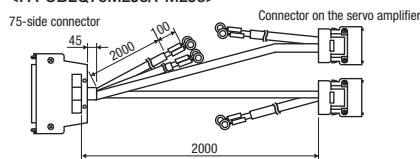
When manual pulse generator cables are not provided with the product used, the differential driver common terminal is not available.

Note 3: Cables for the differential driver common terminal (third/fourth axis side connector) of the RD75D2 must be fabricated by the user.

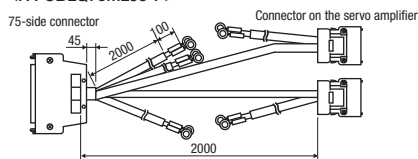
External dimensions

(Unit: mm)

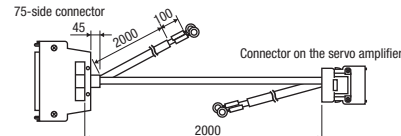
<FA-CBLQ75M2J3/PM2J3>



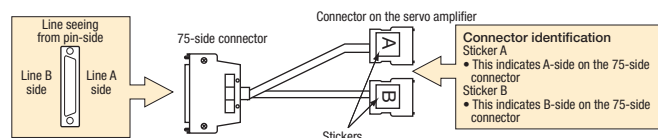
<FA-CBLQ75M2J3-P>



<FA-CBLQ75M2J3-1/PM2J3-1>



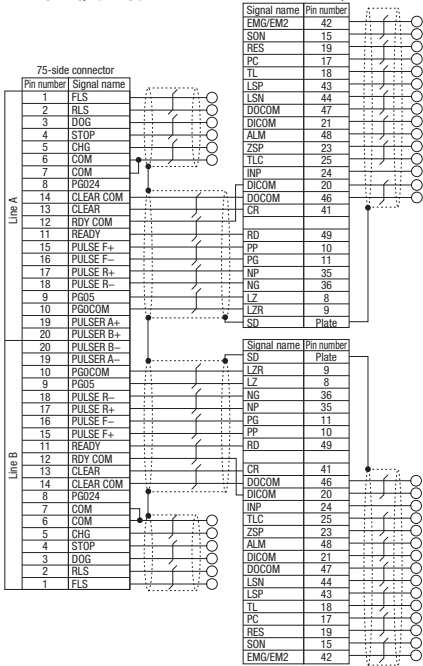
Details of the connector



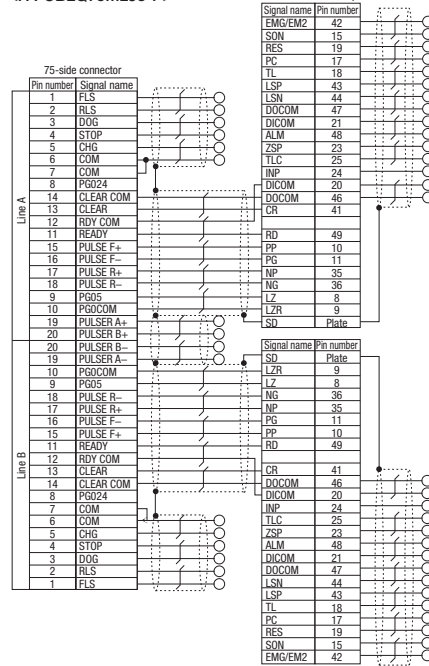
Connection diagram

○ indicates solderless terminal.

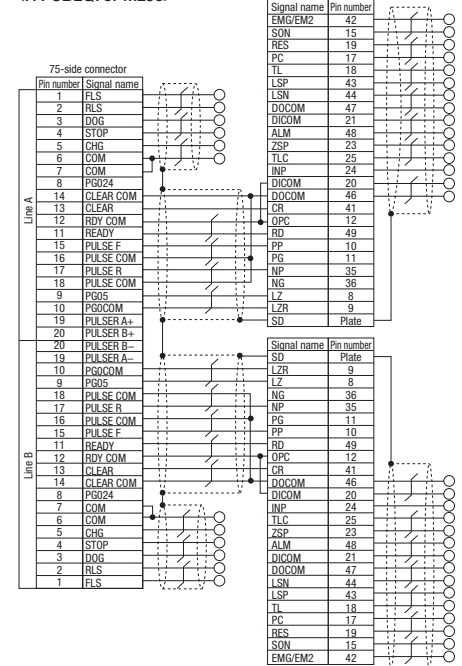
<FA-CBLQ75M2J3>



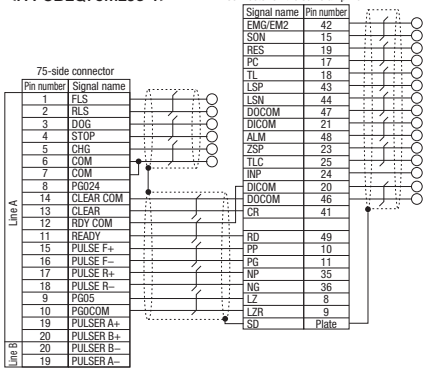
<FA-CBLQ75M2J3-P>



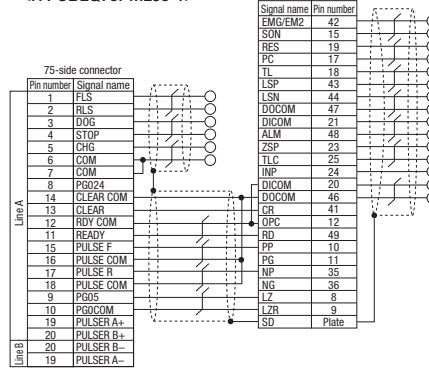
<FA-CBLQ75PM2J3>



<FA-CBLQ75M2J3-1>



<FA-CBLQ75PM2J3-1>



*: Wirings to the phase A, phase B, and phase Z pulses of the servo side detector are not required.



Connection cable between positioning module and servo amplifier (for Mitsubishi Electric MR-J2-A/J2S-A series)

**FA-CBLQ75M2J2, FA-CBLQ75M2J2-P, FA-CBLQ75M2J2-1,
FA-CBLQ75PM2J2, FA-CBLQ75PM2J2-1**

- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

| Item | Specifications | | | | |
|------------------------------|-----------------------------------------------------------------------------------------------------|-----------------|-------------------|------------------------------------|-------------------|
| | FA-CBLQ75M2J2 | FA-CBLQ75M2J2-P | FA-CBLQ75M2J2-1 | FA-CBLQ75PM2J2 | FA-CBLQ75PM2J2-1 |
| Connectable module | RD75D2/4, QD75D2/2N/4/4N, LD75D2/4 | | QD75D1/1N, LD75D1 | RD75P2/4, QD75P2/2N/4/4N, LD75P2/4 | QD75P1/1N, LD75P1 |
| No. of axes supported | 2 | | 1 | 2 | 1 |
| Manual pulse generator cable | Not included | Included | Not included | | |
| Cable | For fixing area, Length: 2m, Permissible bending radius: 120mm | | | | |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire | | | | |
| Solderless terminal | V1.25-M3 (Round insulated solderless terminal for M3.5 screw) manufactured by J.S.T. MFG. CO., LTD. | | | | |
| Weight | Approx. 850g | Approx. 980g | Approx. 520g | Approx. 850g | Approx. 520g |

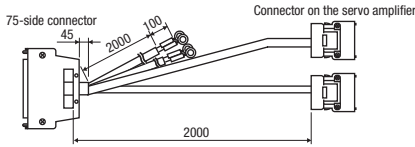
Note 1: The differential driver common terminal (third/fourth axis side connector) of the RD75D4 can be wired with the manual pulse generator cables from "PULSER B-" and "PULSER A-" terminals of the FA-CBLQ75M2J2-P.
When manual pulse generator cables are not provided with the product used, the differential driver common terminal is not available.

Note 2: Cables for the differential driver common terminal (third/fourth axis side connector) of the RD75D2 must be fabricated by the user.

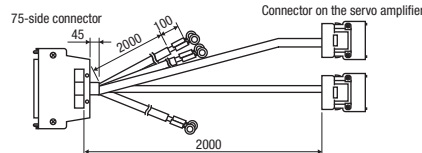
External dimensions

(Unit: mm)

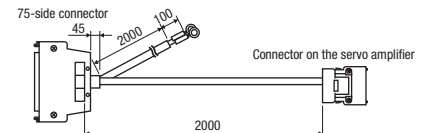
<FA-CBLQ75M2J2/PM2J2>



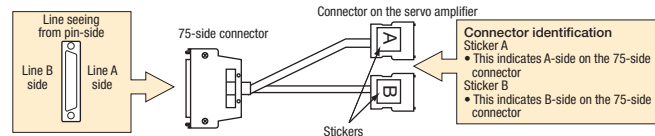
<FA-CBLQ75M2J2-P>



<FA-CBLQ75M2J2-1/PM2J2-1>



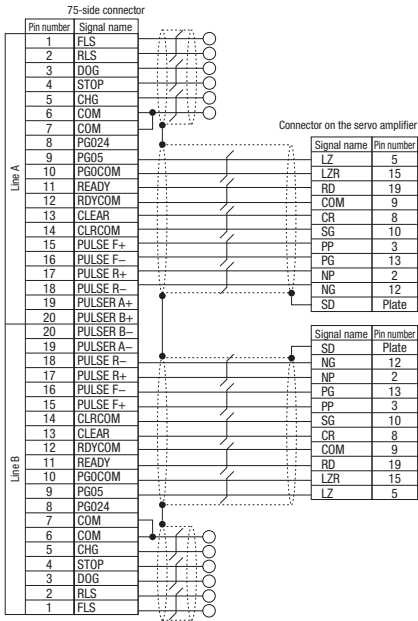
Details of the connector



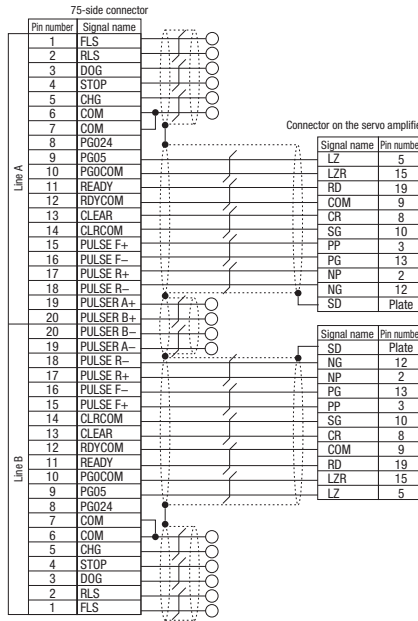
Connection diagram

○ indicates solderless terminal.

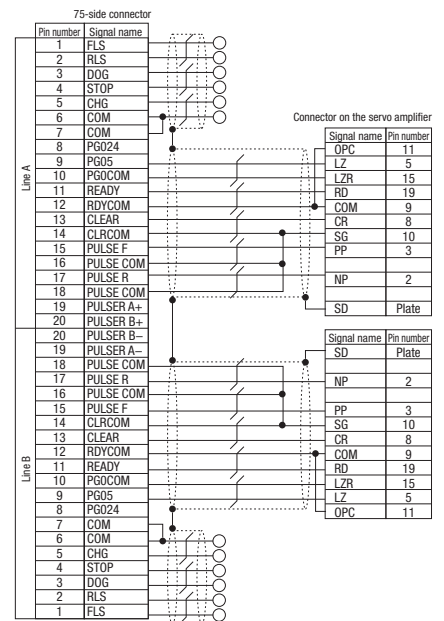
<FA-CBLQ75M2J2>



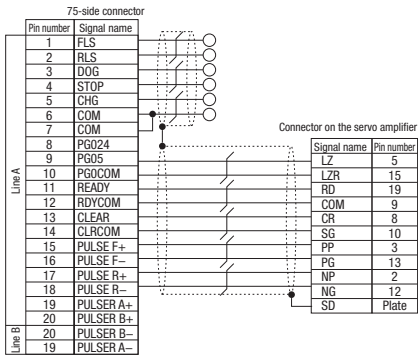
<FA-CBLQ75M2J2-P>



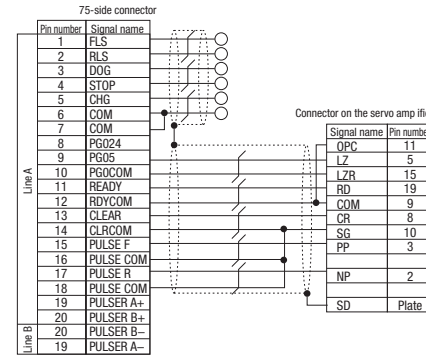
<FA-CBLQ75PM2J2>



<FA-CBLQ75M2J2-1>



<FA-CBLQ75PM2J2-1>



*: Additional wiring to CN1B, such as servo on, external emergency stop, and forward/reverse stroke end, is required.



Connection cable between positioning module and servo amplifier (for YASKAWA Σ-II/Σ-II PLUS series)

FA-CBLQ75Y2EII

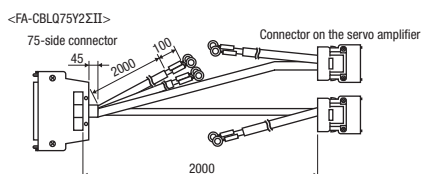
- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

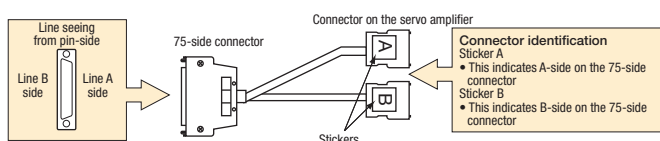
| Item | Specifications |
|------------------------------|-----------------------------------------------------------------------------------------------------|
| Connectable module | RD75D2/4, OD75D2/2N/4/4N, LD75D2/4 |
| No. of axes supported | 2 |
| Manual pulse generator cable | Not included |
| Cable | For fixing area, Length: 2m, Permissible bending radius: 120mm |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire |
| Solderless terminal | V1.25-M3 (Round insulated solderless terminal for M3.5 screw) manufactured by J.S.T. MFG. CO., LTD. |
| Weight | Approx. 1,130g |
| Order model number | FA-CBLQ75Y2E2 |

Note 1: The differential driver common terminal of the RD75D2/4 is not available.

External dimensions



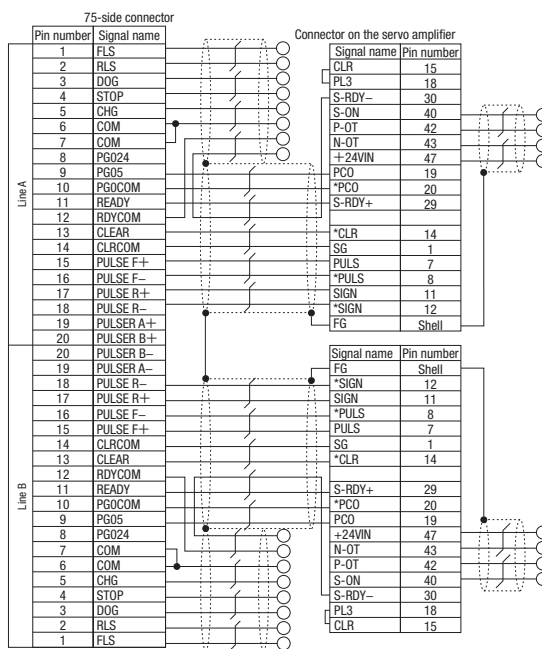
Details of the connector



Connection diagram

○ indicates solderless terminal.

<FA-CBLQ75Y2EII>





Connection cable between positioning module and servo amplifier (for YASKAWA Σ -III/ Σ -V series)

FA-CBLQ75Y2E3

- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

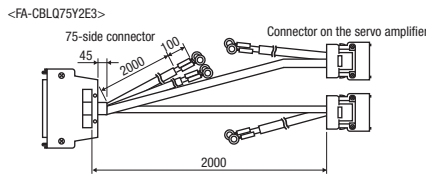
Specifications

| Item | Specifications |
|------------------------------|-----------------------------------------------------------------------------------------------------|
| Connectable module | RD75D2/4, OD75D2/2N/4/4N, LD75D2/4 |
| No. of axes supported | 2 |
| Manual pulse generator cable | Not included |
| Cable | For fixing area, Length: 2m, Permissible bending radius: 120mm |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire |
| Solderless terminal | V1.25-M3 (Round insulated solderless terminal for M3.5 screw) manufactured by J.S.T. MFG. CO., LTD. |
| Weight | Approx. 1,290g |

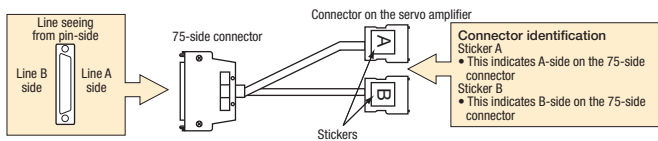
Note 1: The differential driver common terminal of the RD75D2/4 is not available.

External dimensions

(Unit: mm)



Details of the connector



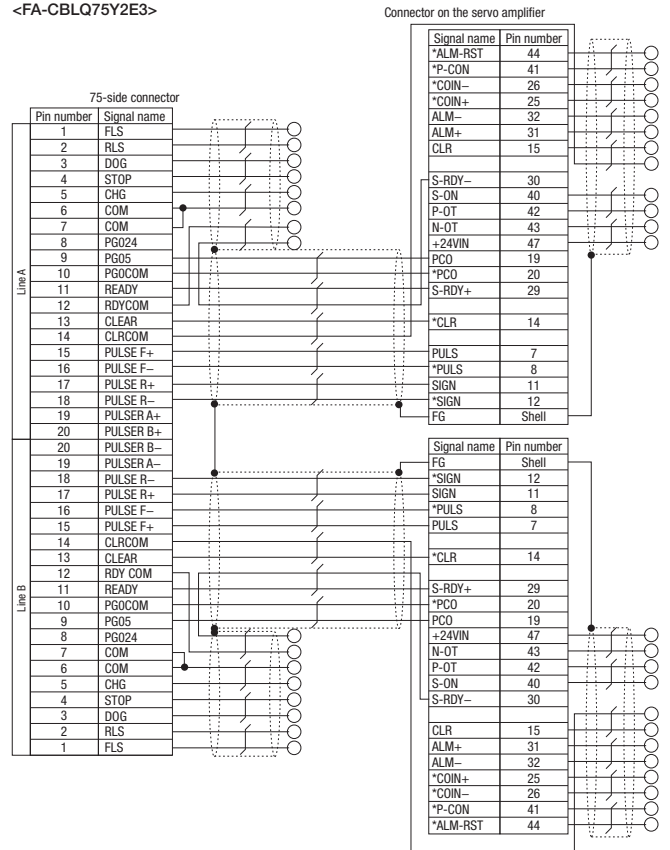
Precautions

- Connection diagram is for the Ver.B product.
- The deviation counter clear signal is available for Ver.B or later.
- The "Ver.B" label is attached to the rear of the model label of the Ver.B product.
- Ver.B is supported by products manufactured in February 2012 or later.

Connection diagram

○ indicates solderless terminal.

<FA-CBLQ75Y2E3>





Connection cable between positioning module and junction terminal block

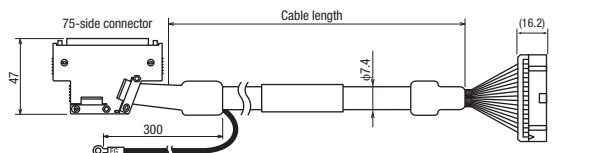
FA-CBL**Q7

- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

| Item | Specifications | |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|
| | FA-CBL05Q7 | FA-CBL10Q7 |
| Connectable module | Between either of RD75D**/P*, QD75D**/P**, QD70D**, QD75M**/MH**, or QD77MS** and FA-LTBQ75DP/75M | |
| Cable length | 0.5m | 1m |
| Solderless terminal | FG wire: RAV1.25-S4 (round insulated solderless terminal for M4 screw) manufactured by DAIDO SOLDERLESS TERMINAL MFG. CO., LTD. | |
| Weight | Approx. 100g | Approx. 150g |

External dimensions



(Unit: mm)



Connection cable between junction terminal block and servo amplifier (for Mitsubishi Electric MR-J4-A/J3-A series)

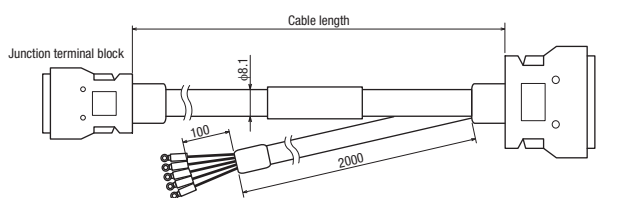
FA-CBLQ7DM*J3, FA-CBLQ7PM*J3

- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

| Item | Specifications | |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------|
| | FA-CBLQ7DM1J3 | FA-CBLQ7PM1J3 |
| Connectable module | Between FA-LTBQ75DP and MR-J3A/MR-J4A series | |
| Cable length | 1.0m | 1m |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire | |
| Solderless terminal | RAV1.25-3.5 (round insulated solderless terminal for M3.5 screw) manufactured by DAIDO SOLDERLESS TERMINAL MFG. CO., LTD. | |
| Weight | Approx. 400g | Approx. 400g |

External dimensions

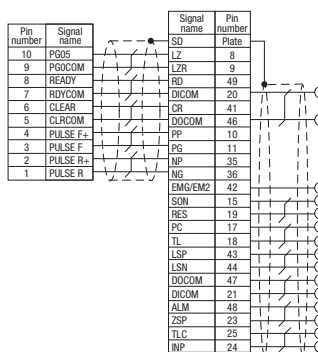


(Unit: mm)

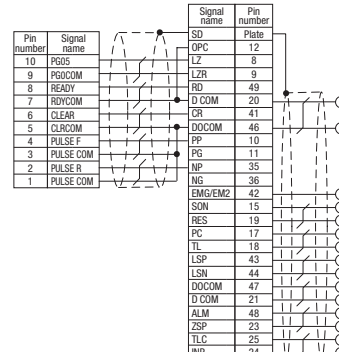
Connection diagram

○ indicates solderless terminal.

<FA-CBLQ7DM**J3>



<FA-CBLQ7PM**J3>



Connection cable between junction terminal block (for general-purpose stepping motors and servo amplifiers) and servo amplifier

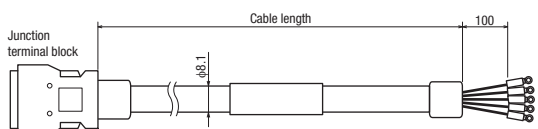
FA-CBLQ7DG*

- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

| Item | Specifications |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Connectable module | Between FA-LTBQ75DP and general-purpose stepping motor, general-purpose servo amplifier |
| Cable length | 1.0m |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire |
| Solderless terminal | RAV1.25-3.5 manufactured by DAIDO SOLDERLESS TERMINAL MFG. CO., LTD. (round insulated solderless terminal for M3.5 screw) |
| Weight | Approx. 130g |

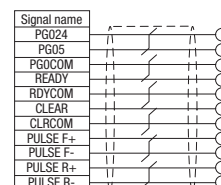
External dimensions



(Unit: mm)

Connection diagram

○ indicates solderless terminal.





Connection cable between CC-Link positioning module and servo amplifier (for Mitsubishi Electric MR-J2-A/J2S-A series)

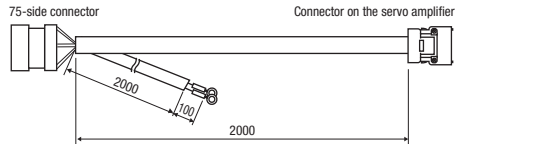
FA-CBLA75M2J2-P

- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

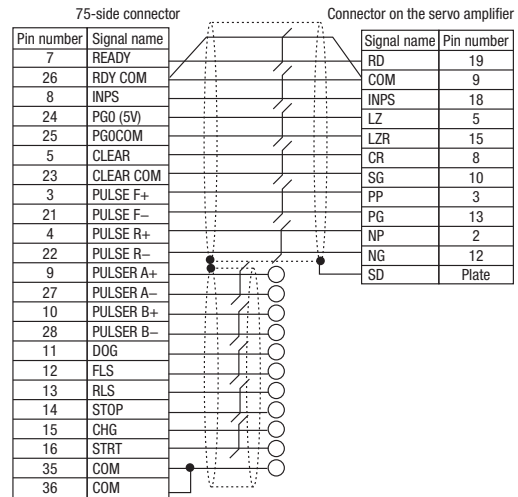
| Item | Specifications |
|------------------------------|-----------------------------------------------------------------------------------------------------|
| Connectable module | AJ65BT-D75P2-S3 |
| Manual pulse generator cable | Included |
| Cable | For fixing area, Length: 2m, Permissible bending radius: 120mm |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire |
| Solderless terminal | V1.25-M3 manufactured by J.S.T.MFG.CO.,LTD. (round insulated solderless terminal for M3.5 screw) |
| Weight | Approx. 580g |

External dimensions



Connection diagram

○ indicates solderless terminal.



*: Additional wiring to CN1B, such as servo on, external emergency stop, and forward/reverse stroke end, is required.



Connection cable between CC-Link positioning module and servo amplifier (for Mitsubishi Electric MR-J4-A/J3-A series)

FA-CBLA75M2J3-P

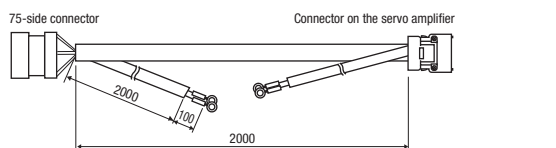
- External device connection cables are provided, making wiring easy.
- This cable is shielded to reduce noise.

Specifications

| Item | Specifications |
|------------------------------|-----------------------------------------------------------------------------------------------------|
| Connectable module | AJ65BT-D75P2-S3 |
| Manual pulse generator cable | Included |
| Cable | For fixing area, Length: 2m, Permissible bending radius: 120mm |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire |
| Solderless terminal | V1.25-M3 manufactured by J.S.T.MFG.CO.,LTD. (round insulated solderless terminal for M3.5 screw) |
| Weight | Approx. 840g |

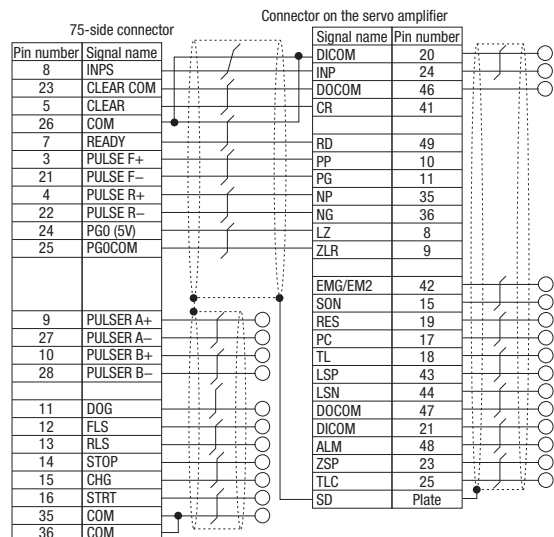
Note 1: These cables are not compatible with the absolute position detection system.

External dimensions



Connection diagram

○ indicates solderless terminal.





Connection cable between CC-Link positioning module and servo amplifier (discrete cable for general-purpose stepping motors and servo amplifiers)

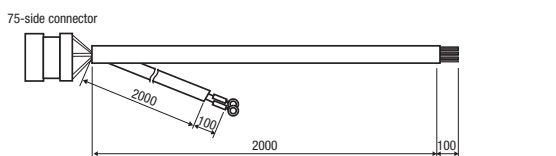
FA-CBLA75G2P-P, FA-CBLA75G2D-P

- Discrete cables enable suitable wiring according to connected devices.
- This cable is shielded to reduce noise.

Specifications

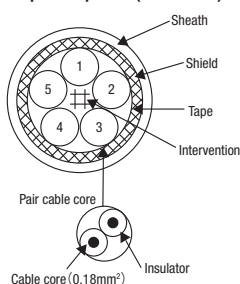
| Item | Specifications | |
|--------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------|
| | FA-CBLA75G2P-P | FA-CBLA75G2D-P |
| Connectable module | AJ65BT-D75P2-S3 | |
| Application | Transistor output | For differential driver outputs |
| Manual pulse generator cable | Included | |
| Cable | For fixing area, Length: 2m, Permissible bending radius: 120mm | |
| Conductor configuration | Nominal cross sectional area: 0.18mm ² (25AWG), Material: Tin-plated soft copper wire | |
| Applicable solderless terminal | V1.25-M3 manufactured by J.S.T.MFG.CO.,LTD. (round insulated solderless terminal for M3.5 screw) | |
| Weight | Approx. 580g | Approx. 580g |

External dimensions



Cable structure diagram

Example: 5 pairs (10 cores)



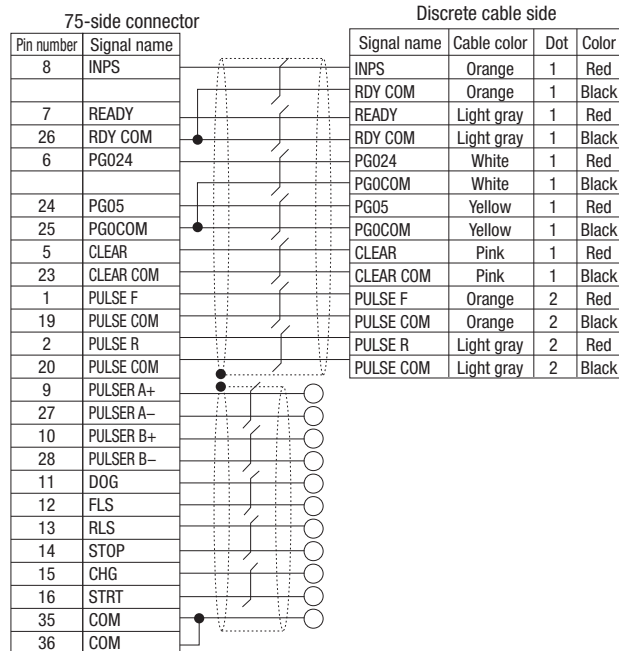
Cable core identification

| No. | Insulator | Dot | Color |
|-----|------------|-------------|-------|
| 1 | Orange | — (1 short) | Red |
| 2 | — | — | Black |
| 3 | Light gray | — | Red |
| 4 | — | — | Black |
| 5 | White | — | Red |
| 6 | — | — | Black |
| 7 | Yellow | — | Red |
| 8 | — | — | Black |
| 9 | Pink | — | Red |
| 10 | — | — | Black |

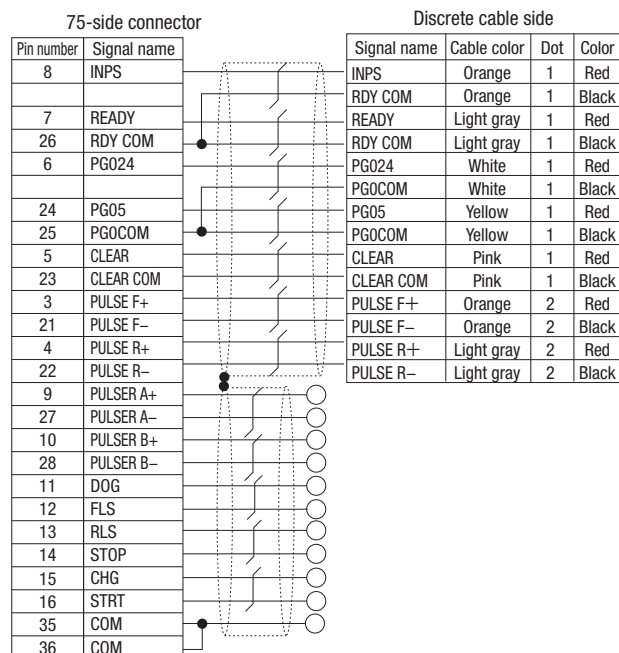
Connection diagram

○ indicates solderless terminal.

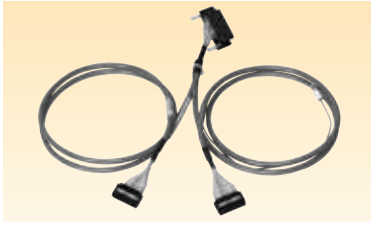
<FA-CBLA75G2P-P>



<FA-CBLA75G2D-P>



*: Terminal processing is not performed on the discrete cable side. Perform the terminal processing depending on the connected device.



Connection cable between MELSEC-L CPU module with built-in I/O and junction terminal block

FA-SCBL10FM2LV-LB

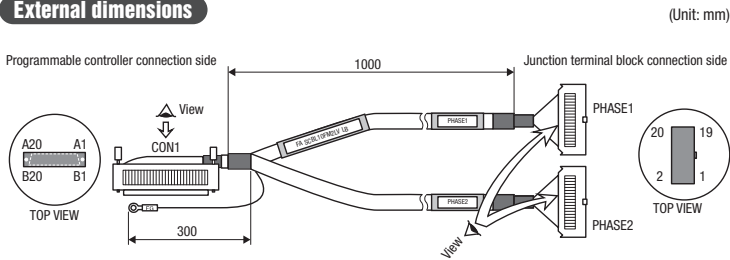
- Connectors can be inserted by one-touch motion, reducing time and cost for wiring.
- The cable is a shielded cable with high noise resistance.

Related products Junction terminal block P.145 P.206

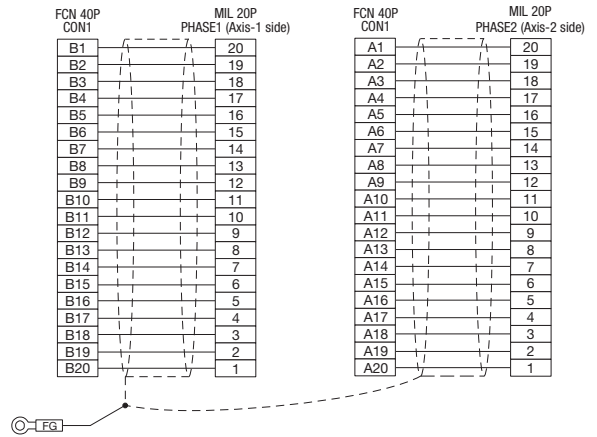
Specifications

| Item | Specifications |
|--------------------------------------|--------------------------------------------------------------------------|
| Connector on programmable controller | FCN-367J040-AU/MW manufactured by FUJITSU COMPONENT LIMITED |
| Connector on junction terminal block | D7920-B500FL, D3448-7920 × 2, manufactured by 3M Japan Limited |
| Cable | Round 20-core cable × 2 (cable color: gray) |
| Conductor configuration | 28AWG (0.08mm ²) |
| Cable length | 1m |
| Solderless terminal | M4 (RAV1.25-S4 manufactured by DAIDO SOLDERLESS TERMINAL MFG. CO., LTD.) |
| Weight | Approx. 150g |

External dimensions



Connection diagram



Digital signal converters (terminal modules)

Model list

Digital signal converters (terminal modules) for input signals

| | Control method | Connection method | Module | | Model | Refer to |
|------------------------------------------------------|------------------------------------------|-------------------|-----------------------------|--------------|----------------------|----------|
| | | | Replacement (Shape) | Mixing | | |
| Installation base unit (module selectable type) | 4 points, independent | Spring clamp | Possible (function type) | Possible | FA1-TH4X2SC20S1E | P.236 |
| | 8 points, independent | | Possible (function type) | Possible | FA1-TH8X2SC20S1E | P.236 |
| Module pre-mounted type unit (24VDC, N/O contact) | 4 points, independent (positive common) | Spring clamp | Possible (slim type) | 1) | FA1-TH4X24RA1L20S1E | P.230 |
| | 4 points, independent (negative common) | | Possible (slim type) | 1) | FA1-TH4X24RA1H20S1E | P.230 |
| | 8 points, independent (positive common) | | Possible (slim type) | 1) | FA1-TH8X24RA1L20S1E | P.232 |
| | 8 points, independent (negative common) | | Possible (slim type) | 1) | FA1-TH8X24RA1H20S1E | P.232 |
| | 16 points, independent (positive common) | | Possible (slim type) | 1) | FA1-TH16X24RA1H20S1E | P.234 |
| | 16 points, independent (negative common) | | Possible (slim type) | 1) | FA1-TH16X24RA1L20S1E | P.234 |
| | 16 points, independent | Screw (M3) | Possible (slim type) | 1) | FA-TH16XRA20S | P.238 |
| Module built-in type unit (24VDC) | 16 points/common, 2-wire type | Screw (M3) | Not possible | Not possible | FA-TH16X24D31 | P.239 |
| | | Screw (M3.5) | Not possible | Not possible | FA-TH16X24D31L | P.240 |
| Module built-in type unit (48VDC) | 16 points/common, 2-wire type | Screw (M3.5) | Not possible | Not possible | FA-TH16X48D31L | P.241 |
| Module built-in type unit (100VDC) | 16 points/common, 2-wire type | Screw (M3.5) | Not possible | Not possible | FA-TH16X100D31L | P.242 |
| Module built-in type unit (100VAC) | 16 points/common, 2-wire type | Screw (M3) | Not possible | Not possible | FA-TH16X100A31 | P.243 |
| | | Screw (M3.5) | Not possible | Not possible | FA-TH16X100A31L | P.244 |
| Module built-in type unit (200VAC) | 16 points/common, 2-wire type | Screw (M3) | Not possible | Not possible | FA-TH16X200A31 | P.245 |
| | | Screw (M3.5) | Not possible | Not possible | FA-TH16X200A31L | P.246 |

1): Only N/O contact and N/C contact modules can be mixed.

2): Only N/O contact, N/C contact, triac, transistor, and signal pass-through modules can be mixed.

3): Only N/O contact, N/C contact, triac, and transistor modules can be mixed.

Digital signal converters (terminal modules) for output signals

| | Control method | Connection method | Module | | Model | Refer to |
|-----------------------------------------------------|---------------------------------|-------------------------|-------------------------|---------------|---------------------|----------|
| | | | Replacement (Shape) | Mixing | | |
| Installation base unit (module selectable type) | 4 points, independent (sink) | Spring clamp | Possible (slim type) | 2) | FA1-TH4Y2SC20S1E | P.248 |
| | 8 points, independent (sink) | | Possible (slim type) | 2) | FA1-TH8Y2SC20S1E | P.250 |
| | 4 points, independent (source) | | Possible (slim type) | 2) | FA1-TH1E4Y2SC20S1E | P.248 |
| | 8 points, independent (source) | | Possible (slim type) | 2) | FA1-TH1E8Y2SC20S1E | P.250 |
| | 16 points, independent (sink) | | Possible (slim type) | 2) | FA1-TH16Y2SC20S1E | P.259 |
| | 16 points, independent (source) | | Possible (slim type) | 3) | FA1-TH1E16Y2SC20S1E | P.253 |
| Module pre-mounted type unit (N/O contact relay) | 16 points, independent (sink) | Spring clamp | Possible (slim type) | 2) | FA1-TH16Y2RA20S1E | P.254 |
| | 16 points, independent (source) | | Possible (slim type) | 3) | FA1-TH1E16Y2RA20S1E | P.255 |
| | 16 points, independent (sink) | Screw (M3) | Not possible | Not possible | FA-TH16YRA20 | P.262 |
| | | | Not possible | Not possible | FA-FXTH16YRA20 | P.282 |
| | | | Possible (slim type) | 2) | FA-TH16YRA20S | P.265 |
| | | | Possible (slim type) | 2) | FA-FXTH16YRA20S | P.280 |
| | 16 points, independent (source) | Screw (M3.5) | Possible (slim type) | 2) | FA-TH16YRA20SL | P.267 |
| | | | Possible (slim type) | 3) | FA1-TH1E16Y2RA20S | P.266 |
| | 16 points/common, 1-wire type | Screw (M3) | Possible (slim type) | Not possible | FA-TH16YRA11 | P.260 |
| | | | Not possible | Not possible | FA-TH16YRA11S | P.263 |
| | | | Possible (slim type) | Not possible | FA-FXTH16YRA11S | P.281 |
| Not possible | | | Not possible | FA-TH16YRA21 | P.261 | |
| 16 points/common, 2-wire type | | Possible (slim type) | Not possible | FA-TH16YRA21S | P.264 | |
| Module pre-mounted type unit (N/C contact relay) | 16 points, independent | Screw (M3.5) | Possible (slim type) | 2) | FA-TH16YRAB20SL | P.268 |
| Module pre-mounted type unit (C/O contact relay) | | Screw (M3) | Possible (slim type) | Not possible | FA-TH16YRAC20S | P.269 |

| | Control method | Connection method | Module | | Model | Refer to |
|-------------------------------------------|--------------------------------------------------------------|-------------------|----------------------|--------------|---------------------|----------|
| | | | Replacement (Shape) | Mixing | | |
| Module pre-mounted type unit (triac) | 16 points, independent (sink) | Spring clamp | Possible (slim type) | 2) | FA1-TH16Y1SR20S1E | P.256 |
| | 16 points, independent (source) | | Possible (slim type) | 3) | FA1-TH1E16Y1SR20S1E | P.257 |
| | 16 points, independent (sink) | Screw (M3) | Possible (slim type) | 2) | FA-TH16YSR20S | P.272 |
| | 16 points/common, 1-wire type | | Possible (slim type) | Not possible | FA-TH16YSR11S | P.270 |
| | 16 points/common, 2-wire type | | Possible (slim type) | Not possible | FA-TH16YSR21S | P.271 |
| Module pre-mounted type unit (transistor) | 16 points, independent (sink) | Spring clamp | Possible (slim type) | 2) | FA1-TH16Y1TR20S1E | P.258 |
| | 16 points, independent (source) | | Possible (slim type) | 3) | FA1-TH1E16Y1TR20S1E | P.252 |
| | 16 points/common, 1-wire type (sink) | Screw (M3) | Possible (slim type) | Not possible | FA-TH16YTL11S | P.273 |
| | 16 points/common, 2-wire type (sink) | | Possible (slim type) | Not possible | FA-TH16YTL21S | P.274 |
| | 16 points/common, 1-wire type (source) | | Possible (slim type) | Not possible | FA-TH16YTH11S | P.275 |
| | 16 points, independent (sink/source shared type) | | Possible (slim type) | Not possible | FA-TH16YTR20S | P.277 |
| | 16 points/common, 1-wire type (source) | | Possible (slim type) | Not possible | FA-THE16YTH11S | P.276 |
| | 16 points, independent (sink/source shared type) | | Possible (slim type) | 3) | FA-THE16YTR20S | P.279 |
| Module built-in type unit (transistor) | 16 points, independent (2A output) (sink/source shared type) | Screw (M3) | × | × | FA-TH16Y2TR20 | P.278 |

1): Only N/O contact and N/C contact modules can be mixed.
 2): Only N/O contact, N/C contact, triac, transistor, and signal pass-through modules can be mixed.
 3): Only N/O contact, N/C contact, triac, and transistor modules can be mixed.

Modules (for replacement/mixing)

Function type

| Type | Quantity | Model | Refer to |
|---------------------------------|----------|----------------|----------|
| 24VDC (relay isolation) | 1 | FA1-TM1X24RA | P.283 |
| | 2 | FA1-TM1X24RA-2 | P.283 |
| | 4 | FA1-TM1X24RA-4 | P.283 |
| 24VDC (photocoupler isolation) | 1 | FA1-TM1X24D | P.283 |
| | 2 | FA1-TM1X24D-2 | P.283 |
| | 4 | FA1-TM1X24D-4 | P.283 |
| 48VDC (photocoupler isolation) | 1 | FA1-TM1X48D | P.283 |
| | 2 | FA1-TM1X48D-2 | P.283 |
| | 4 | FA1-TM1X48D-4 | P.283 |
| 100VDC (photocoupler isolation) | 1 | FA1-TM1X100D | P.283 |
| | 2 | FA1-TM1X100D-2 | P.283 |
| | 4 | FA1-TM1X100D-4 | P.283 |
| 100VAC (photocoupler isolation) | 1 | FA1-TM1X100A | P.283 |
| | 2 | FA1-TM1X100A-2 | P.283 |
| | 4 | FA1-TM1X100A-4 | P.283 |
| 200VAC (photocoupler isolation) | 1 | FA1-TM1X200A | P.283 |
| | 2 | FA1-TM1X200A-2 | P.283 |
| | 4 | FA1-TM1X200A-4 | P.283 |
| Dummy (for dust protection) | 4 | FA1-TM1ND4 | P.283 |

Slim type

| Type | Quantity | Model | Refer to |
|----------------------------------------------|----------|----------------|----------|
| N/O contact relay (24VDC, 100 to 240VAC, 2A) | 2 | FA-NYP24WK2 | P.284 |
| | 4 | FA-NYP24WK4 | P.284 |
| N/C contact relay (24VDC, 100 to 240VAC, 2A) | 2 | FA-NYBP24WK2 | P.284 |
| | 4 | FA-NYBP24WK4 | P.284 |
| C/O contact relay (24VDC, 100 to 240VAC, 6A) | 4 | FA-LYCA024VSK4 | P.284 |
| Triac (30 to 240VAC, 1A) | 2 | FA-SN24A01FS2 | P.284 |
| | 4 | FA-SN24A01FS4 | P.284 |
| Transistor (3 to 30VDC, 1A) | 2 | FA-SN24D01HVS2 | P.284 |
| | 4 | FA-SN24D01HVS4 | P.284 |
| Signal pass-through | 2 | FA-SN00SS2 | P.284 |
| | 4 | FA-SN00SS4 | P.284 |

Module extraction tools

| Control method | Model | Refer to |
|------------------------------------------------------------------------------|------------|----------|
| Module extraction tool (quantity: 10) | FA-PULL10 | P.287 |
| Module extraction tool for C/O contact relay (FA-TH16YRAC20S) (quantity: 10) | FA-PULLW10 | P.287 |

Short-circuit bars

| Specifications | | Remarks | Model | Refer to |
|-------------------------------|-----------------------------------|----------------------------|----------------|----------|
| For M3 screw terminal block | Number of poles: 20, quantity: 20 | Without insulating coating | FA-BAR20P-20 | P.286 |
| | | With insulating coating | FA-BAR20PG-20 | P.286 |
| For M3.5 screw terminal block | Number of poles: 18, quantity: 20 | Without insulating coating | FA-BAR18PL-20 | P.286 |
| | | With insulating coating | FA-BAR18PGL-20 | P.286 |

Connection cables

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Refer to |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------|--------------|--------------------|-------------|
| MELSEC iQ-R/ MELSEC-Q series | Sink, branching on signal converter | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2V | P.162 |
| | | | | 1m | FA-CBL10FM2V | P.162 |
| | | | | 1.5m | FA-CBL15FM2V | P.162 |
| | | | | 2m | FA-CBL20FM2V | P.162 |
| | | | | 3m | FA-CBL30FM2V | P.162 |
| | | | | 5m | FA-CBL50FM2V | P.162 |
| | | | | 10m | FA-CBL100FM2V | P.162 |
| | Sink, branching on programmable controller | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2LV | P.163 |
| | | | | 1m | FA-CBL10FM2LV | P.163 |
| | | | | 2m | FA-CBL20FM2LV | P.163 |
| | | | | 3m | FA-CBL30FM2LV | P.163 |
| | | | | 5m | FA-CBL50FM2LV | P.163 |
| | Source, branching on signal converter | D-Sub37P | MIL 20P × 2 | 2m | FA-CBL20DM2FY | P.167 |
| | | | | 0.6m | FA-CBL06TMV20 | P.170 |
| MELSEC iQ-R/ MELSEC-Q series | - | Terminal block | MIL 20P | 1m | FA-CBL10TMV20 | P.170 |
| | | | | 2m | FA-CBL20TMV20 | P.170 |
| | | | | 3m | FA-CBL30TMV20 | P.170 |
| | | | | 0.6m | FA-FXCBL06MMH20 | P.175 |
| MELSEC iQ-F/ MELSEC-F series | Sink | MIL 20P | MIL 20P | 1m | FA-FXCBL10MMH20 | P.175 |
| | | | | 1.5m | FA-FXCBL15MMH20 | P.175 |
| | | | | 2m | FA-FXCBL20MMH20 | P.175 |
| | | | | 3m | FA-FXCBL30MMH20 | P.175 |
| | | | | 0.6m | FA2-CB1L06MM1H20E | P.176 |
| | Source | MIL 20P | MIL 20P | 1m | FA2-CB1L10MM1H20E | P.176 |
| | | | | 1.5m | FA2-CB1L15MM1H20E | P.176 |
| | | | | 2m | FA2-CB1L20MM1H20E | P.176 |
| | | | | 3m | FA2-CB1L30MM1H20E | P.176 |
| | Sink, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20 | P.177 |
| | | | | 2m | FA2-CB1LT20MM1H20 | P.177 |
| | | | | 3m | FA2-CB1LT30MM1H20 | P.177 |
| | Source, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20E | P.178 |
| | | | | 2m | FA2-CB1LT20MM1H20E | P.178 |
| | | | | 3m | FA2-CB1LT30MM1H20E | P.178 |
| | MELSEC iQ-R/ MELSEC-Q/ MELSEC-L/ MELSEC iQ-F series, CC-Link*, non-Mitsubishi PLC | Sink/source shared type | Discrete cable | MIL 20P | 0.6m | FA-CBL06M20 |
| 1m | | | | | FA-CBL10M20 | P.168 |
| 2m | | | | | FA-CBL20M20 | P.168 |
| Y terminal | | | MIL 20P | 1m | FA-CBL10YM20 | P.169 |
| | | | | 2m | FA-CBL20YM20 | P.169 |
| | | | | 3m | FA-CBL30YM20 | P.169 |
| | | | | 5m | FA-CBL50YM20 | P.169 |
| | | | | 0.6m | FA-CBL06MMH20 | P.174 |
| CC-Link/LT Digital signal converter (terminal module) | - | MIL 20P | MIL 20P | 1m | FA-CBL10MMH20 | P.174 |
| | | | | 2m | FA-CBL20MMH20 | P.174 |
| | | | | 3m | FA-CBL30MMH20 | P.174 |
| | | | | 5m | FA-CBL50MMH20 | P.174 |

*: CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, CC-Link

Related products

Network interface modules

| Supported network | Specifications | Dedicated cable | Model | Refer to |
|--------------------------------------------------------------------------------------------------------|------------------------------|----------------------|------------------|----------|
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) MODBUS/TCP | For digital signal converter | Input type | FA3-TH1M16XC-01C | P.322 |
| | | Output type (sink) | FA3-TH1M16Y-01C | P.322 |
| | | Output type (source) | FA3-TH1M16YE-01C | P.322 |
| | | Input type | FA3-TH1M16XC | P.322 |
| | | Output type (sink) | FA3-TH1M16Y | P.322 |
| | | Output type (source) | FA3-TH1M16YE | P.322 |
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) | For digital signal converter | Input type | FA3-TH1T16XC-01C | P.324 |
| | | Output type (sink) | FA3-TH1T16Y-01C | P.324 |
| | | Output type (source) | FA3-TH1T16YE-01C | P.324 |
| | | Input type | FA3-TH1T16XC | P.324 |
| | | Output type (sink) | FA3-TH1T16Y | P.324 |
| | | Output type (source) | FA3-TH1T16YE | P.324 |
| CC-Link | For digital signal converter | Input type | FA3-TH1C16XC-01C | P.326 |
| | | Output type (sink) | FA3-TH1C16Y-01C | P.326 |
| | | Output type (source) | FA3-TH1C16YE-01C | P.326 |
| | | Input type | FA3-TH1C16XC | P.326 |
| | | Output type (sink) | FA3-TH1C16Y | P.326 |
| | | Output type (source) | FA3-TH1C16YE | P.326 |

Connection cables

Cables for network interface modules

| Product | Remarks | Cable length | Model | Refer to |
|---------------------------------------|--------------------------------------------------------------------------|--------------|------------------|----------|
| Dedicated cable | A cable included with the product (FA3-□□-01C) | 0.1m | — | — |
| Extension cable for signal converter* | An optional cable required when a cable is not included with the product | 1m | FA3-CB2L10MM1H20 | P.320 |
| | | 2m | FA3-CB2L20MM1H20 | P.320 |
| | | 3m | FA3-CB2L30MM1H20 | P.320 |

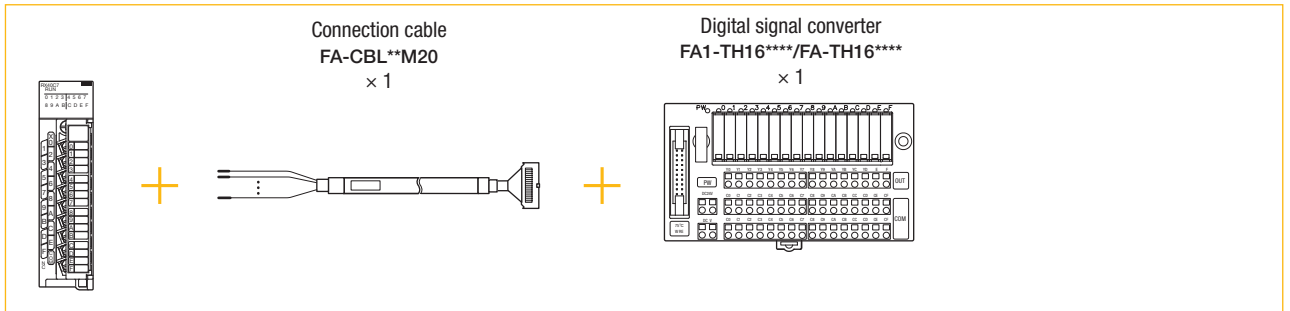
*: For information on other cables, please consult your local Mitsubishi representative.

Selection notes

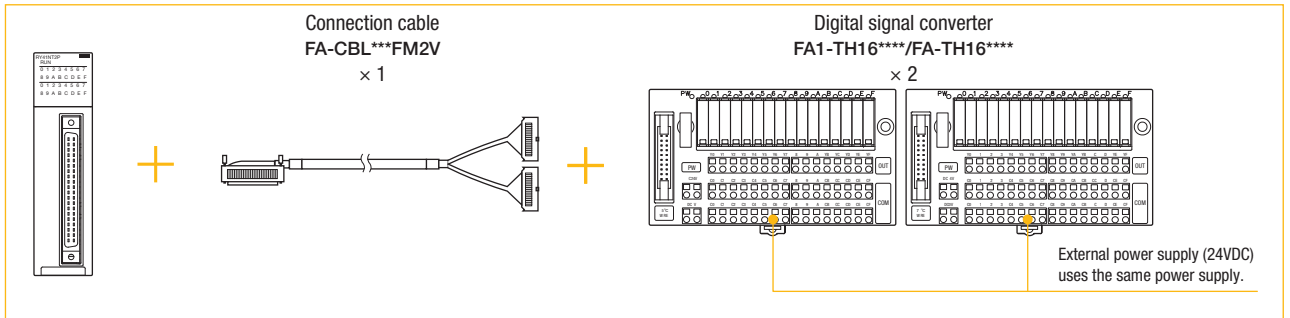
Number of cables and digital signal converters depending on the number of I/O points

- As a digital signal converter is a 16-point product, the number of converters used depends on the number of I/O points of the MELSEC I/O module used.

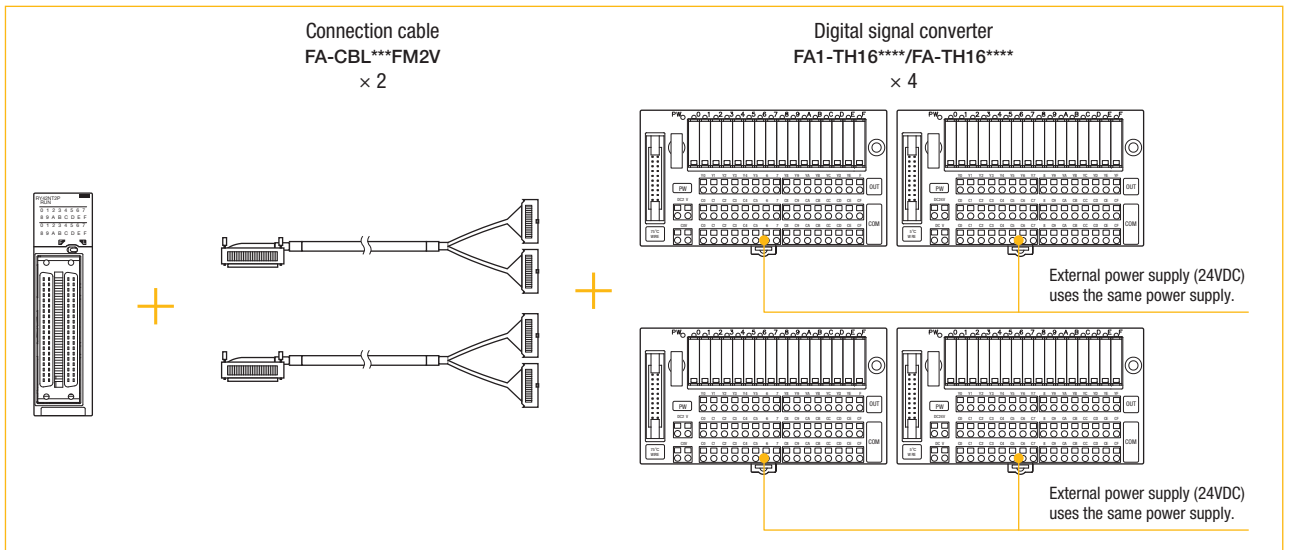
1) When using 16-point I/O module



2) When using 32-point I/O module



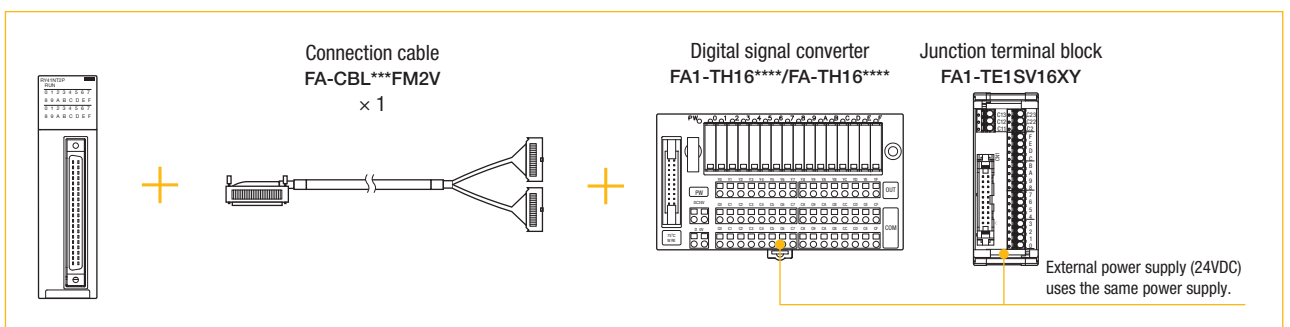
3) When using 64-point I/O module



Combination of a digital signal converter and a junction terminal block

- A 16-point digital signal converter can be used with a 16-point junction terminal block.

1) When using 32-point I/O module with a digital signal converter and a junction terminal block



Selection notes for digital signal converters for input signals

Selection of 24VDC input modules

(1) To make system maintenance-free

Select a photocoupler input module rather than a relay module having long life.

(FA-TH16X24D31, FA-TH16X24D31L, FA1-TH*X2SC20S1E+FA1-TM1X24D-*)

(2) When 24VDC input wiring is parallel to the power line or other wiring

Select a photocoupler input module whose off voltage is high. (FA-TH16X24D31, FA-TH16X24D31L, FA1-TH*X2SC20S1E+FA1-TM1X24D-*)

(3) To wire a module with a 2mm² cable compliant with the Japanese Industrial Standard (JIS C 2811)

Select a module using M3.5 screws on its terminal block. (FA-TH16X24D31L, FA1-TH*X2SC20S1E+FA1-TM1X24D-*)

(Notes: Wiring is possible by connecting a solderless terminal for 2mm² cable with an M3 screw.)

(4) To use an inexpensive 24VDC input module

Select the most inexpensive one from 24VDC input modules. (FA-TH16X24D31, FA1-TH*X2SC20S1E+FA1-TM1X24D-*)

(5) To insulate signals electrically by a relay

Select a relay input module. (FA-TH16XRA20S, FA1-TH*X2SC20S1E+FA1-TM1X24RA-*)

(6) To use a slim module

Select a 160mm wide relay input module. (FA-TH16XRA20S, FA1-TH*X2SC20S1E+FA1-TM1X24RA-*)

(7) When two or more 24VDC power supplies for input signals are used

Select a module having an independent input circuit. (FA-TH16XRA20S, FA1-TH*X2SC20S1E+FA1-TM1X24RA-*)

(8) To connect two cables from external devices such as a limit switch to a module

Select a module whose input specification is 16 points/common, 2-wire type, WET type.

(FA-TH16X24D31, FA-TH16X24D31L, FA1-TH*X2SC20S1E+FA1-TM1X24D-*)

Selection of 48VDC input modules

(1) When input wiring is parallel to the power line or other wiring in medium distance

Select a 48VDC photocoupler input module whose off voltage is high. (FA-TH16X48D31L, FA1-TH*X2SC20S1E+FA1-TM1X48D-*)

Selection of 100VDC input modules

(1) When input wiring is parallel to the power line or other wiring in long distance

Select a 100VDC photocoupler input module whose off voltage is high. (FA-TH16X100D31L, FA1-TH*X2SC20S1E+FA1-TM1X100D-*)

Selection of 100VAC input modules

(1) To wire a module with a 2mm² cable compliant with the Japanese Industrial Standard (JIS C 2811)

Select a module using M3.5 screws on its terminal block. (FA-TH16X100A31L)

(Notes: Wiring is possible by connecting a solderless terminal for 2mm² cable with an M3 screw.)

(2) To use an inexpensive 100VAC input module

Select an inexpensive one from 100VAC input modules. (FA-TH16X100A31, FA1-TH*X2SC20S1E+FA1-TM1X100A-*)

Selection of 200VAC input modules

(1) To wire a module with a 2mm² cable compliant with the Japanese Industrial Standard (JIS C 2811)

Select a module using M3.5 screws on its terminal block. (FA-TH16X200A31L)

(Notes: Wiring is possible by connecting a solderless terminal for 2mm² cable with an M3 screw.)

(2) To use an inexpensive 200VAC input module

Select an inexpensive one from 200VAC input modules. (FA-TH16X200A31, FA1-TH*X2SC20S1E+FA1-TM1X200A-*)

Selection of output modules with 5/12/24VDC load

<FA1-TH16Y2RA20S1E, FA1-TH16Y1TR20S1E, FA-TH16YRA11/11S, FA-TH16YRA21/21S, FA-TH16YRA20/20S/20SL, FA-TH16YRAB20SL, FA-TH16YRAC20S, FA-TH16YTL11S, FA-TH16YTH11S, FA-TH16YTL21S, FA-TH16YTR20S, FA-TH16Y2TR20, FA1-TH1E16Y2RA20S1E, FA1-TH1E16Y1TR20S1E, FA1-TH1E16Y2RA20S, FA-THE16YTH11S, FA-THE16YTR20S>

(1) To make system maintenance-free

Select a transistor output module rather than a relay module having long life.
(FA1-TH*16Y1TR20S1E, FA-TH*16YT***S, FA-TH16Y2TR20)

(2) To drive a load with high switching frequency, or to make load turning on/off time 1s or less

Select a transistor output module not having mechanical life.
(FA1-TH16Y1TR20S1E, FA1-TH1E16Y1TR20S1E, FA-TH16YTL11S, FA-TH16YTH11S, FA-TH16YTL21S, FA-TH16YTR20S, FA-TH16Y2TR20, FA-THE16YTH11S, FA-THE16YTR20S)
(When the transistor output is turned off, a leakage current of 0.1mA flows. Check the specifications to ensure that the load connected is turned off if such leakage current flows.)

(3) To drive a load with an inrush current (such as a lamp, a timer with the power supply of a DC-DC converter inside, or a counter)

Select a transistor output module rather than a relay module having the risk of contact welding.
(FA1-TH16Y1TR20S1E, FA1-TH1E16Y1TR20S1E, FA-TH16YTR20S, FA-TH16YTL11S, FA-TH16YTH11S, FA-TH16YTL21S, FA-TH16Y2TR20, FA-THE16YTH11S, FA-THE16YTR20S)

(4) To drive an inductive load with high DC time constant (L is large and R is small) (such as an electromagnetic contactor or a solenoid)

Select a transistor output module with a built-in zener diode as a protection circuit.
(FA1-TH16Y1TR20S1E, FA1-TH1E16Y1TR20S1E, FA-TH16YTL11S, FA-TH16YTH11S, FA-TH16YTL21S, FA-TH16YTR20S, FA-TH16Y2TR20, FA-THE16YTH11S, FA-THE16YTR20S)
(When the temperature in panel is 55°C and 8 points (every other point) are turned on at the same time, the following models can be used for a specified inductive load, and their life need not be considered, unlike a relay contact: FA1-TH16Y1TR20S1E, FA1-TH1E16Y1TR20S1E, FA-TH16YTL11S/TH11S, and FA-THE16YTH11S for a load current of 0.65A or less; FA-TH16YTL21S/TR20S and FA-THE16YTR20S for a load current of 0.7A or less; FA-TH16Y2TR20 for a load current of 2A or less)

(5) To wire a module with a 2mm² cable compliant with the Japanese Industrial Standard (JIS C 2811)

Select a module using M3.5 screws on its terminal block.
(FA-TH16YRA20SL/RAB20SL)
(Notes: Wiring is possible by connecting a solderless terminal for 2mm² cable with an M3 screw.)

(6) To use an inexpensive 24VDC output module

Select the most inexpensive one from 24VDC output modules.
(FA-TH16YRA11: Relay cannot be removed.)

(7) To use an inexpensive 24VDC transistor output module

Select the most inexpensive one from transistor output modules.
(FA-TH16Y2TR20)

(8) To insulate signals electrically by a relay

Select a relay output module.
(FA1-TH16Y2RA20S1E, FA1-TH1E16Y2RA20S1E, FA1-TH1E16Y2RA20S, FA-TH16YRA11/11S, FA-TH16YRA21/21S, FA-TH16YRA20/20S/20SL, FA-TH16YRAB20SL, FA-TH16YRAC20S)

(9) To use a slim module

Select a 115mm wide relay input module.
(FA-TH16YRA11, 11S, FA-TH16YTL11S, FA-TH16YTH11S, FA-THE16YTH11S)

(10) To use two or more 5/12/24VDC power supplies for output signals together

Select a module having an independent output circuit.
(FA1-TH16Y2RA20S1E, FA1-TH1E16Y2RA20S1E, FA1-TH16Y1TR20S1E, FA1-TH1E16Y1TR20S1E, FA1-TH1E16Y2RA20S, FA-TH16YRA20S/SL, FA-TH16YTR20S, FA-TH16Y2TR20, FA-THE16YTR20S)

(11) To drive 5VDC/12VDC/24VDC/100VAC/200VAC load together

Select a socket type module having an independent output circuit.
(FA1-TH16Y2SC20S1E, FA1-TH1E16Y2SC20S1E, FA-TH16YRA20S/SL)
(Relay/transistor/triac modules can be mixed.)

(12) To minimize the number of cables from modules in control panel to external load devices in system

Select a module whose specification is 16 points/common, 1-wire type. The common terminal must be wired on the device used.
(FA-TH16YRA11/11S, FA-TH16YTL11S, FA-TH16YTH11S, FA-THE16YTH11S)

(13) To connect two cables from external devices, such as a solenoid, directly to a module

Select a module whose output specification is 16 points/common, 2-wire type.
(FA-TH16YRA21/21S, FA-TH16YTL21S)

(14) To drive a sink load using a transistor output module

Select a sink type or independent type module.
(FA1-TH16Y1TR20S1E, FA-TH16YTL11S, FA-TH16YTL21S, FA-TH16YTR20S, FA-TH16Y2TR20)

(15) To drive a source load using a transistor output module

Select a source type or independent type module.
(FA1-TH1E16Y1TR20S1E, FA-TH16YTH11S, FA-TH16YTR20S, FA-TH16Y2TR20, FA-THE16YTH11S, FA-THE16YTR20S)

Selection of output modules with 100/200VAC load

<FA1-TH16Y2RA20S1E, FA1-TH16Y1SR20S1E, FA-TH16YRA11/11S, FA-TH16YRA21/21S, FA-TH16YRA20/20S/20SL, FA-TH16YRAB20SL, FA-TH16YRAC20S, FA-TH16YSR11S, FA-TH16YSR21S, FA-TH16YSR20S, FA1-TH1E16Y2RA20S1E, FA1-TH1E16Y1SR20S1E, FA1-TH1E16Y2RA20S>

(1) To make system maintenance-free

Select a triac output module rather than a relay module having long life.
(FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, FA-TH16YSR11S, FA-TH16YSR21S, FA-TH16YSR20S)

(2) To drive a load with high switching frequency

Select a triac output module not having mechanical life.
(FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, FA-TH16YSR11S, FA-TH16YSR21S, FA-TH16YSR20S)
(When the triac output is turned off, a leakage current (1.5mA for 100VAC or 3mA for 200VAC) flows. Check the specifications to ensure that the load connected is turned off if such leakage current flows.)

(3) To drive a load with an inrush current (such as a lamp, a timer with the AC/DC switching power supply inside, or a counter)

Select a triac output module rather than a relay module having the risk of contact welding.
(FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, FA-TH16YSR11S, FA-TH16YSR21S, FA-TH16YSR20S)

(4) To drive an inductive load with small power factor ($\cos\phi$ is small and L is large) (such as an electromagnetic contactor or a solenoid)

Select a triac output module with a built-in varistor in parallel with a capacitor + resistor as a protection circuit.
(FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, FA-TH16YSR11S, FA-TH16YSR21S, FA-TH16YSR20S)
(When the temperature in panel is 55°C and 8 points (every other point) are turned on at the same time, the following models can be used for a specified inductive load, and their life need not be considered, unlike a relay contact: FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, and FA-TH16YSR11S for a load current of 0.5A or less; FA-TH16YSR21S/20S for a load current of 0.55A or less)

(5) To wire a module with a 2mm² cable compliant with the Japanese Industrial Standard (JIS C 2811)

Select a module using M3.5 screws on its terminal block.
(FA-TH16YRA20SL/RAB20SL)
(Notes: Wiring is possible by connecting a solderless terminal for 2mm² cable with an M3 screw.)

(6) To use an inexpensive 100/200VAC output module

Select the most inexpensive one from 100/200VAC output modules.
(FA-TH16YRA11: Relay cannot be removed.)

(7) To use an inexpensive 100/200VAC triac output module

Select the most inexpensive one from triac output modules.
(FA-TH16YSR11S)

(8) To insulate signals electrically by a relay

Select a relay output module.
(FA1-TH16Y2RA20S1E, FA1-TH1E16Y2RA20S1E, FA1-TH1E16Y2RA20S, FA-TH16YRA11/11S, FA-TH16YRA21/21S, FA-TH16YRA20/20S/20SL)

(9) To use a slim module

Select a 115mm wide relay input module.
(FA-TH16YRA11/S, FA-TH16YSR11S)

(10) To use two or more 100/200VAC power supplies for output signals together

Select a module having an independent output circuit.
(FA1-TH16Y2RA20S1E, FA1-TH1E16Y2RA20S1E, FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, FA1-TH1E16Y2RA20S, FA-TH16YRA20/S/SL, TH16YSR20S)

(11) To drive 5VDC/12VDC/24VDC/100VAC/200VAC load together

Select a socket type module having an independent output circuit.
(FA1-TH16Y2SC20S1E, FA1-TH1E16Y2SC20S1E, FA-TH16YRA20S/SL)
(Relay/transistor/triac modules can be mixed.)

(12) To minimize the number of cables from modules in control panel to external load devices in system

Select a module whose specification is 16 points/common, 1-wire type. The common terminal must be wired on the device used.
(FA-TH16YRA11/11S, FA-TH16YSR11S)

(13) To connect two cables from external devices, such as a solenoid, directly to a module

Select a module whose output specification is 16 points/common, 2-wire type.
(FA-TH16YRA21/21S, FA-TH16YSR21S)

Precautions for use

Precautions for use of 24VDC N/O contact relay input modules

(1) Relay switching frequency

Use the module with a maximum input signal switching frequency of one-second or longer on, and one-second or longer off.

(2) Surge/inductive voltage to the input side power cable

Do not install the 24VDC input signal cable together with the main circuit lines or power cables.

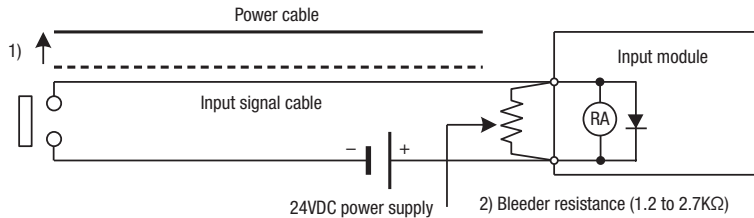
Keep a distance of 100mm or more between them.

If they are installed together, an input signal may turn/remain on/off improperly due to the inductive voltage from the main circuit lines or power cables.

Or, a diode, inserted in parallel with a relay in the module, may be damaged due to a high surge voltage generated when the main circuit lines or power cables turns on/off.

Countermeasures

- 1) Keep an input signal cable away from the main circuit lines or power cables. (Use different cables for an input signal, the main circuit, power supply, and others, without bundling them.)
- 2) Insert a bleeder resistance in parallel with input signals to reduce input impedance of input signals.
- 3) Select a module whose off voltage is high for input signals.
(Photocoupler input modules: FA-TH16X24D31, FA-TH16X24D31L, FA1-TH*X2SC20S1E+FA1-TM1X24D-*)
- 4) Select a 48/100VDC input module.
(Photocoupler input modules: FA-TH16X48D31L, FA-TH16X100D31L, FA1-TH*X2SC20S1E+FA1-TM1X48D-*/FA1-TM1X100D-*)



- Try bleeder resistances with larger resistance value then smaller one, and select the one hardly causing malfunctions.

Precautions for use of relay output modules

<FA1-TH16Y2RA20S1E, FA1-TH1E16Y2RA20S1E, FA1-TH1E16Y2RA20S, FA-TH16YRA11/11S/20/20S/21/21S/20SL, FA-TH16YRAB20SL, FA-TH16YRAC20S>

(1) Relay switching frequency

Use the module with a maximum output signal switching frequency of one-second or longer on, and one-second or longer off.

(2) Relay contact locking

When the relay turns on while using any of the loads shown in the following table such as a timer or counter using a switching control AC/DC or DC/DC power supply and incandescent lamp, an inrush current may flow and cause contact welding, or a locking phenomenon may occur in the contact due to transition (where the contact remains on and do not return to off).

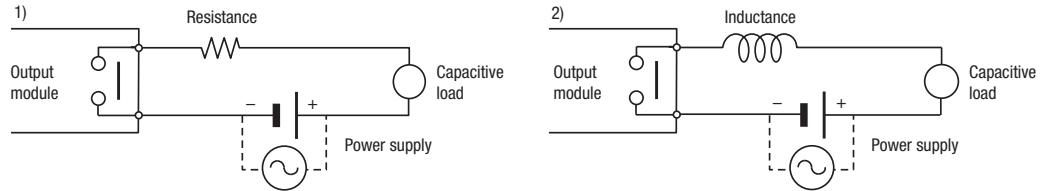
| Load type | Inrush current/Rated current | Inrush current waveform |
|---------------------------|------------------------------|-------------------------|
| Resistance | 1 times | |
| Incandescent lamp | Approx. 10× to 15× | |
| Capacitor (Note 1) | Approx. 20× to 50× | |
| Solenoid | Approx. 10× to 20× | |
| Electromagnetic contactor | Approx. 3× to 10× | |
| Fluorescent lamp | Approx. 5× to 15× (Note 2) | |
| Motor | Approx. 5× to 15× | |
| Transformer | Approx. 5× to 15× | |
| Mercury lamp | Approx. 3× (Note 2) | |

Note 1: The capacitor load includes the stray capacitance from capacitors and wiring, and the capacitive load of timers, counters, etc. (in which a switching control AC/DC or DC/DC power supply is used).

Note 2: With a discharge lamp such as a mercury lamp and fluorescent lamp, especially when it is of a high power factor type and its power supply impedance is low, a current 20 to 40 times greater may flow.

Countermeasures

- 1) Insert a resistor in series with the load.
- 2) Insert inductance in series with the load.
- 3) For DC load, use the transistor output module FA-TH16Y2TR20 with the maximum inrush current of 8A or less. (As a reference, module's element: maximum inrush current of 20A, for DC load, in the surrounding temperature of 25°C.)
- 4) For AC load, use the triac output module FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, FA-TH16YSR11S/21S/20S with the maximum inrush current of 25A or less. (As a reference, module's element: maximum inrush current of 50A, for 60Hz sine wave 1 full cycle, peak value, non-repetitive, in the surrounding temperature of 25°C.)

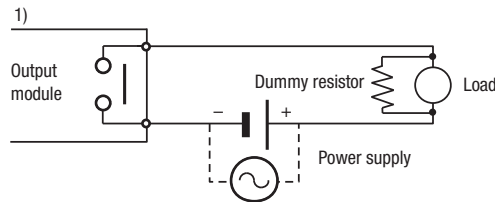


(3) Switching of slight current load

When a slight current load (5VDC or less or 1mA or less) is switched by an output relay, the load may not turn on even if the relay turns on due to poor contact of the relay contact.

Countermeasures

- 1) Insert a dummy resistor in parallel with the load.



- Increase the load current at relay on to prevent poor contact.

(4) Service life of relay contact

When an output relay module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a transistor output module or triac output module.

The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.

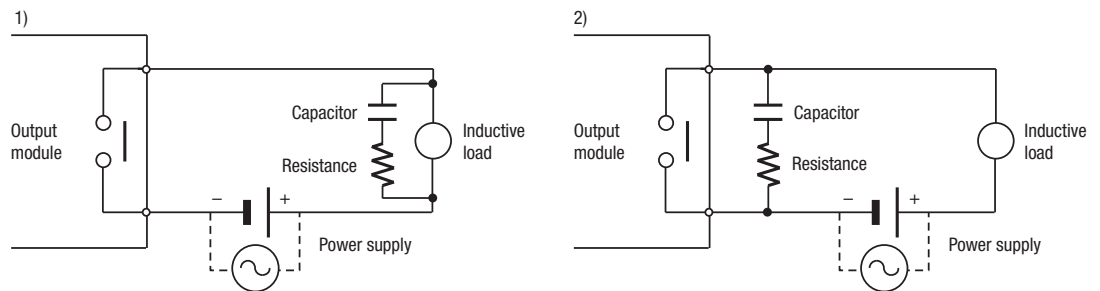
When an inductive load such as an electromagnetic contactor and solenoid is disconnected, a high counter-electromotive force occurs between contacts, generating an arc discharge. If the switching current is high, the power factor is low, or a load whose time constant is high is connected, the life becomes short. Consideration is required in such a case.

For inductive loads, we recommend using a protection circuit based on the surge absorbing circuit in the figure below.

Countermeasures

- 1) Insert a capacitor + resistor in parallel with the load (applicable to AC and DC loads).
- 2) Insert a capacitor + resistor in parallel with the contact (applicable to AC (Note1) and DC loads).

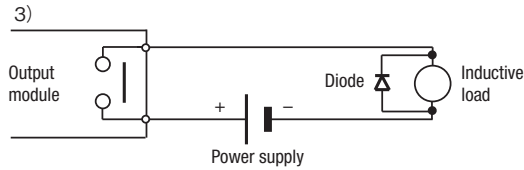
Note 1: For use with AC voltage, check that the load impedance is adequately smaller than the C and R impedance.
(When the contact is off, a leakage current flows through C and R. The load may turn on or the load once turned on may not turn off.)



- A capacitor can suppress an electrical discharge at contact off, and a resistor can limit a current at contact on.
- The guidelines for element selection are as described below. Note, however, that the values differ according to variations in load properties and characteristics. Check the values via experiments.
Capacitor: 0.5 to 1 (μF) for a contact current of 1A, Resistor: 0.5 to 1 (Ω) for a contact voltage of 1V
- Use a capacitor whose withstand voltage is 200 to 300V in general. For an AC circuit, use an AC capacitor without polarity.
- If the load is a relay or solenoid, the recovery time is delayed. Caution is required.

Countermeasures

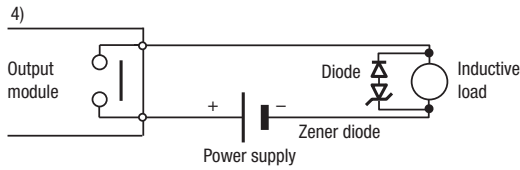
3) Insert a diode in parallel with the load (applicable to DC loads).



- When the contact turns off, the parallel diode causes the energy stored in the inductive load to flow to the load in the form of current, so that the energy is consumed by the resistance of the load as Joule heat.
- Use a diode whose reverse breakdown voltage is 10 times or more greater than the power supply voltage and whose forward current is equal to or greater than the load current.
- In this method, the recovery time delays more compared to the capacitor + resistor method.

Countermeasures

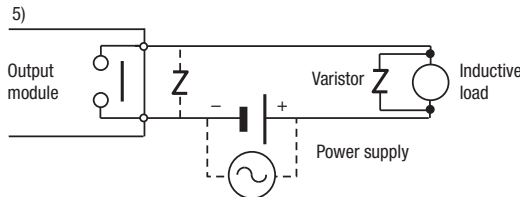
4) Insert a diode + Zener diode in parallel with the load (applicable to DC loads).



- This method is effective if used in cases in which the parallel diode in 3) results in excessive delay in the recovery time.
- Use a Zener diode whose Zener voltage is equal to or greater than the power supply voltage.

Countermeasures

5) Insert a varistor in parallel with the load or in parallel with the contact (applicable to AC or DC loads).



- Use the constant voltage characteristics of a varistor to ensure that a high voltage is not applied to the contact.
- Insert a varistor between the loads when the power supply voltage is 24 to 48V, or between the contacts when the power supply voltage is 100 to 200V.
- Select a varistor cut voltage V_c within the following conditions. (Setting V_c too high weakens the effect)
For DC power supply: $V_c > \text{Power supply voltage} \times 1.5$; For AC power supply: $V_c > \text{Power supply voltage} \times \sqrt{2} \times 1.5$
- If the load is a relay or solenoid, the recovery time is delayed slightly.

Countermeasures

6) To drive an inductive load with high DC time constant, use a transistor output module with a built-in zener diode as a protection circuit.

- When the temperature in panel is 55°C and 8 points (every other point) are turned on at the same time, the following models can be used for a specified inductive load, and their life need not be considered, unlike a relay contact:
FA-TH16YTL11S/TH11S and FA-THE16YTH11S for a load current of 0.65A or less; FA1-TH16Y1TR20S1E, FA1-TH1E16Y1TR20S1E, FA-TH16YTL21S/TR20S, and FA-THE16YTR20S for a load current of 0.7A or less; FA-TH16Y2TR20S for a load current of 2A or less

7) To drive an inductive load with small power factor, use a triac output module with a built-in varistor in parallel with a capacitor + resistor as a protection circuit.

- When the temperature in panel is 55°C and 8 points (every other point) are turned on at the same time, the following models can be used for a specified inductive load, and their life need not be considered, unlike a relay contact:
FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, and FA-TH16YSR11S for a load current of 0.5A or less; FA-TH16YSR21S/20S for a load current of 0.55A or less

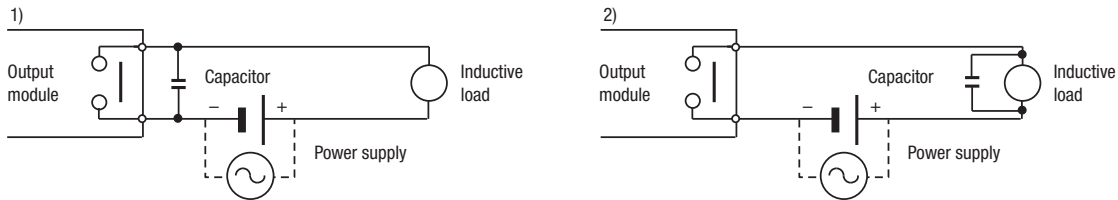
(5) Precautions

1) Avoid protection circuits that connect a capacitor in parallel with a contact.

Connecting a capacitor in parallel with a contact is extremely effective in arc extinction at the time of disconnection. However, because electric charge is stored when the contact is off and a short-circuit current of the capacitor flows when the contact turns on, contact welding is likely to occur easily.

2) Avoid protection circuits that connect a capacitor in parallel with an inductive load.

Connecting a capacitor in parallel with an inductive load is extremely effective in arc extinction at the time of disconnection. However, because the charged current from the capacitor flows when the contact turns on, contact welding is likely to occur easily.



3) Install a protection circuit near the load or relay contact (module).

When a protection circuit is installed far away from the load or relay contact, the effect of the protection circuit cannot be adequately exhibited. As a rough distance, install the circuit within 50cm.

Precautions for use of triac output modules

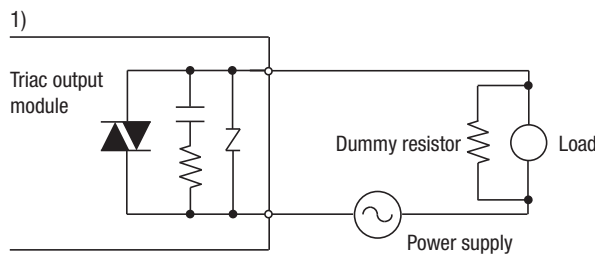
<FA1-TH16Y1SR20S1E, FA1-TH1E16Y1SR20S1E, FA-TH16YSR11S/20S/21S>

(1) Leakage current at off for a triac output module

As a triac module has a built-in varistor in parallel with a capacitor + resistor as a protection circuit, a leakage current at off (1.5mA for 100VAC, 60Hz; 3mA for 200VAC, 60Hz) flows when the output is turned off. Due to this, the load may turn on when the output is off or may remain on when the output turns off.

Countermeasures

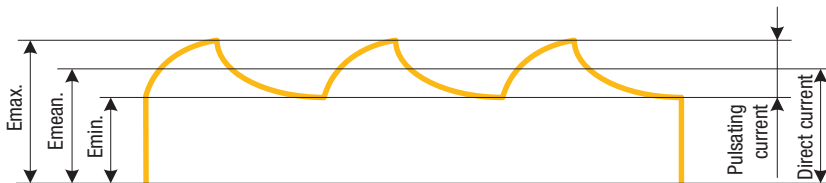
1) Insert a dummy resistor in parallel with the load.



- The leakage current in the triac module flows into a dummy resistor so that the leakage current to a load is reduced, preventing the module from malfunction of the load.
- Reduce the resistance value of the dummy resistor in the descending order, and connect a resistor whose load operates properly.
- When selecting a load, check that the leakage current in the triac module does not cause a malfunction.

Precautions for a DC power supply for a digital signal converter

(1) The ripple ratio of the power supply must be 5% or less.



$$\text{Ripple ratio (\%)} = \frac{E_{\text{max.}} - E_{\text{min.}}}{E_{\text{mean.}}} \times 100\%$$

- E_{max.} = Maximum value of pulsating current
- E_{mean.} = Mean value of pulsating current
- E_{min.} = Minimum value of pulsating current

Precautions for an AC power supply for a digital signal converter

(1) The waveform distortion rate of the power supply must be 5% or less.

Specifications

Digital signal converters (terminal modules) for input signals



Spring clamp terminal type, 4-point N/O contact relay input
[Pre-mounted module: Slim type]

FA1-TH4X24RA1L20S1E, FA1-TH4X24RA1H20S1E

- This type of signal converter can mount optimal modules for each connected devices, such as switches and lamps, because different digital signals can be specified for each point. Also, distributed installation is possible by selecting the type (number of modules).
 - The number of unused points can be reduced by selecting the optimal installation base unit (4-point, 8-point, or 16-point).
 - Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
 - This type does not require screws.
- Wires can be directly pushed into the conductive terminals without using a screwdriver.

Related materials Selection notes **P.222** Precautions for use **P.226**

Related products Replacement modules **P.284** Module extraction tool **P.287**

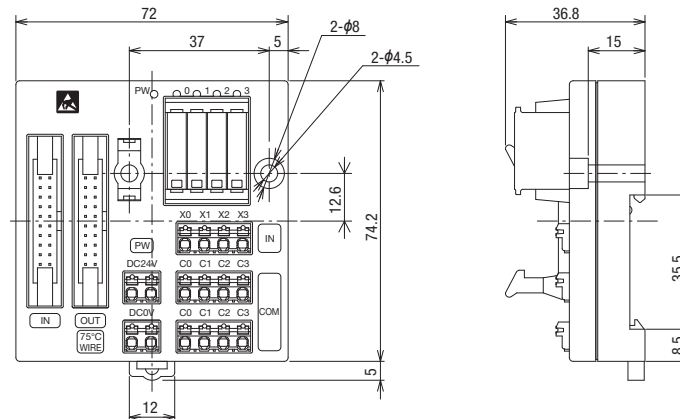
Specifications

| Item | FA1-TH4X24RA1L20S1E | FA1-TH4X24RA1H20S1E | |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Pre-mounted module | FA-NYP24WK* | | |
| Connectable programmable controller module | Positive common, 24VDC input module | | |
| Load-side wiring method | Positive common input | Negative common input | |
| No. of points | 4 | | |
| Wiring method for common | Independent common | | |
| Isolation method | Relay | | |
| External power supply | 24VDC $\pm 10\%$ (ripple rate within 5%, CLASS 2 or SELV + LIM) | | |
| Module current consumption | Approx. 3mA at 24VDC (not including current consumption of modules mounted and programmable controller) | | |
| Operating voltage range | 21.6 to 26.4VDC (24VDC $\pm 10\%$ (ripple rate within 5%), CLASS 2 or SELV + LIM) | | |
| Maximum number of simultaneous on points | 100% (5-way installation) | | |
| On voltage/On current | 19.2VDC or more/8.1mA or more | | |
| Off voltage/Off current | 2.4VDC or less/1.0mA or less | | |
| Input impedance | Approx. 2.2k Ω | | |
| Response time (excluding programmable controller response time) | OFF \rightarrow ON ON \rightarrow OFF | 10ms or less 12ms or less | |
| Minimum switching load | 24VDC, 1mA or more | | |
| Maximum switching frequency (ON for 1 second or longer and OFF for 1 second or longer) | 1800 times/hour | | |
| Mechanical life | 20 million times or more | | |
| Electrical life | 100000 times or more when energized by 24VDC, 100mA | | |
| Withstand voltage, insulation resistance | Between inputs, between external power supply and input: 510VACrms/minute (altitude 0 to 2000m), 10M Ω or more | | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1 μ s (based on a noise simulator with a noise frequency of 25 to 60Hz) | | |
| Operation display | The LED turns on when the power is on and input is on. | | |
| Socket | Provided (Relay modules are replaceable.) | | |
| No. of times to replace module | 50 times | | |
| Module mixing | Possible | | |
| Terminal block (Spring clamp terminal block) | No. of terminals | 16P (power supply: 4, input: 12) | |
| | Applicable wire (stranded/solid wire) | Without ferrule | 0.2 to 1.5mm ² (24 to 16AWG), copper wire with a temperature rating of 75°C or more |
| | | With ferrule | 0.08 to 0.75mm ² (28 to 18AWG), copper wire with a temperature rating of 75°C or more |
| Wire strip length | | 8mm | |
| Module installation | Screw | M4 \times 0.7mm \times 22mm or more | |
| | DIN rail | Tightening torque range: 78 to 118N-cm (8 to 12kgf-cm) Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al | |
| Weight | | Approx. 105g | |

External dimensions

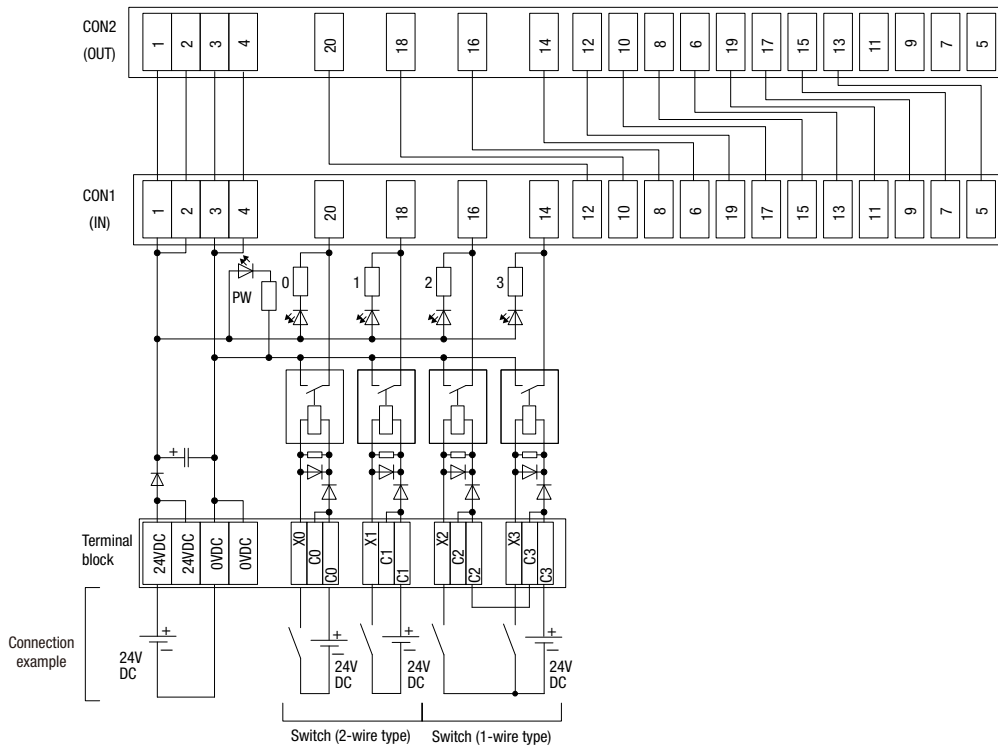
- Positive common: FA1-TH4X24RA1L20S1E
- Negative common: FA1-TH4X24RA1H20S1E

(Unit: mm)

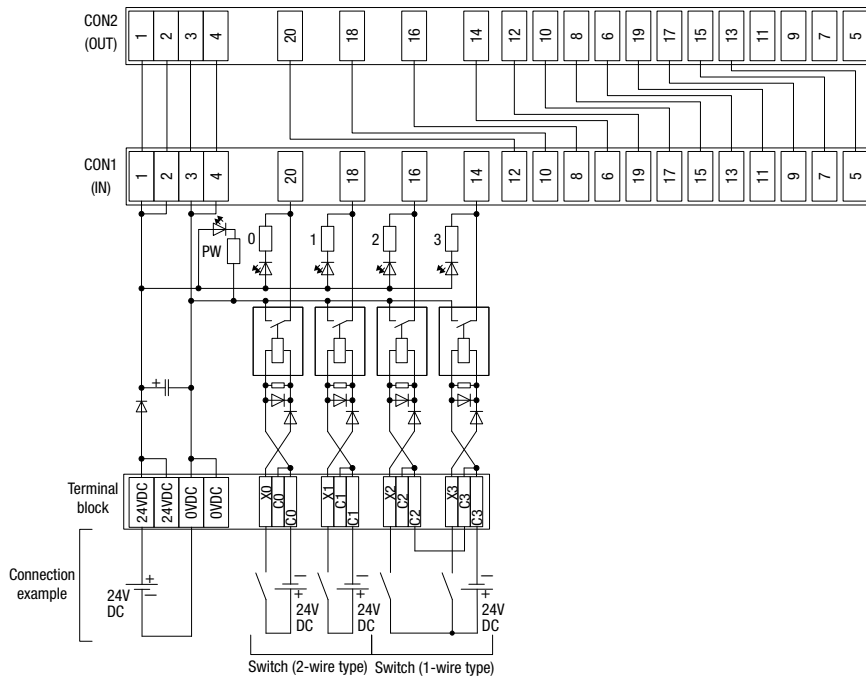


Connection diagram

- Positive common: FA1-TH4X24RA1L20S1E



- Negative common: FA1-TH4X24RA1H20S1E





Spring clamp terminal type, 8-point N/O contact relay input [Pre-mounted module: Slim type]

FA1-TH8X24RA1L20S1E, FA1-TH8X24RA1H20S1E

- This type of signal converter can mount optimal modules for each connected devices, such as switches and lamps, because different digital signals can be specified for each point. Also, distributed installation is possible by selecting the type (number of modules).
 - The number of unused points can be reduced by selecting the optimal installation base unit (4-point, 8-point, or 16-point).
 - Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
 - This type does not require screws.
- Wires can be directly pushed into the conductive terminals without using a screwdriver.

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

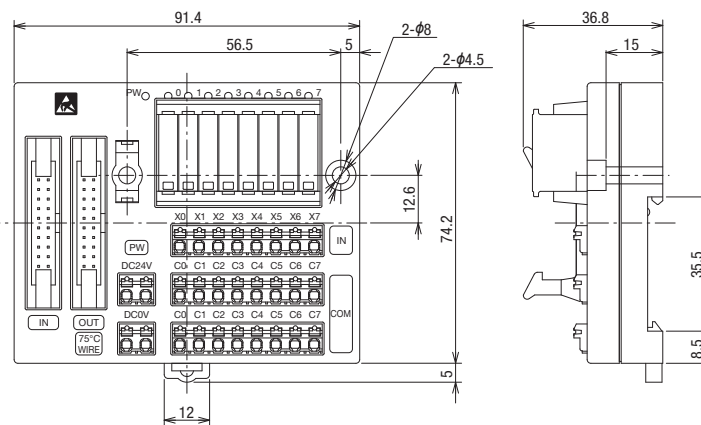
Specifications

| Item | FA1-TH8X24RA1L20S1E | FA1-TH8X24RA1H20S1E | |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Pre-mounted module | FA-NYP24WK* | | |
| Connectable programmable controller module | Positive common, 24VDC input module | | |
| Load-side wiring method | Positive common input | Negative common input | |
| No. of points | 8 | | |
| Wiring method for common | Independent common | | |
| Isolation method | Relay | | |
| External power supply | 24VDC ±10% (ripple rate within 5%, CLASS 2 or SELV + LIM) | | |
| Module current consumption | Approx. 5mA at 24VDC (not including current consumption of modules mounted and programmable controller) | | |
| Operating voltage range | 21.6 to 26.4VDC (24VDC ±10% (ripple rate within 5%), CLASS 2 or SELV + LIM) | | |
| Maximum number of simultaneous on points | 100% (5-way installation) | | |
| On voltage/On current | 19.2VDC or more/8.1mA or more | | |
| Off voltage/Off current | 2.4VDC or less/1.0mA or less | | |
| Input impedance | Approx. 2.2kΩ | | |
| Response time (excluding programmable controller response time) | OFF → ON ON → OFF | 10ms or less 12ms or less | |
| Minimum switching load | 24VDC, 1mA or more | | |
| Maximum switching frequency (ON for 1 second or longer and OFF for 1 second or longer) | 1800 times/hour | | |
| Mechanical life | 20 million times or more | | |
| Electrical life | 100000 times or more when energized by 24VDC, 100mA | | |
| Withstand voltage, insulation resistance | Between inputs, between external power supply and input: 510VACrms/minute (altitude 0 to 2000m), 10MΩ or more | | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | | |
| Operation display | The LED turns on when the power is on and input is on. | | |
| Socket | Provided (Relay modules are replaceable.) | | |
| No. of times to replace module | 50 times | | |
| Module mixing | Possible | | |
| Terminal block (Spring clamp terminal block) | No. of terminals | 28P (power supply: 4, input: 24) | |
| | Applicable wire (stranded/solid wire) | Without ferrule | 0.2 to 1.5mm ² (24 to 16AWG), copper wire with a temperature rating of 75°C or more |
| | | With ferrule | 0.08 to 0.75mm ² (28 to 18AWG), copper wire with a temperature rating of 75°C or more |
| Wire strip length | | 8mm | |
| Module installation | Screw | M4 × 0.7mm × 22mm or more | |
| | DIN rail | Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) | |
| | | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al | |
| Weight | Approx. 145g | | |

External dimensions

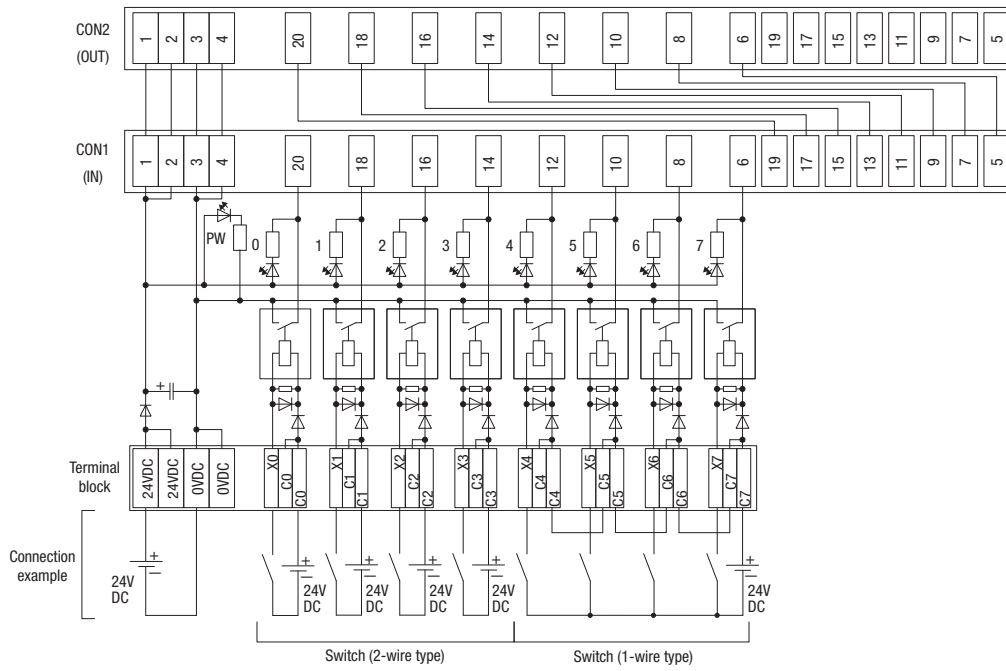
- Positive common: FA1-TH8X24RA1L20S1E
- Negative common: FA1-TH8X24RA1H20S1E

(Unit: mm)

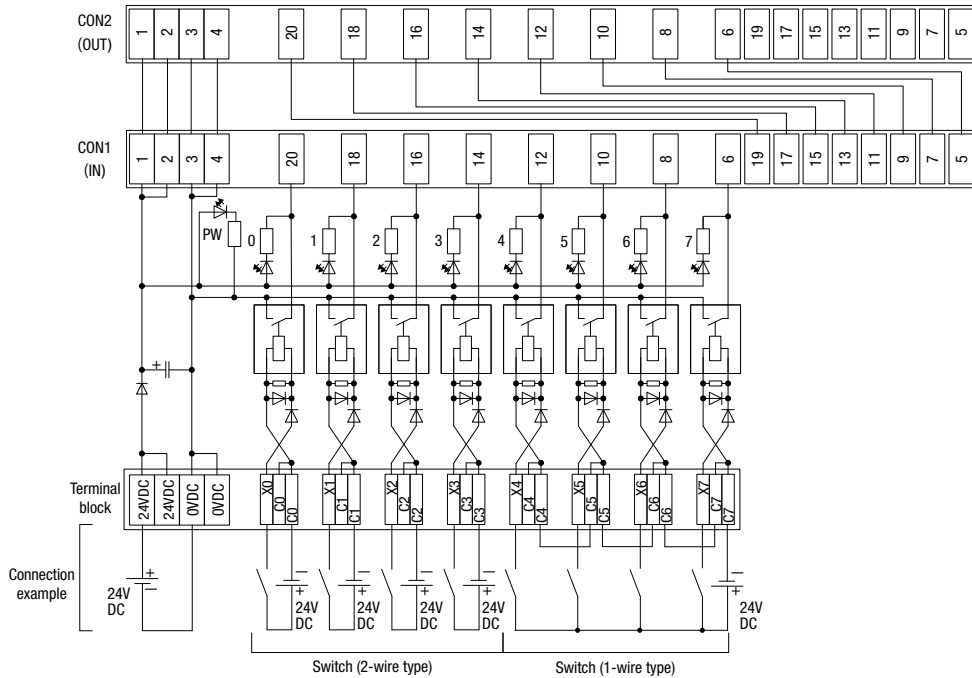


Connection diagram

- Positive common: FA1-TH8X24RA1L20S1E



- Negative common: FA1-TH8X24RA1H20S1E





Spring clamp terminal type, 16-point N/O contact relay input [Pre-mounted module: Slim type]

FA1-TH16X24RA1L20S1E, FA1-TH16X24RA1H20S1E

- This type of signal converter can mount optimal modules for each connected devices, such as switches and lamps, because different digital signals can be specified for each point. Also, distributed installation is possible by selecting the type (number of modules).
 - The number of unused points can be reduced by selecting the optimal installation base unit (4-point, 8-point, or 16-point).
 - Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
 - This type does not require screws.
- Wires can be directly pushed into the conductive terminals without using a screwdriver.

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

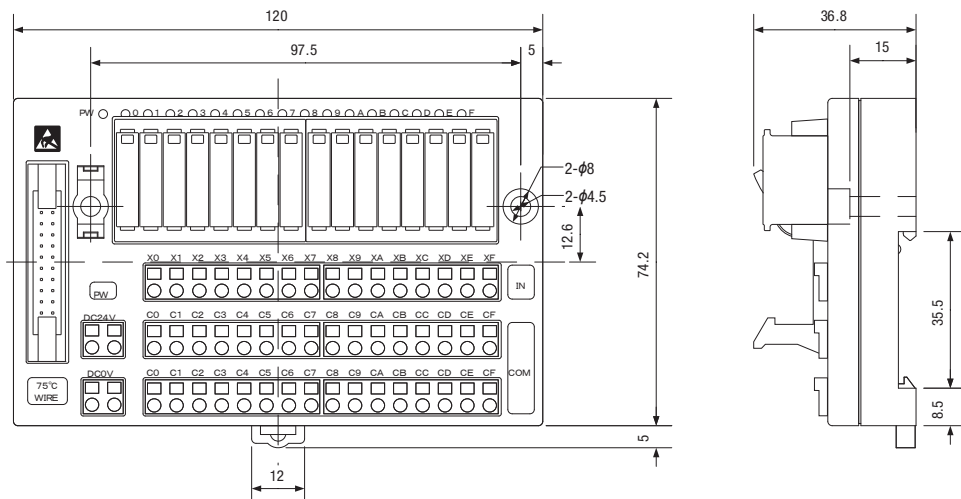
Specifications

| Item | FA1-TH16X24RA1L20S1E | FA1-TH16X24RA1H20S1E |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pre-mounted module | FA-NYP24WK* | |
| Connectable programmable controller module | Positive common, 24VDC input module | |
| Load-side wiring method | Positive common input | Negative common input |
| No. of points | 16 | |
| Wiring method for common | Independent common | |
| Isolation method | Relay | |
| External power supply | 24VDC ±10% (ripple rate within 5%, CLASS 2 or SELV + LIM) | |
| Module current consumption | Approx. 10mA at 24VDC (not including current consumption of modules mounted and programmable controller) | |
| Operating voltage range | 21.6 to 26.4VDC (24VDC ±10% (ripple rate within 5%), CLASS 2 or SELV + LIM) | |
| Maximum number of simultaneous on points | 100% (5-way installation) | |
| On voltage/On current | 19.2VDC or more/8.1mA or more | |
| Off voltage/Off current | 2.4VDC or less/1.0mA or less | |
| Input impedance | Approx. 2.2kΩ | |
| Response time (excluding programmable controller response time) | OFF → ON: 10ms or less ON → OFF: 12ms or less | |
| Minimum switching load | 24VDC, 1mA or more | |
| Maximum switching frequency (ON for 1 second or longer and OFF for 1 second or longer) | 1800 times/hour | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more when energized by 24VDC, 100mA | |
| Withstand voltage, insulation resistance | Between inputs, between external power supply and input: 510VACrms/minute (altitude 0 to 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Socket | Provided (Relay modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block (Spring clamp terminal block) | No. of terminals | 52P (power supply: 4, input: 48) |
| | Applicable wire (stranded/solid wire) | Without ferrule: 0.2 to 1.5mm ² (24 to 16AWG), copper wire with a temperature rating of 75°C or more With ferrule: 0.08 to 0.75mm ² (28 to 18AWG), copper wire with a temperature rating of 75°C or more |
| | Wire strip length | 8mm |
| Module installation | Screw | M4 × 0.7mm × 22mm or more Tightening torque range: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al |
| Weight | Approx. 220g | |

External dimensions

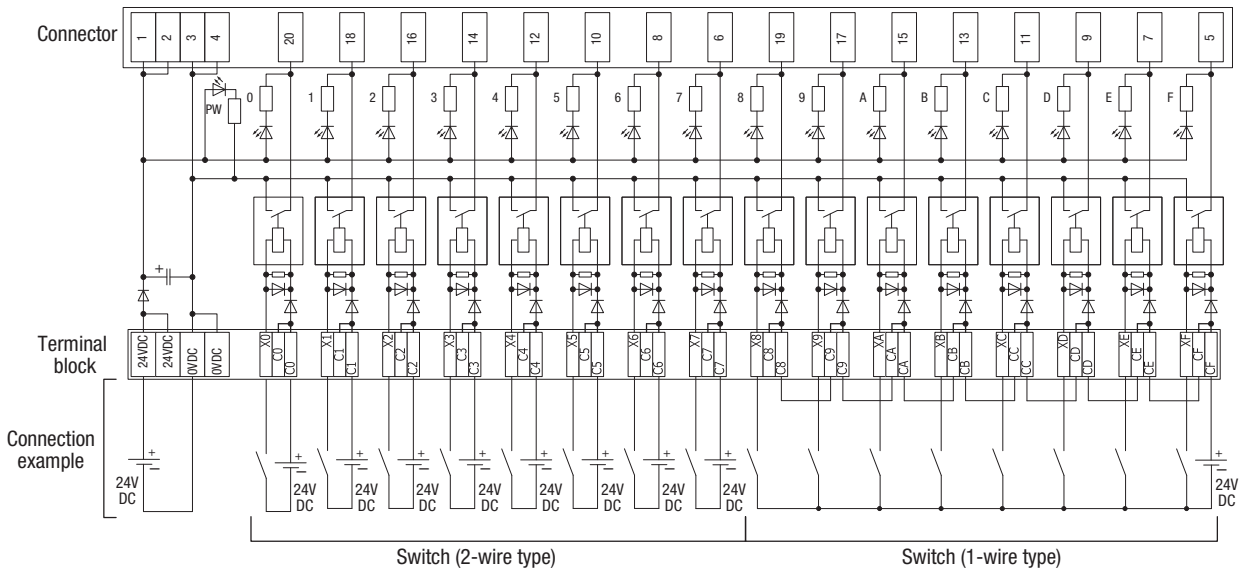
- Positive common: FA1-TH16X24RA1L20S1E
- Negative common: FA1-TH16X24RA1H20S1E

(Unit: mm)

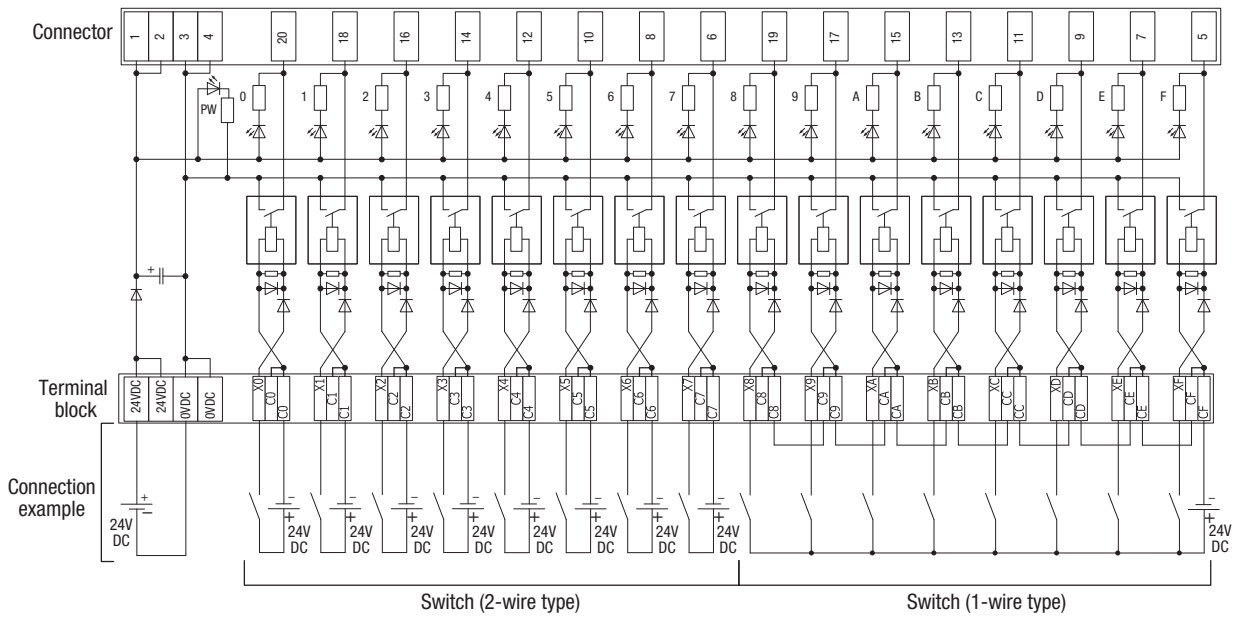


Connection diagram

- 16-point unit (24VDC, positive common), FA1-TH16X24RA1L20S1E



- 16-point unit (24VDC, negative common), FA1-TH16X24RA1H20S1E





Spring clamp terminal type installation base unit, 4/8-point [Pre-mounted module: Function type]

FA1-TH4X2SC20S1E, FA1-TH8X2SC20S1E

- This type of signal converter can mount optimal modules for each connected devices, such as switches and lamps, because different digital signals can be specified for each point. Also, distributed installation is possible by selecting the type (number of modules).
 - The number of unused points can be reduced by selecting the optimal installation base unit (4-point or 8-point).
 - Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
 - This type does not require screws.
- Wires can be directly pushed into the conductive terminals without using a screwdriver.

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.283 Module extraction tool P.287

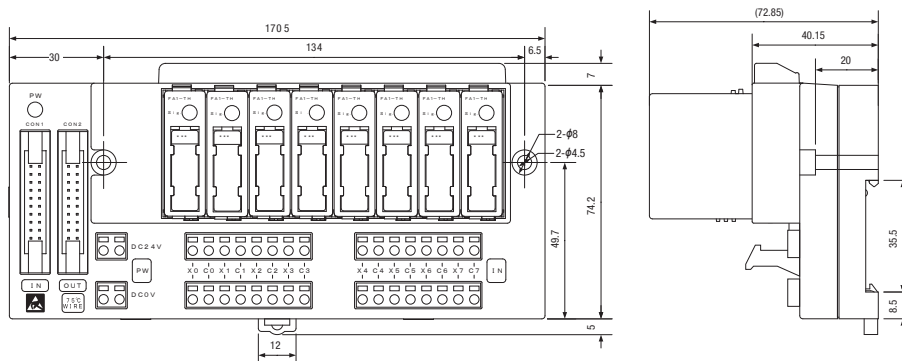
Specifications

| Item | | FA1-TH4X2SC20S1E | FA1-TH8X2SC20S1E |
|-------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| No. of points, input device No. | | 4, X0 to X3 | 8, X0 to X7 |
| Electrical and mechanical characteristics | | Depending on the module used | |
| Wiring method for common | | Independent common | |
| Maximum number of simultaneous on points | | 100% (5-way installation) | |
| External power supply | | 24VDC ±10% (ripple rate within 5%, CLASS 2 or SELV + LIM) | |
| Module current consumption | | Approx. 10mA at 24VDC (not including current consumption of modules mounted and programmable controller) | |
| Withstand voltage, insulation resistance | | 2300VACrms/minute (altitude 0 to 2000m), 10MΩ or more | |
| Noise immunity | | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | | The LED turns on when the power is on and input is on. | |
| Socket | | Provided (Modules are replaceable.) | |
| Mountable module | | 100VAC input (photocoupler isolation): FA1-TM1X100A 200VAC input (photocoupler isolation): FA1-TM1X200A 24VDC input (photocoupler isolation): FA1-TM1X24D 48VDC input (photocoupler isolation): FA1-TM1X48D 100VDC input (photocoupler isolation): FA1-TM1X100D 24VDC input (relay isolation): FA1-TM1X24RA Dummy (for dust protection): FA1-TM1ND4 | |
| No. of times to replace module | | 50 times | |
| Module mixing | | Possible | |
| Terminal block (Spring clamp terminal block) | No. of terminals | 20 (power supply: 4, input: 16) | 36 (power supply: 4, input: 32) |
| | Applicable wire (stranded/solid wire) | Without ferrule | 0.2 to 1.5mm ² (24 to 16AWG) |
| | | With ferrule | 0.08 to 0.75mm ² (28 to 18AWG) |
| Applicable wire | 8mm | | |
| Module installation | Screw | M4 × 0.7mm × 27mm or more Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | |
| Weight | | Approx. 160g | Approx. 210g |

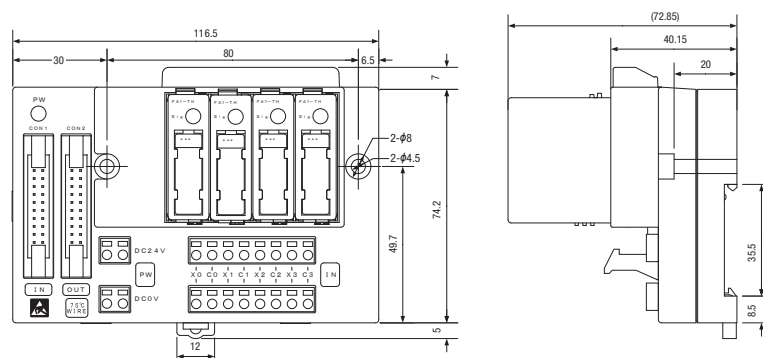
External dimensions

- 4-point installation base unit: FA1-TH4X2SC20S1E

(Unit: mm)

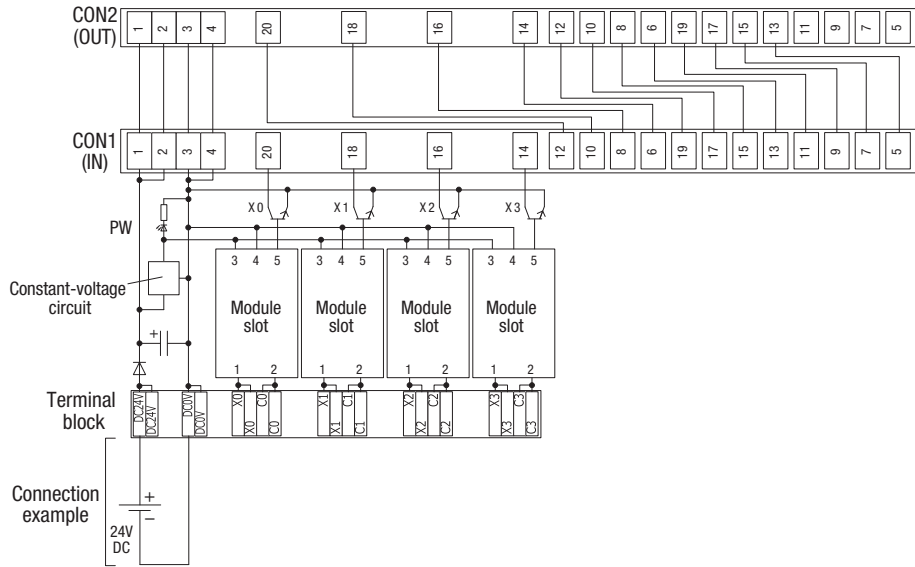


- 8-point installation base unit: FA1-TH8X2SC20S1E

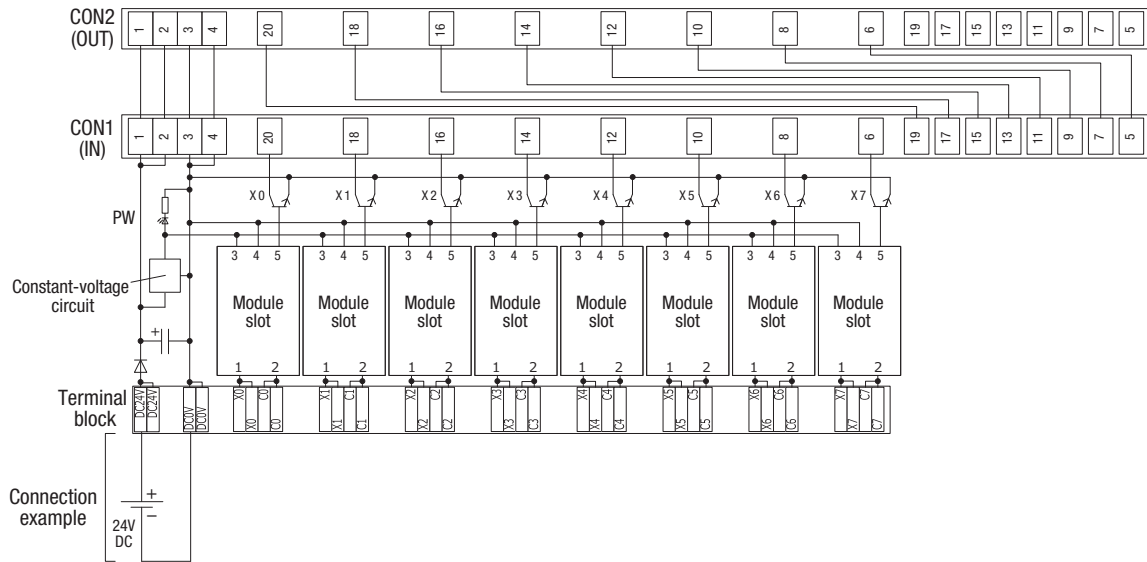


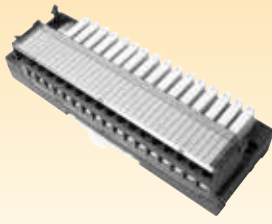
Connection diagram

● 4-point installation base unit: FA1-TH4X2SC20S1E



● 8-point installation base unit: FA1-TH8X2SC20S1E





M3-screw 16-point 24VDC N/O contact relay input (independent common; with sockets)

FA-TH16XRA20S

- Commons can be used separately according to points used, such as 4 points/common.
- Sockets enable a relay to be replaced individually.

Related materials Selection notes P.222 Precautions for use P.226

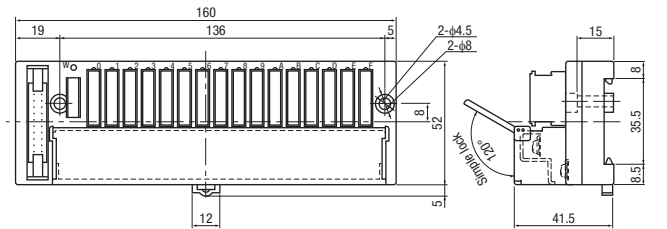
Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

Specifications

| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Relay | |
| Rated input voltage/current | Voltage: 24VDC, Current: approx. 10mA (24VDC) | |
| Operating voltage range | 21.6 to 26.4VDC (24VDC±10% (ripple ratio: within 5%)) | |
| Maximum number of simultaneous on points | 100% (3-way installation) | |
| On voltage/On current | 19.2VDC or more/8.1mA or more | |
| Off voltage/Off current | 2.4VDC or less/1.0mA or less | |
| Input impedance | Approx. 2.2kΩ | |
| Response time | OFF → ON | 10ms or less (excluding programmable controller response time) |
| | ON → OFF | 12ms or less (excluding programmable controller response time) |
| Minimum switching load | 24VDC, 1mA or more | |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more when energized by 24VDC, 100mA (contact side) | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 10mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs, between external power supply and input: 2500VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Socket | Provided (Relay modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Terminal block | Terminal screw | M3 spring-up screws, number of terminals: 34P, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool | |
| Weight | Approx. 300g | |

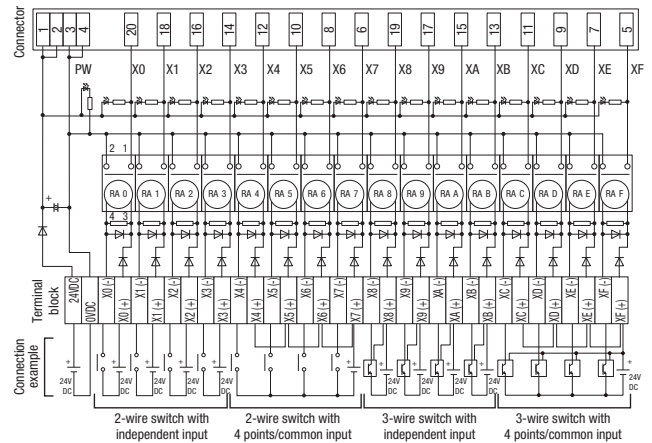
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



(Unit: mm)

Connection diagram



*: For the product of "DATE 0908" or earlier on the rating plate, the connector 3P and 4P are not connected with OVDC.



M3-screw 16-point 24VDC photocoupler input (2-wire type, 16 points/common) FA-TH16X24D31

■ Because the input current is 10mA, this module is designed to be immune to incorrect inputs caused by leakage current.

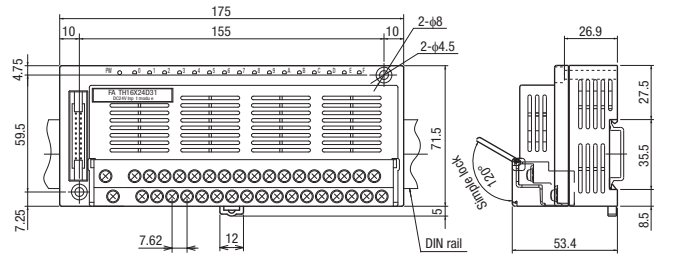
Related materials Selection notes P.222 Precautions for use P.226

Specifications

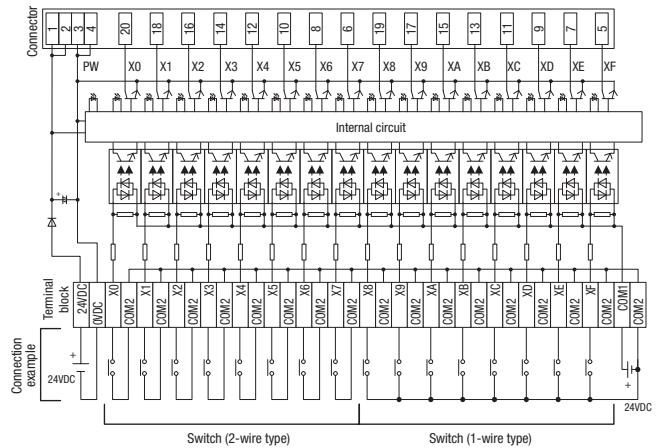
| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated input voltage/current | Voltage: 24VDC, Current: approx. 10mA (24VDC) | |
| Operating voltage range | 21.6 to 26.4VDC (24VDC±10% (ripple ratio: within 5%)) | |
| Maximum number of simultaneous on points | 100% (5-way installation) | |
| On voltage/On current | 19VDC or more/7.9mA or more | |
| Off voltage/Off current | 8VDC or less/3.3mA or less | |
| Input impedance | Approx. 2.2kΩ | |
| Response time | OFF → ON: 10ms or less (excluding programmable controller response time) ON → OFF: 10ms or less (excluding programmable controller response time) | |
| Wiring method for common | 16 points/common (2-wire type, WET type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 27mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | 560VACrms/3 cycles (altitude: 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Terminal block | Terminal screw | M3 spring-up screws, number of terminals: 36P, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 310g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





M3.5-screw 16-point 24VDC photocoupler input (2-wire type, 16 points/common)

FA-TH16X24D31L

- Because the input current is 10mA, this module is designed to be immune to incorrect inputs caused by leakage current.
- Using M3.5 terminal screws, the module supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.

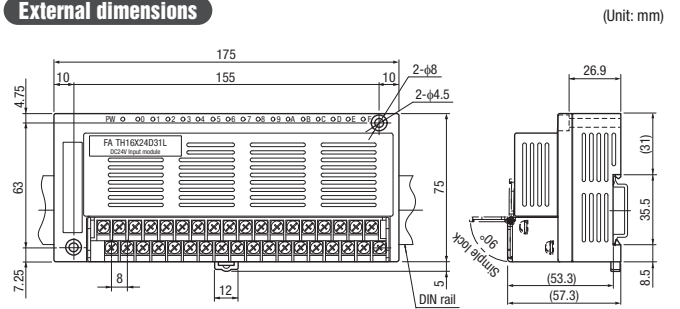
Related materials Selection notes P.222 Precautions for use P.226

Specifications

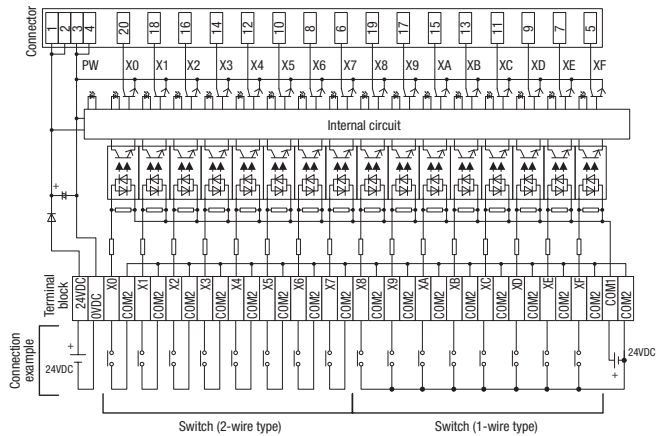
| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated input voltage/current | Voltage: 24VDC, Current: approx. 10mA (24VDC) | |
| Operating voltage range | 21.6 to 26.4VDC (24VDC±10% (ripple ratio: within 5%)) | |
| Maximum number of simultaneous on points | 100% (5-way installation) | |
| On voltage/On current | 19VDC or more/7.9mA or more | |
| Off voltage/Off current | 8VDC or less/3.3mA or less | |
| Input impedance | Approx. 2.2kΩ | |
| Response time | OFF → ON | 10ms or less (excluding programmable controller response time) |
| | ON → OFF | 10ms or less (excluding programmable controller response time) |
| Wiring method for common | 16 points/common (2-wire type, WET type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 27mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | 560VACrms/3 cycles (altitude: 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Terminal block | Terminal screw | M3.5 screws, number of terminals: 36P, 8.0mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 68 to 92N·cm (7 to 9kgf·cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 310g | |

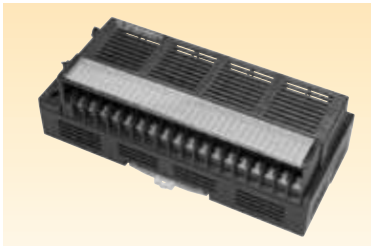
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





M3.5-screw 16-point 48VDC photocoupler input (2-wire type, 16 points/common)

FA-TH16X48D31L

- 48VDC inputs are available for a MELSEC 24VDC input module.
- When a 64-point input module is used, 48VDC inputs for a maximum of 64 points can be made per one slot.
- Using M3.5 terminal screws, the module supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.

Related materials Selection notes P.222 Precautions for use P.226

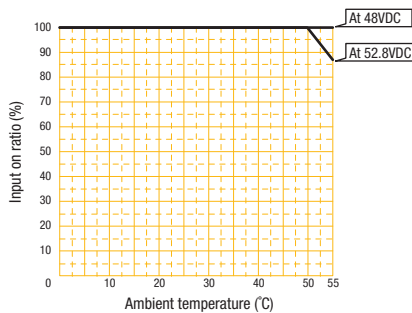
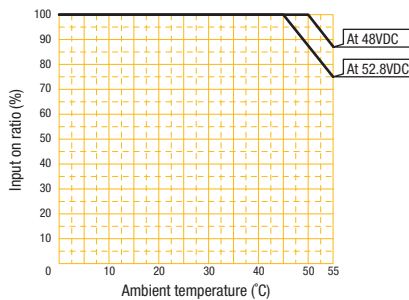
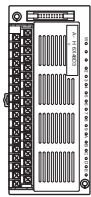
Specifications

| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated input voltage/current | Voltage: 48VDC, Current: approx. 5mA (48VDC) | |
| Operating voltage range | 43.2 to 52.8VDC (48VDC±10% (ripple ratio: within 5%)) | |
| Maximum number of simultaneous on points | Depending on the installation direction (Refer to the derating chart.) | |
| On voltage/On current | 34VDC or more/4.0mA or more | |
| Off voltage/Off current | 10VDC or less/1.0mA or less | |
| Input impedance | Approx. 8.5kΩ | |
| Response time | OFF → ON | 10ms or less (excluding programmable controller response time) |
| | ON → OFF | 10ms or less (excluding programmable controller response time) |
| Wiring method for common | 16 points/common (2-wire type, WET type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 27mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | 560VACrms/3 cycles (altitude: 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1µs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Terminal block | Terminal screw | M3.5 screws, number of terminals: 36P, 8.0mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 68 to 92N-cm (7 to 9kgf-cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 310g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

Derating chart

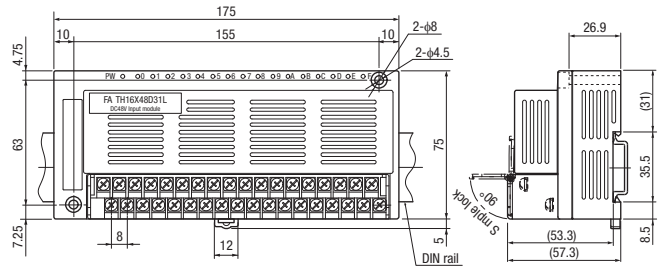
- In any of the following installation directions, restrictions occur on the number of points simultaneously on.



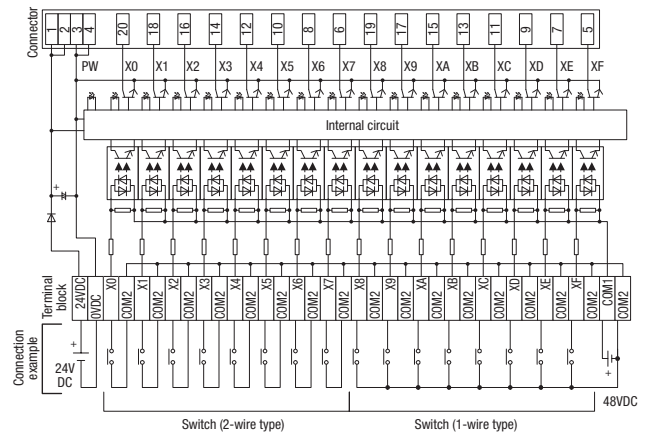
- Derating does not occur in any installation direction other than the above.

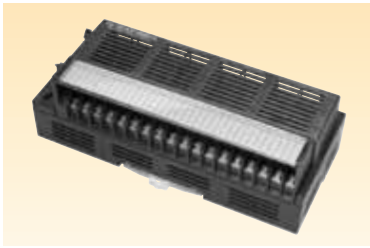
External dimensions

(Unit: mm)



Connection diagram





M3.5-screw 16-point 100VDC photocoupler input (2-wire type, 16 points/common)

FA-TH16X100D31L

- 100VDC inputs are available for a MELSEC 24VDC input module.
- When a 64-point input module is used, 100VDC inputs for a maximum of 64 points can be made per one slot.
- Using M3.5 terminal screws, the module supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.

Related materials Selection notes P.222 Precautions for use P.226

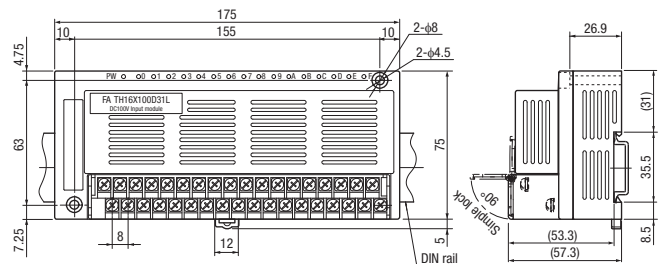
Specifications

| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated input voltage/current | Voltage: 100/110VDC, Current: approx. 2.5mA (100VDC) | |
| Operating voltage range | 90 to 121VDC (100/110VDC±10% (ripple ratio: within 5%)) | |
| Maximum number of simultaneous on points | Depending on the installation direction (Refer to the derating chart.) | |
| On voltage/On current | 80VDC or more/2.2mA or more | |
| Off voltage/Off current | 20VDC or less/0.5mA or less | |
| Input impedance | Approx. 37kΩ | |
| Response time | OFF → ON | 10ms or less (excluding programmable controller response time) |
| | ON → OFF | 10ms or less (excluding programmable controller response time) |
| Wiring method for common | 16 points/common (2-wire type, WET type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 27mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | 1780VACrms/3 cycles (altitude: 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Terminal block | Terminal screw | M3.5 screws, number of terminals: 36P, 8.0mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 68 to 92N·cm (7 to 9kgf·cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 320g | |

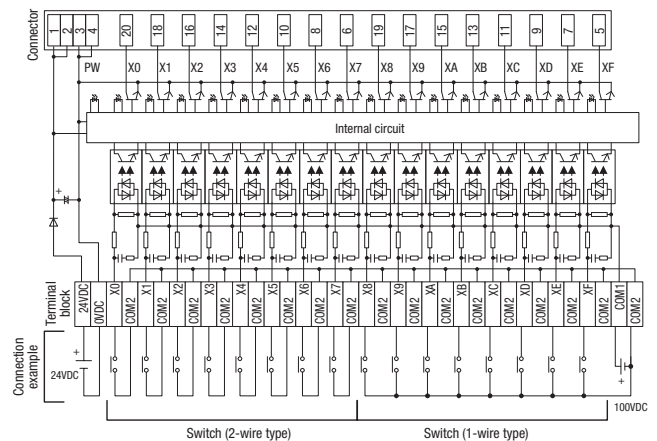
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)

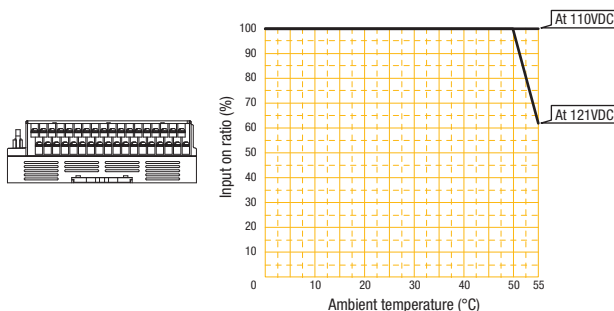
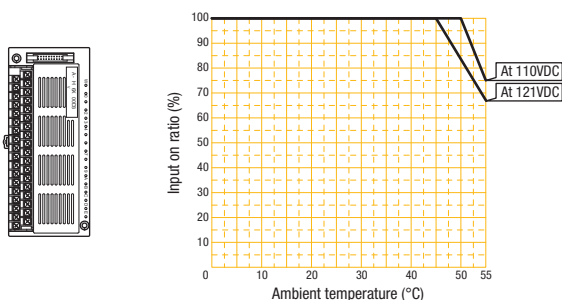


Connection diagram



Derating chart

- In any of the following installation directions, restrictions occur on the number of points simultaneously on.



- Derating does not occur in any installation direction other than the above.



M3-screw 16-point 100VAC photocoupler input (2-wire type, 16 points/common) FA-TH16X100A31

- 100VAC inputs are available for a MELSEC 24VDC input module.
- When a 64-point input module is used, 100VAC inputs for a maximum of 64 points can be made per one slot.

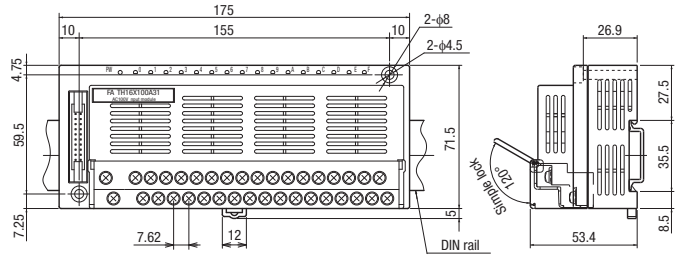
Related materials Selection notes P.222 Precautions for use P.226

Specifications

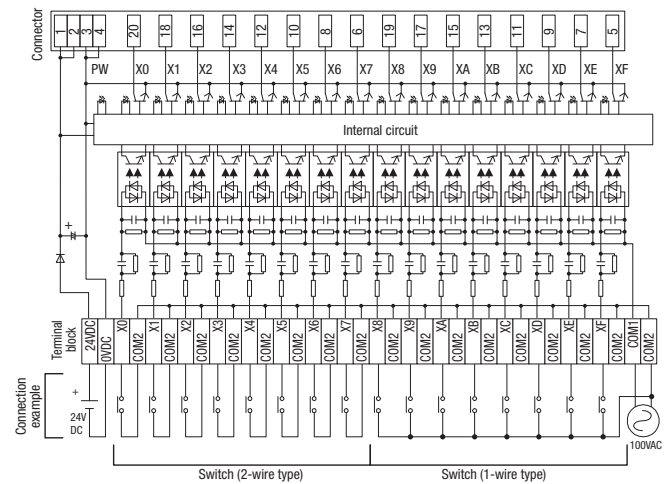
| Item | Specifications |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated input voltage/current | Voltage: 100 to 110VAC (50/60Hz) Current: approx. 8mA (100VAC, 60Hz), approx. 7mA (100VAC, 50Hz) |
| Operating voltage range | 85 to 132VAC (50/60Hz±3Hz (distortion rate: within 5%)) |
| Maximum number of simultaneous on points | 100% (5-way installation) |
| On voltage/On current | 80VAC or more/5mA or more (50Hz, 60Hz) |
| Off voltage/Off current | 30VAC or less/1.7mA or less (50Hz, 60Hz) |
| Inrush current | Max. 200mA, 1ms or less (132VAC) |
| Input impedance | Approx. 12kΩ (60Hz), approx. 15kΩ (50Hz) |
| Response time | OFF → ON: 15ms or less (100VAC, 60Hz) (excluding programmable controller response time) ON → OFF: 35ms or less (100VAC, 60Hz) (excluding programmable controller response time) |
| Wiring method for common | 16 points/common (2-wire type, WET type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 25mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | 1780VACrms/3 cycles (altitude: 2000m), 10MΩ or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and input is on. |
| Terminal block | Terminal screw: M3 spring-up screws, number of terminals: 36P, 7.62mm pitch |
| | Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw: M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail: TH35-7.5fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 310g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





M3.5-screw 16-point 100VAC photocoupler input (2-wire type, 16 points/common)

FA-TH16X100A31L

- 100VAC inputs are available for a MELSEC 24VDC input module.
- When a 64-point input module is used, 100VAC inputs for a maximum of 64 points can be made per one slot.
- Using M3.5 terminal screws, the module supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.

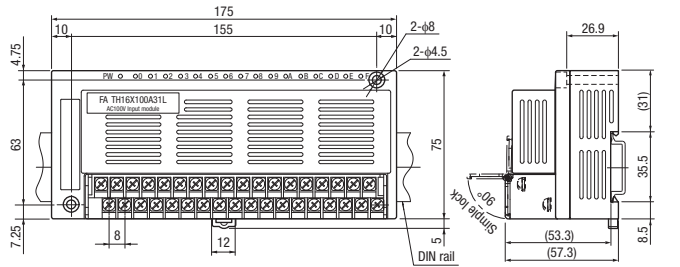
Related materials Selection notes P.222 Precautions for use P.226

Specifications

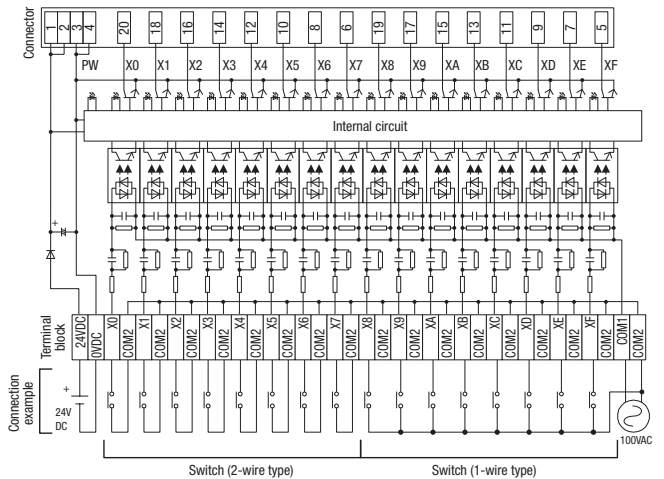
| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated input voltage/current | Voltage: 100 to 110VAC (50/60Hz) Current: approx. 8mA (100VAC, 60Hz), approx. 7mA (100VAC, 50Hz) | |
| Operating voltage range | 85 to 132VAC (50/60Hz±3Hz (distortion rate: within 5%)) | |
| Maximum number of simultaneous on points | 100% (5-way installation) | |
| On voltage/On current | 80VAC or more/5mA or more (50Hz, 60Hz) | |
| Off voltage/Off current | 30VAC or less/1.7mA or less (50Hz, 60Hz) | |
| Inrush current | Max. 200mA, 1ms or less (132VAC) | |
| Input impedance | Approx. 12kΩ (60Hz), approx. 15kΩ (50Hz) | |
| Response time | OFF → ON: 15ms or less (100VAC, 60Hz) (excluding programmable controller response time) ON → OFF: 35ms or less (100VAC, 60Hz) (excluding programmable controller response time) | |
| Wiring method for common | 16 points/common (2-wire type, WET type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 25mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | 1780VACrms/3 cycles (altitude: 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Terminal block | Terminal screw | M3.5 screws, number of terminals: 36P, 8.0mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 68 to 92N·cm (7 to 9kgf·cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 320g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





M3-screw 16-point 200VAC photocoupler input (2-wire type, 16 points/common) FA-TH16X200A31

- 200VAC inputs are available for a MELSEC 24VDC input module.
- When a 64-point input module is used, 200VAC inputs for a maximum of 64 points can be made per one slot.

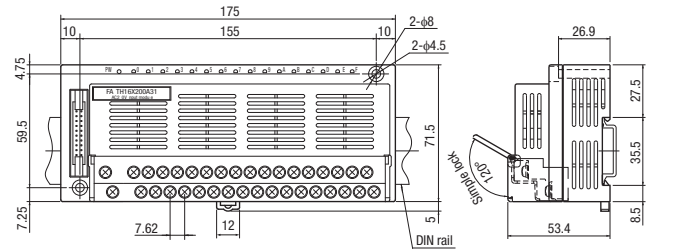
Related materials Selection notes P.222 Precautions for use P.226

Specifications

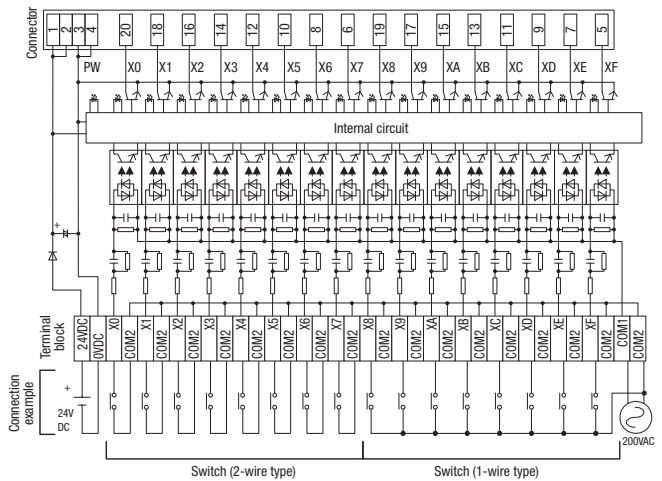
| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated input voltage/current | Voltage: 200 to 220VAC (50/60Hz) Current: approx. 7.5mA (200VAC, 60Hz), approx. 6mA (200VAC, 50Hz) | |
| Operating voltage range | 170 to 264VAC (50/60Hz±3Hz (distortion rate: within 5%)) | |
| Maximum number of simultaneous on points | 100% (5-way installation) | |
| On voltage/On current | 160VAC or more/4.8mA or more (50Hz, 60Hz) | |
| Off voltage/Off current | 60VAC or less/2.3mA or less (50Hz, 60Hz) | |
| Inrush current | Max. 500mA, 1ms or less (264VAC) | |
| Input impedance | Approx. 27kΩ (60Hz), approx. 32kΩ (50Hz) | |
| Response time | OFF → ON: 15ms or less (200VAC, 60Hz) (excluding programmable controller response time) ON → OFF: 35ms or less (200VAC, 60Hz) (excluding programmable controller response time) | |
| Wiring method for common | 16 points/common (2-wire type, WET type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 25mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | 2830VACrms/3 cycles (altitude: 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 1500V _{p-p} , noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Terminal block | Terminal screw | M3 spring-up screws, number of terminals: 36P, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 320g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



Connection diagram





M3.5-screw 16-point 200VAC photocoupler input (2-wire type, 16 points/common)

FA-TH16X200A31L

- 200VAC inputs are available for a MELSEC 24VDC input module.
- When a 64-point input module is used, 200VAC inputs for a maximum of 64 points can be made per one slot.
- Using M3.5 terminal screws, the module supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.

Related materials Selection notes P.222 Precautions for use P.226

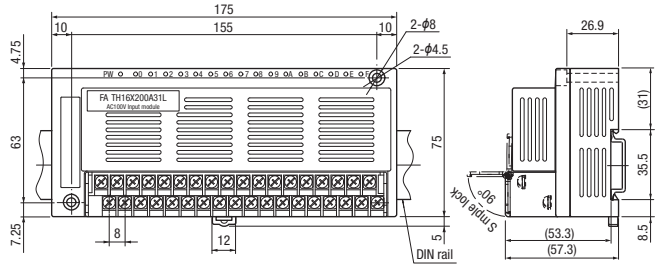
Specifications

| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Connectable programmable controller module | Positive common, 24VDC input module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated input voltage/current | Voltage: 200 to 220VAC (50/60Hz) Current: approx. 7.5mA (200VAC, 60Hz), approx. 6mA (200VAC, 50Hz) | |
| Operating voltage range | 170 to 264VAC (50/60Hz±3Hz (distortion rate: within 5%)) | |
| Maximum number of simultaneous on points | 100% (5-way installation) | |
| On voltage/On current | 160VAC or more/4.8mA or more (50Hz, 60Hz) | |
| Off voltage/Off current | 60VAC or less/2.3mA or less (50Hz, 60Hz) | |
| Inrush current | Max. 500mA, 1ms or less (264VAC) | |
| Input impedance | Approx. 27kΩ (60Hz), approx. 32kΩ (50Hz) | |
| Response time | OFF → ON: 15ms or less (200VAC, 60Hz) (excluding programmable controller response time) ON → OFF: 35ms or less (200VAC, 60Hz) (excluding programmable controller response time) | |
| Wiring method for common | 16 points/common (2-wire type, WET type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 25mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | 2830VACrms/3 cycles (altitude: 2000m), 10MΩ or more | |
| Noise immunity | Simulator noise 1500p-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and input is on. | |
| Terminal block | Terminal screw | M3.5 screws, number of terminals: 36P, 8.0mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 68 to 92N·cm (7 to 9kgf·cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 330g | |

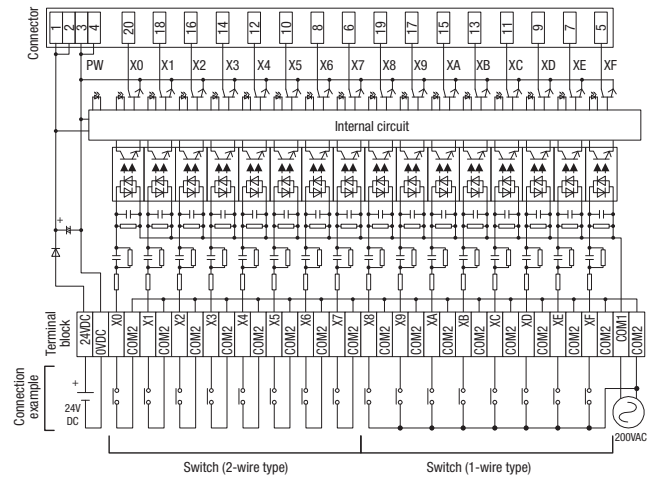
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)



Connection diagram



Digital signal converters (terminal modules) for output signals



Spring clamp terminal type, 4-point N/O contact relay output [Pre-mounted module: Slim type]

FA1-TH4Y2SC20S1E, FA1-TH1E4Y2SC20S1E

- This type of signal converter can mount optimal modules for each connected devices, such as switches and lamps, because different digital signals can be specified for each point. Also, distributed installation is possible by selecting the type (number of modules).
- The number of unused points can be reduced by selecting the optimal installation base unit (4-point, 8-point, or 16-point).
- Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
- This type does not require screws.
Wires can be directly pushed into the conductive terminals without using a screwdriver.

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

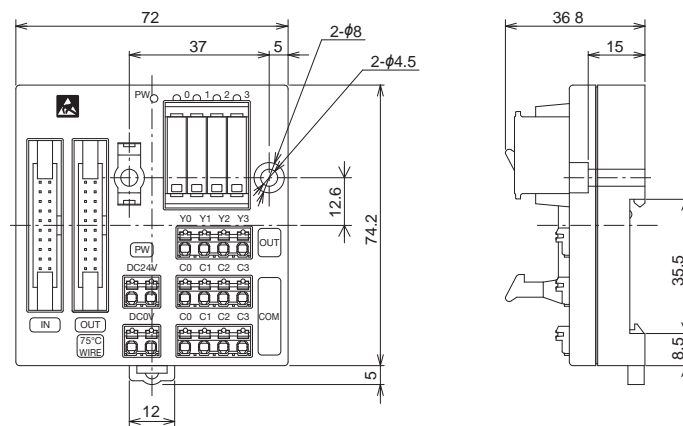
Specifications

| Item | FA1-TH4Y2SC20S1E | FA1-TH1E4Y2SC20S1E | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Pre-mounted module | None (Module selectable type) | | |
| Connectable programmable controller module | Sink type 24VDC transistor output | Source type 24VDC transistor output | |
| Digital signal converter output type | Sink output | Source output | |
| No. of points | 4 | | |
| Wiring method for common | Independent common | | |
| External power supply | 24VDC $\pm 10\%$ (ripple rate within 5%, CLASS 2 or SELV + LIM) | | |
| Module current consumption | Approx. 3mA at 24VDC (not including current consumption of modules mounted and programmable controller) | | |
| Electrical specifications | Depending on the module used | | |
| Withstand voltage, insulation resistance | AC3000V rms/minute (altitude 0 to 2000m), 10M Ω or more | | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1 μ s (based on a noise simulator with a noise frequency of 25 to 60Hz) | | |
| Operation display | The LED turns on when the power is on and output is on. | | |
| Maximum number of simultaneous on points | 100%. When triac or transistor modules are mounted, this value depends on the load current characteristics. | | |
| Mountable module | N/O contact relay: FA-NYP24WK*, N/C contact relay: FA-NYBP24WK*, triac: FA-SN24A01FS*, transistor: FA-SN24D01HZS* | | |
| No. of times to replace module | 50 times | | |
| Module mixing | Possible | | |
| Terminal block | No. of terminals | 16P (power supply: 4, output: 12) | |
| | Applicable wire (stranded/solid wire) | Without ferrule | 0.2 to 1.5mm ² (24 to 16AWG), copper wire with a temperature rating of 75°C or more |
| | | With ferrule | 0.08 to 0.75mm ² (28 to 18AWG), copper wire with a temperature rating of 75°C or more |
| Applicable wire | 8mm | | |
| Module installation | Screw | M4 \times 0.7mm \times 22mm or more Tightening torque range: 78 to 118N-cm (8 to 12kgf-cm) | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | |
| Weight | Approx. 85g | | |

External dimensions

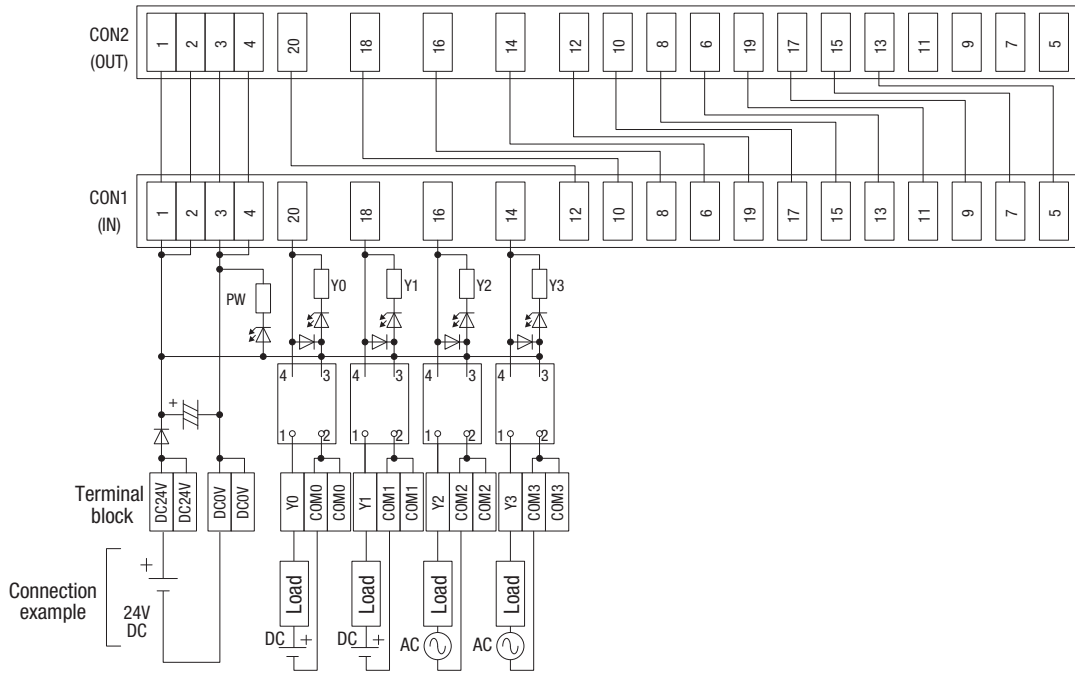
- Sink: FA1-TH4Y2SC20S1E
- Source: FA1-TH1E4Y2SC20S1E

(Unit: mm)

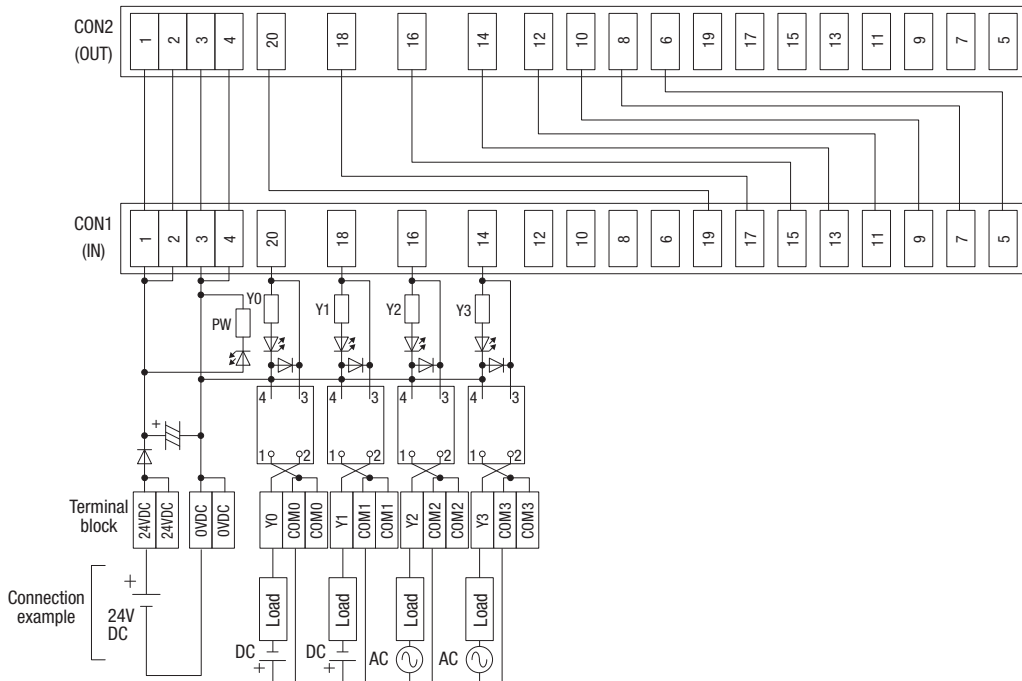


Connection diagram

- Sink: FA1-TH4Y2SC20S1E



- Source: FA1-TH1E4Y2SC20S1E





Spring clamp terminal type, 8-point N/O contact relay output [Pre-mounted module: Slim type]

FA1-TH8Y2SC20S1E, FA1-TH1E8Y2SC20S1E

- This type of signal converter can mount optimal modules for each connected devices, such as switches and lamps, because different digital signals can be specified for each point. Also, distributed installation is possible by selecting the type (number of modules).
- The number of unused points can be reduced by selecting the optimal installation base unit (4-point, 8-point, or 16-point).
- Retightening work is not required at periodic inspection, as screws do not loose due to vibration.
- This type does not require screws.
Wires can be directly pushed into the conductive terminals without using a screwdriver.

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

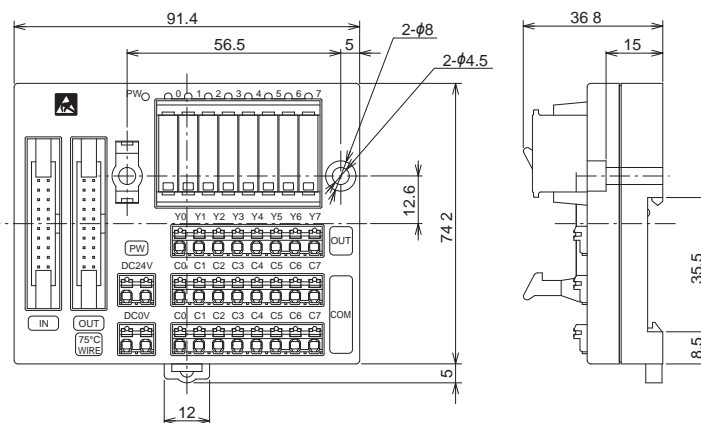
Specifications

| Item | FA1-TH8Y2SC20S1E | FA1-TH1E8Y2SC20S1E | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Pre-mounted module | None (Module selectable type) | | |
| Connectable programmable controller module | Sink type 24VDC transistor output | Source type 24VDC transistor output | |
| Digital signal converter output type | Sink output | Source output | |
| No. of points | 8 | | |
| Wiring method for common | Independent common | | |
| External power supply | 24VDC ±10% (ripple rate within 5%, CLASS 2 or SELV + LIM) | | |
| Module current consumption | Approx. 5mA at 24VDC (not including current consumption of modules mounted and programmable controller) | | |
| Electrical specifications | Depending on the module used | | |
| Withstand voltage, insulation resistance | AC3000V rms/minute (altitude 0 to 2000m), 10MΩ or more | | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | | |
| Operation display | The LED turns on when the power is on and output is on. | | |
| Maximum number of simultaneous on points | 100%. When triac or transistor modules are mounted, this value depends on the load current characteristics. | | |
| Mountable module | N/O contact relay: FA-NYP24WK*, N/C contact relay: FA-NYBP24WK*, triac: FA-SN24A01FS*, transistor: FA-SN24D01HZS* | | |
| No. of times to replace module | 50 times | | |
| Module mixing | Possible | | |
| Terminal block | No. of terminals | 28P (power supply: 4, output: 24) | |
| | Applicable wire (stranded/solid wire) | Without ferrule | 0.2 to 1.5mm ² (24 to 16AWG), copper wire with a temperature rating of 75°C or more |
| | | With ferrule | 0.08 to 0.75mm ² (28 to 18AWG), copper wire with a temperature rating of 75°C or more |
| Applicable wire | 8mm | | |
| Module installation | Screw | M4 × 0.7mm × 22mm or more | |
| | DIN rail | Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | |
| Weight | Approx. 110g | | |

External dimensions

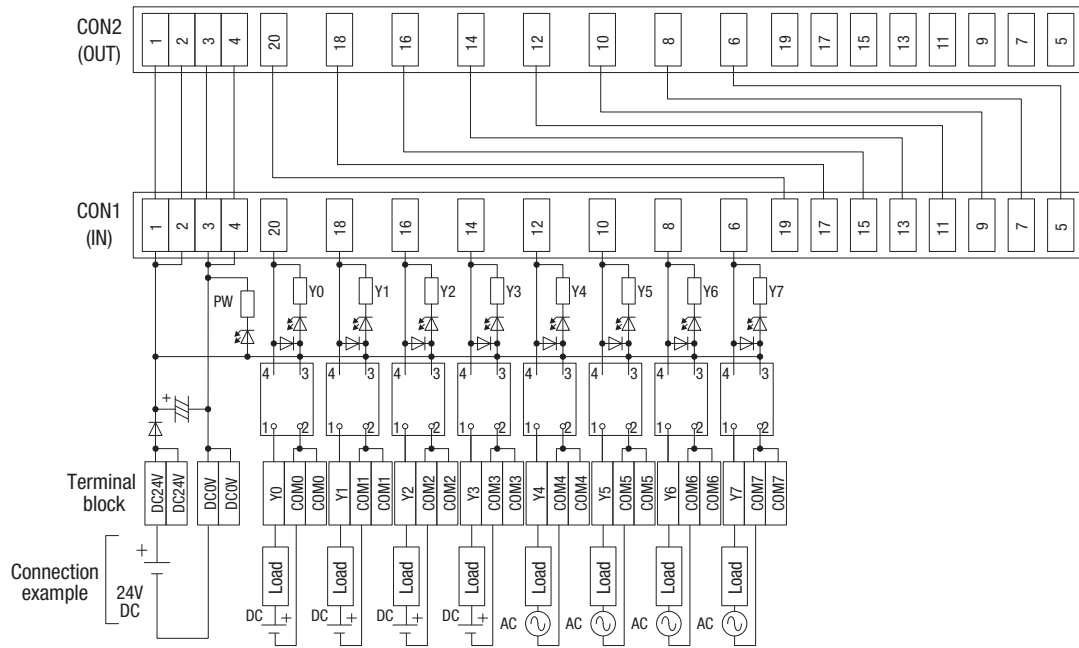
- Sink: FA1-TH8Y2SC20S1E
- Source: FA1-TH1E8Y2SC20S1E

(Unit: mm)

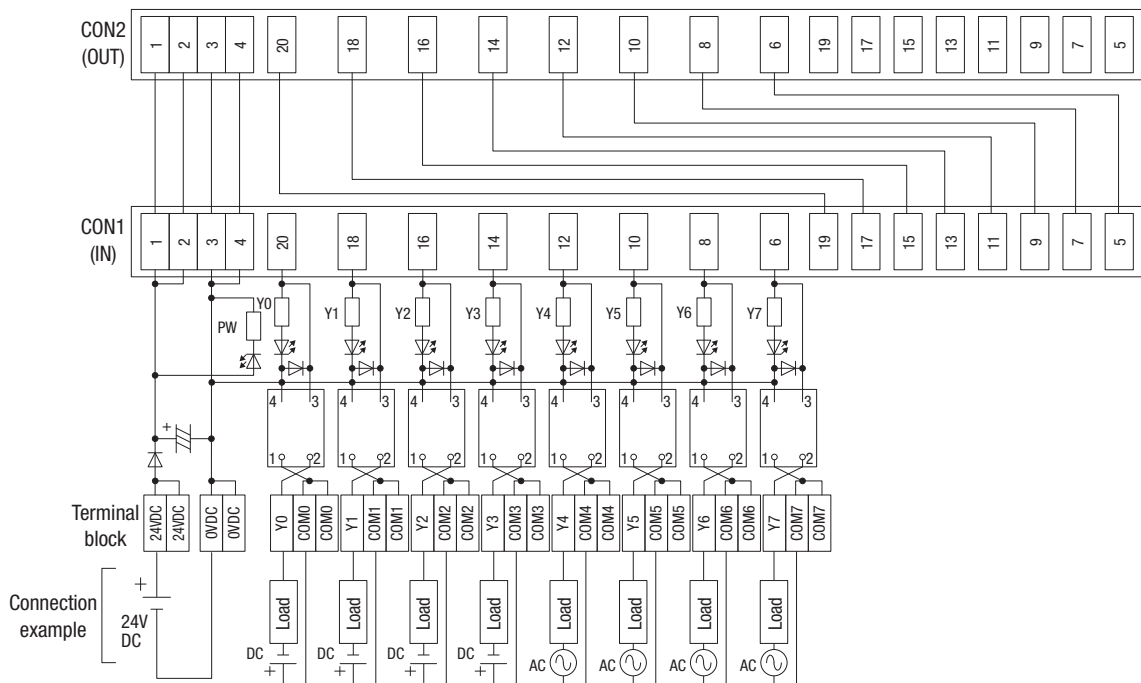


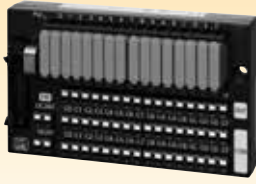
Connection diagram

- Sink: FA1-TH8Y2SC20S1E



- Source: FA1-TH1E8Y2SC20S1E





Spring clamp terminal type installation base unit, 16-point 1.0A transistor output (source-type to source-type, independent common; with sockets)

FA1-TH1E16Y1TR20S1E

- This unit converts the MELSEC source-type transistor output signals to 1.0A transistor output signals.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

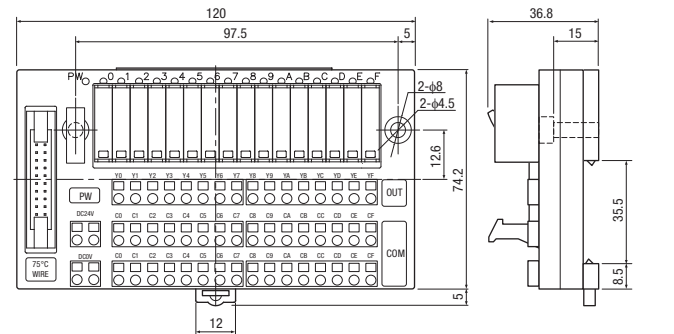
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

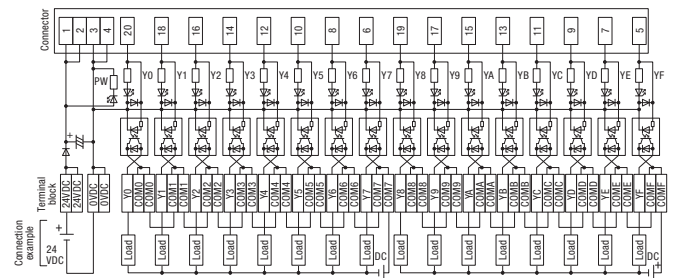
Specifications

| Item | Specifications | |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Connectable programmable controller module | Source-type 24VDC transistor output module | |
| Terminal output type | Source output | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated load voltage | 3 to 30VDC (SELV and LIM or Class 2) | |
| Maximum number of simultaneous on points | Depends on the load current characteristics. | |
| Minimum load current | 1.0mA | |
| Maximum load current | 1A/point | |
| Maximum inrush current | 3A 10ms | |
| Leakage current at off | 0.1mA or lower (at 30VDC) | |
| Maximum voltage drop at ON | 1.5V or less | |
| Response time | OFF → ON ON → OFF | |
| Surge suppressor | Zener diode (built in transistor module) | |
| Fuse | None | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%, SELV and LIM or Class 2) | |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Transistor modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| Module installation | Wire strip length | 8mm |
| | Screw | M4 × 0.7mm × 22mm or more |
| Weight | Tightening torque range: | 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| | | Approx. 220g |

External dimensions

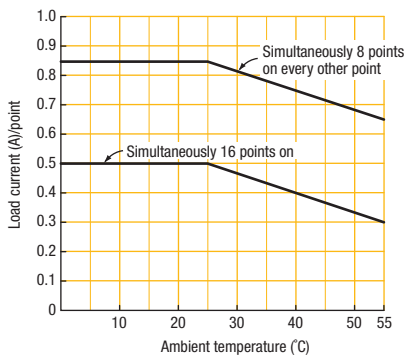


Connection diagram



*: 2A when different modules are mixed together and a relay module is used. For specifications of relay/transistor modules, refer to the descriptions about replacement modules.

Load current characteristics





Spring clamp terminal type installation base unit, 16-point socket unit (source-type to source-type, independent common)

FA1-TH1E16Y2SC20S1E

- Output modules (relay/triac/transistor) can be mixed flexibly.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

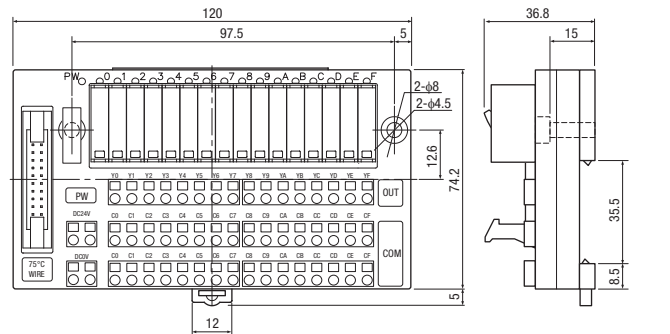
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

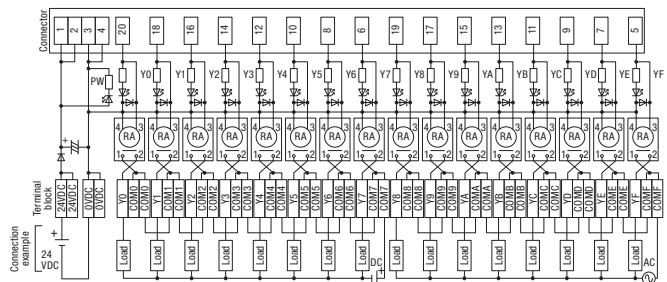
Specifications

| Item | Specifications | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Connectable programmable controller module | Source-type 24VDC transistor output module | |
| Terminal output type | Source output | |
| No. of points | 16 | |
| Rated load voltage/current | Voltage/current: Depends on the module connected. | |
| Maximum number of simultaneous on points | 100%. When triac/transistor modules are connected, this value depends on the load current characteristics. | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%, SELV and LIM or Class 2) | |
| Module current consumption | Approx. 10mA at 24VDC (not including current consumption of module connected and programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Mountable module | N/O contact relay: FA-NYP24WK*, N/C contact relay: FA-NYBP24WK*, triac: FA-SN24A01FS*, transistor: FA-SN24D01HZS* | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| | Wire strip length | 8mm |
| Module installation | Screw | M4 × 0.7mm × 22mm or more |
| | DIN rail | Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) |
| Weight | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| | | Approx. 160g |

External dimensions



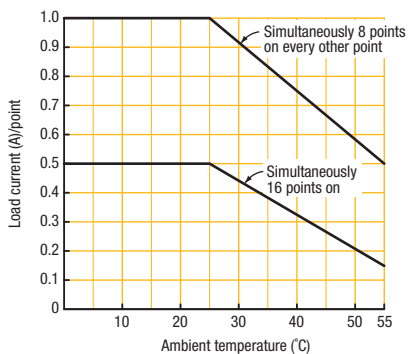
Connection diagram



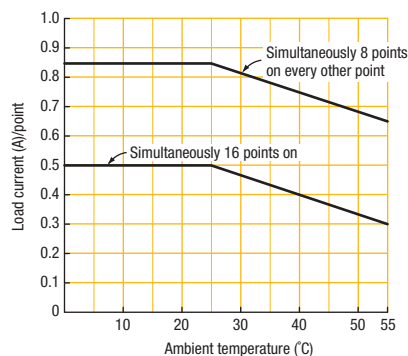
*: Diagram when the FA-NYP24WK4 (N/O contact relay module) is connected.

Load current characteristics

When a triac module is connected



When a transistor module is connected





Spring clamp terminal type, 16-point N/O contact relay output (sink-type to sink-type, independent common; with sockets)

FA1-TH16Y2RA20S1E

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

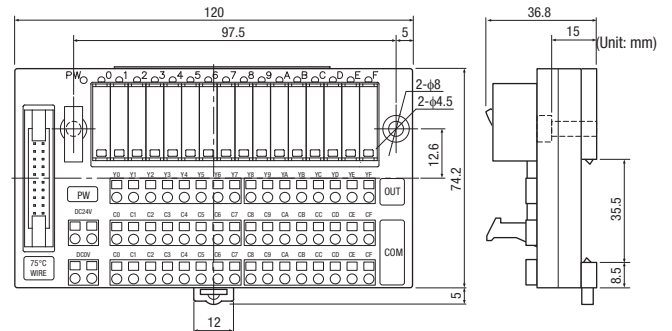
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

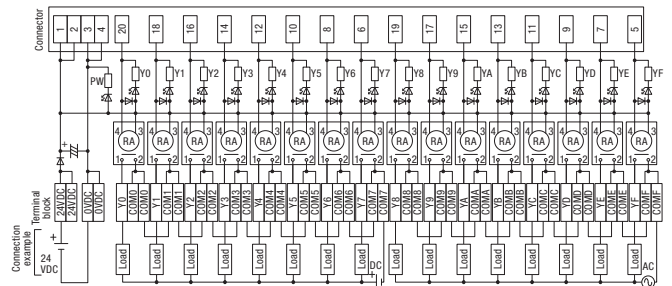
Specifications

| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| Terminal output type | Sink output | |
| No. of points | 16 | |
| Isolation method | Relay | |
| Rated switching voltage/current | Voltage: 24VDC, 100 to 240VAC (50/60Hz), Current: 2A/1 contact (resistance load, COSφ = 1) | |
| Maximum number of simultaneous on points | 100% | |
| Minimum switching load | 5VDC 1mA | |
| Maximum switching load | 270VAC, 150VDC | |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more at rated switching voltage/current | |
| | 100000 times or more at 200VAC 1.5A (COSφ = 0.7), 240VAC 1A (COSφ = 0.7) | |
| | 100000 times or more at 200VAC 1A (COSφ = 0.35) | |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) | |
| | ON → OFF 12ms or less (excluding programmable controller response time) | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%, SELV and LIM or Class 2) | |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Relay modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| | Wire strip length | 8mm |
| Module installation | Screw | M4 × 0.7mm × 22mm or more |
| | DIN rail | Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 220g | |

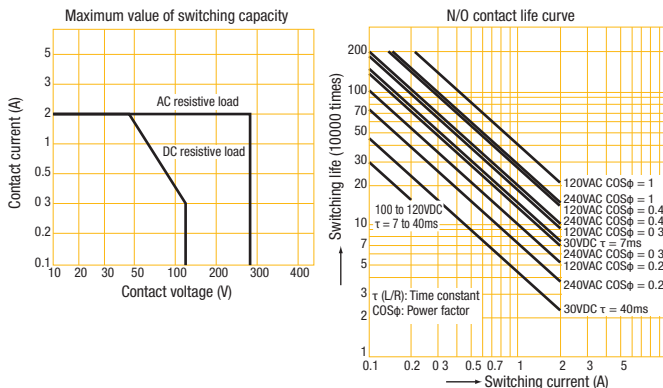
External dimensions



Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



Spring clamp terminal type, 16-point N/O contact relay output (source-type to source-type, independent common; with sockets)

FA1-TH1E16Y2RA20S1E

- This module converts the input from the MELSEC source-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

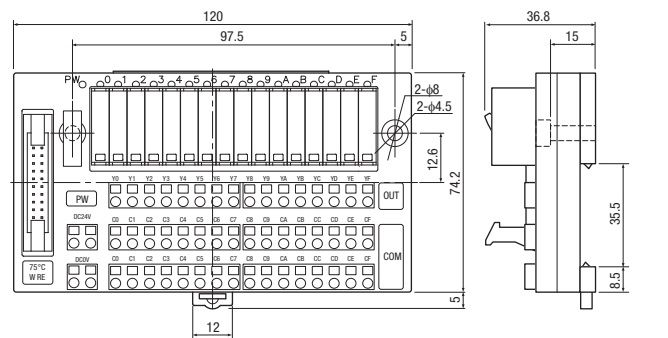
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

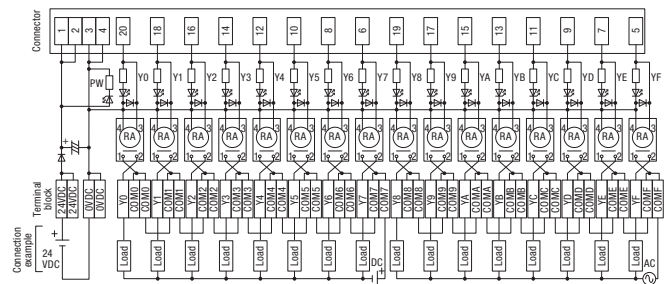
Specifications

| Item | Specifications | |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Source-type 24VDC transistor output module | |
| Terminal output type | Source output | |
| No. of points | 16 | |
| Isolation method | Relay | |
| Rated switching voltage/current | Voltage: 24VDC, 100 to 240VAC (50/60Hz), Current: 2A/1 contact (resistance load, COSφ = 1) | |
| Maximum number of simultaneous on points | 100% | |
| Minimum switching load | 5VDC 1mA | |
| Maximum switching load | 270VAC, 150VDC | |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more at rated switching voltage/current | |
| | 100000 times or more at 200VAC 1.5A (COSφ = 0.7), 240VAC 1A (COSφ = 0.7) | |
| | 100000 times or more at 200VAC 1A (COSφ = 0.35) | |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) | |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) | |
| | ON → OFF 12ms or less (excluding programmable controller response time) | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%, SELV and LIM or Class 2) | |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Relay modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| | Wire strip length | 8mm |
| Module installation | Screw | M4 × 0.7mm × 22mm or more |
| | DIN rail | Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 220g | |

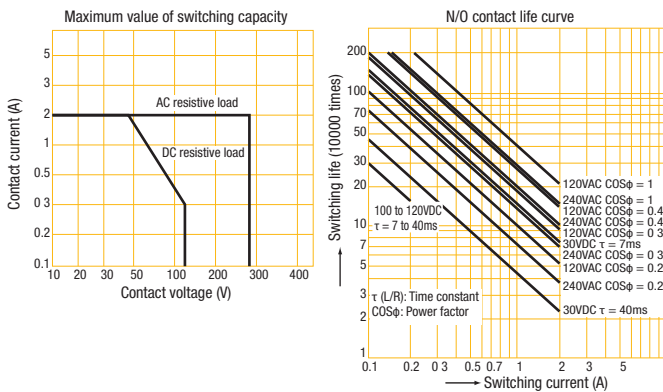
External dimensions



Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



Spring clamp terminal type, 16-point 1.0A triac output (sink-type to sink-type, independent common; with sockets)

FA1-TH16Y1SR20S1E

- This module converts the input from the MELSEC sink-type transistor output module to triac output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

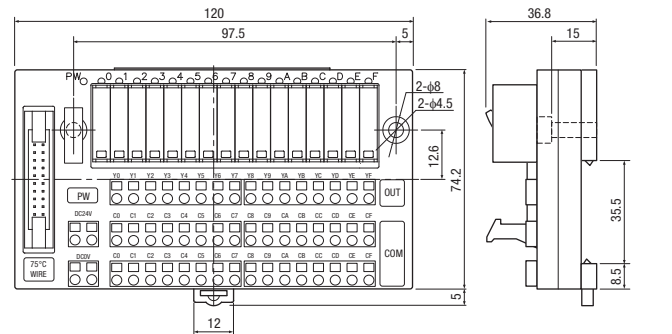
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

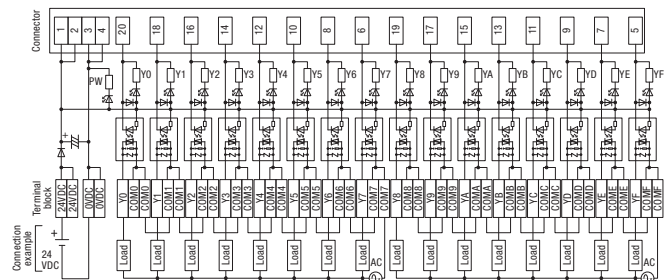
Specifications

| Item | Specifications | |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| Terminal output type | Sink output | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated load voltage | 30 to 240VAC | |
| Maximum number of simultaneous on points | Depends on the load current characteristics. | |
| Minimum load current | 10mA | |
| Maximum load current | 1A/point | |
| Maximum inrush current | 25A (60Hz, 1 cycle) | |
| Leakage current at off | 1.5mArms or lower (at 100VACrms 60Hz) 3.0mArms or lower (at 200VACrms 60Hz) | |
| Maximum voltage drop at ON | 2.5Vrms or less | |
| Response time | OFF → ON: 1ms or less (excluding programmable controller response time) ON → OFF: 12ms or less (excluding programmable controller response time) | |
| Surge suppressor | Varistor, snubber circuit (built in triac module) | |
| Fuse | None | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 180mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Triac modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| Module installation | Wire strip length | 8mm |
| | Screw | M4 × 0.7mm × 22mm or more |
| Weight | DIN rail | Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) |
| | | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |

External dimensions

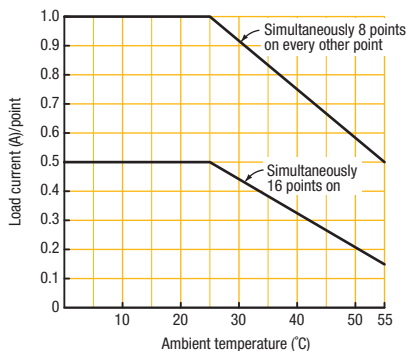


Connection diagram



*: 2A when different modules are mixed together and a relay module is used. For specifications of relay/transistor modules, refer to the descriptions about replacement modules.

Load current characteristics





Spring clamp terminal type, 16-point 1.0A triac output (source-type to source-type, independent common; with sockets)

FA1-TH1E16Y1SR20S1E

- This module converts the input from the MELSEC source-type transistor output module to triac output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

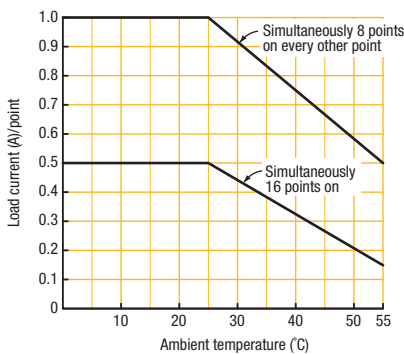
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

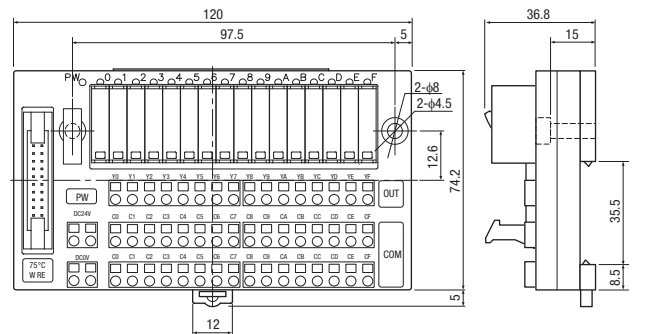
Specifications

| Item | Specifications | |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Connectable programmable controller module | Source-type 24VDC transistor output module | |
| Terminal output type | Source output | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated load voltage | 30 to 240VAC | |
| Maximum number of simultaneous on points | Depends on the load current characteristics. | |
| Minimum load current | 10mA | |
| Maximum load current | 1A/point | |
| Maximum inrush current | 25A (60Hz, 1 cycle) | |
| Leakage current at off | 1.5mArms or lower (at 100VACrms 60Hz) 3.0mArms or lower (at 200VACrms 60Hz) | |
| Maximum voltage drop at ON | 2.5Vrms or less | |
| Response time | OFF → ON: 1ms or less (excluding programmable controller response time) ON → OFF: 12ms or less (excluding programmable controller response time) | |
| Surge suppressor | Varistor, snubber circuit (built in triac module) | |
| Fuse | None | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 180mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Triac modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| | Wire strip length | 8mm |
| Module installation | Screw | M4 × 0.7mm × 22mm or more |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 220g | |

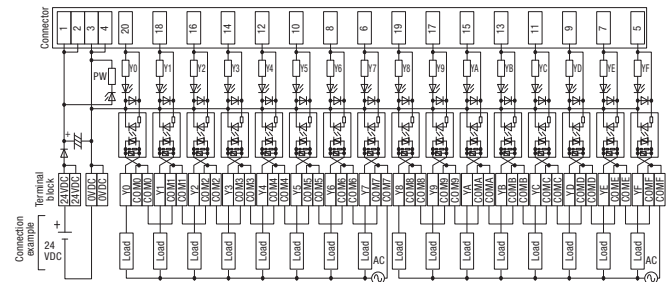
Load current characteristics



External dimensions



Connection diagram



*: 2A when different modules are mixed together and a relay module is used. For specifications of relay/transistor modules, refer to the descriptions about replacement modules.



Spring clamp terminal type, 16-point 1.0A transistor output (sink-type to sink-type, independent common; with sockets)

FA1-TH16Y1TR20S1E

- This module converts the input from the MELSEC sink-type transistor output module to 1.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

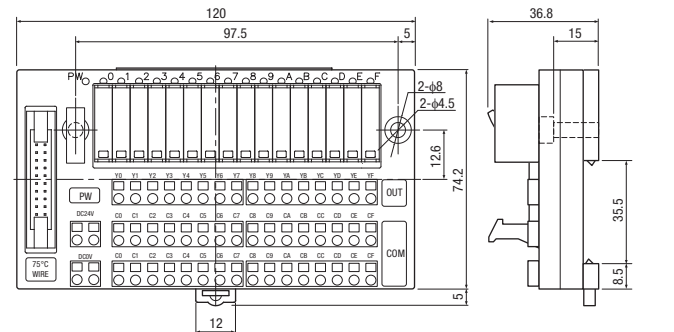
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

Specifications

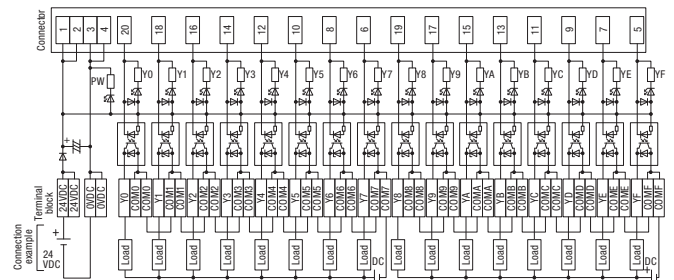
| Item | Specifications | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| Terminal output type | Sink output | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated load voltage | 3 to 30VDC (SELV and LIM or Class 2) | |
| Maximum number of simultaneous on points | Depends on the load current characteristics. | |
| Minimum load current | 1.0mA | |
| Maximum load current | 1A/point | |
| Maximum inrush current | 3A 10ms | |
| Leakage current at off | 0.1mA or lower (at 30VDC) | |
| Maximum voltage drop at ON | 1.5V or less | |
| Response time | OFF → ON: 1ms or less (excluding programmable controller response time) ON → OFF: 1ms or less (excluding programmable controller response time) | |
| Surge suppressor | Zener diode (built in transistor module) | |
| Fuse | None | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%, SELV and LIM or Class 2) | |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Transistor modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| | Wire strip length | 8mm |
| Module installation | Screw | M4 × 0.7mm × 22mm or more |
| | Tightening torque range: | 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | | Approx. 220g |

External dimensions



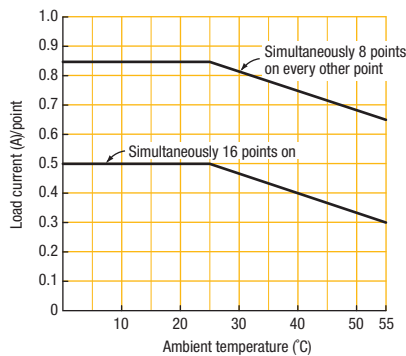
(Unit: mm)

Connection diagram



*: 2A when different modules are mixed together and a relay module is used. For specifications of relay/transistor modules, refer to the descriptions about replacement modules.

Load current characteristics





Spring clamp terminal type, 16-point socket unit (sink-type to sink-type, independent common)

FA1-TH16Y2SC20S1E

- Output modules (relay/triac/transistor) can be mixed flexibly.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

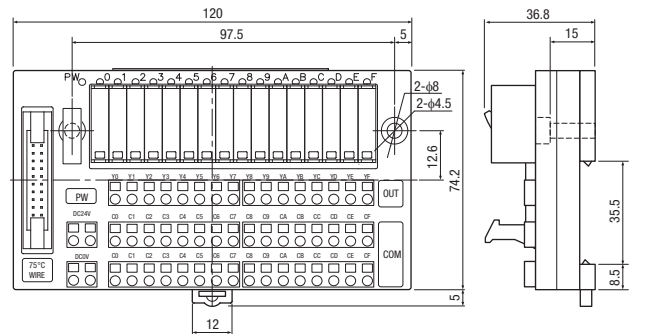
Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

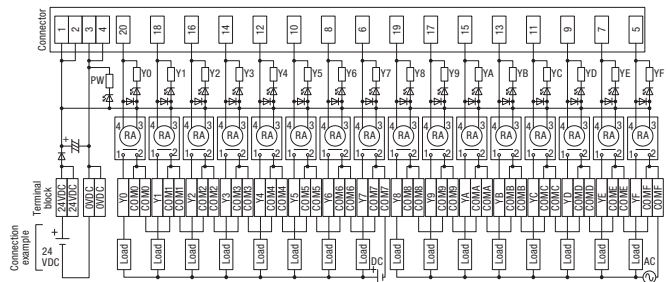
Specifications

| Item | Specifications | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| Terminal output type | Sink output | |
| No. of points | 16 | |
| Rated load voltage/current | Voltage/current: Depends on the module used. | |
| Maximum number of simultaneous on points | 100%. When triac or transistor modules are mounted, this value depends on the load current characteristics. | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%, SELV and LIM or Class 2) | |
| Module current consumption | Approx. 10mA at 24VDC (not including current consumption of module connected and programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Mountable module | N/O contact relay: FA-NYP24WK*, N/C contact relay: FA-NYBP24WK*, triac: FA-SN24A01FS*, transistor: FA-SN24D01HZS*, Signal pass-through (DC output): FA-SN00SS* | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Number of terminals | 52P |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG) |
| | Wire strip length | 8mm |
| Module installation | Screw | M4 × 0.7mm × 22mm or more |
| | DIN rail | Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) |
| Weight | Approx. 160g | |

External dimensions



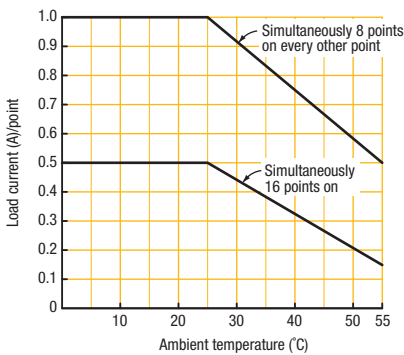
Connection diagram



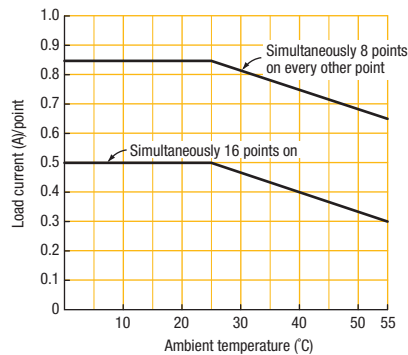
: This is a diagram when the FA-NYP24WK (N/O contact relay module) is mounted.

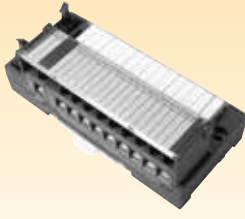
Load current characteristics

When a triac module is mounted



When a transistor module is mounted





M3-screw, module type, 16-point N/O contact relay output (1-wire type, 16 points/common)

FA-TH16YRA11

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.

Related materials Selection notes P.222 Precautions for use P.226

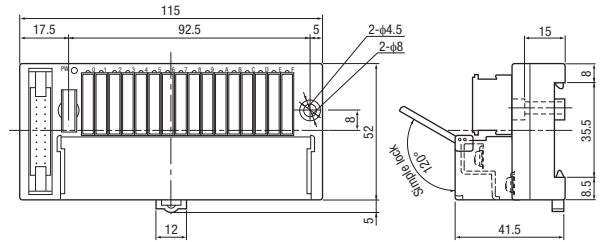
Specifications

| Item | Specifications |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, $\text{COS}\phi = 1$), 8A/common |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A ($\text{COS}\phi = 0.7$), 240VAC 1A ($\text{COS}\phi = 0.7$) |
| | 100000 times or more at 200VAC 1A ($\text{COS}\phi = 0.35$) |
| | 100000 times or more at 24VDC 1A ($L/R = 7\text{ms}$), 100VDC 0.1A ($L/R = 7\text{ms}$) |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16 points/common (1-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between external power supply and outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Not provided (Modules cannot be replaced.) |
| No. of times to replace module | - |
| Module mixing | - |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 20P, 7.62mm pitch |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | - |
| Weight | Approx. 220g |

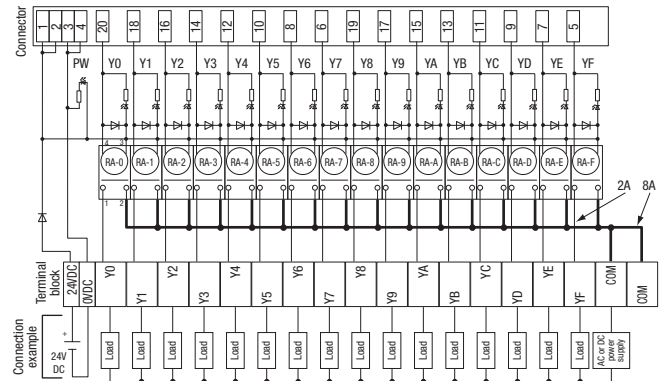
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

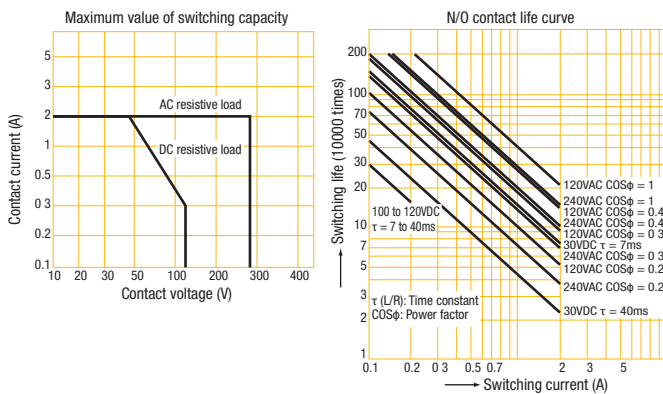
(Unit: mm)



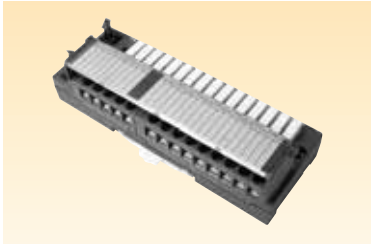
Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point N/O contact relay output (2-wire type, 16 points/common)

FA-TH16YRA21

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.

Related materials Selection notes P.222 Precautions for use P.226

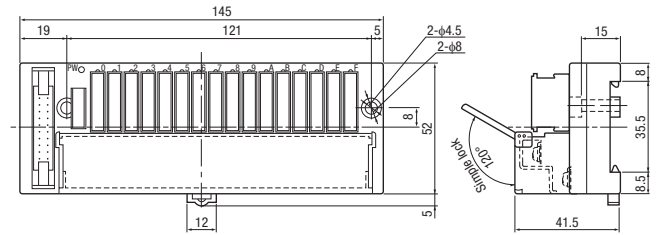
Specifications

| Item | Specifications | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| No. of points | 16 | |
| Isolation method | Relay | |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, COSφ = 1), 8A/common | |
| Maximum number of simultaneous on points | 100% | |
| Minimum switching load | 5VDC 1mA | |
| Maximum switching load | 270VAC, 150VDC | |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more at rated switching voltage/current | |
| | 100000 times or more at 200VAC 1.5A (COSφ = 0.7), 240VAC 1A (COSφ = 0.7) | |
| | 100000 times or more at 200VAC 1A (COSφ = 0.35) | |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) | |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) | |
| | ON → OFF 12ms or less (excluding programmable controller response time) | |
| Wiring method for common | 16 points/common (2-wire type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between external power supply and outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Not provided (Modules cannot be replaced.) | |
| No. of times to replace module | - | |
| Module mixing | - | |
| Terminal block | Terminal screw | M3 spring-up screws, number of terminals: 28P, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | - | |
| Weight | Approx. 260g | |

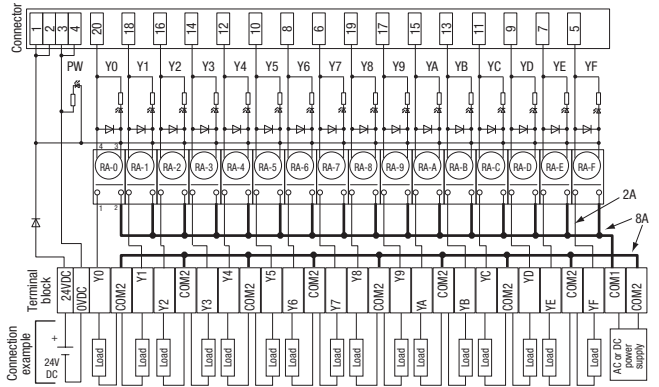
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

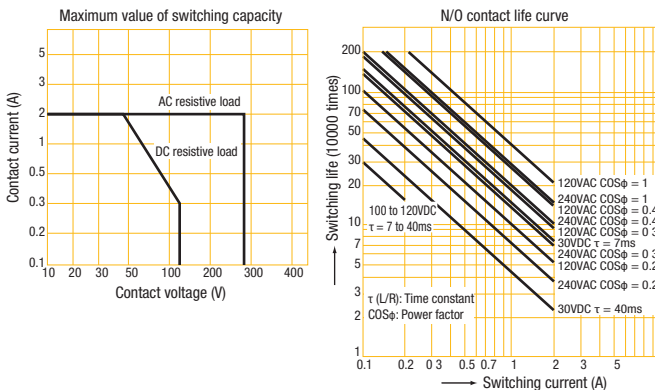
(Unit: mm)



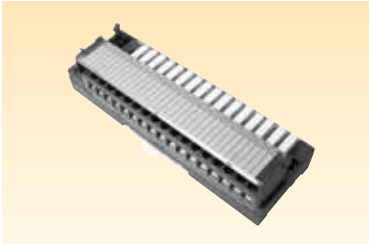
Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point N/O contact relay output (independent common) FA-TH16YRA20

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.

Related materials Selection notes P.222 Precautions for use P.226

Related products M3 short-circuit bar P.286

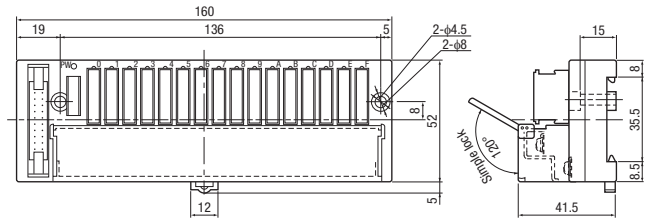
Specifications

| Item | Specifications | |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| No. of points | 16 | |
| Isolation method | Relay | |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, $\text{COS}\phi = 1$) | |
| Maximum number of simultaneous on points | 100% | |
| Minimum switching load | 5VDC 1mA | |
| Maximum switching load | 270VAC, 150VDC | |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more at rated switching voltage/current | |
| | 100000 times or more at 200VAC 1.5A ($\text{COS}\phi = 0.7$), 240VAC 1A ($\text{COS}\phi = 0.7$) | |
| | 100000 times or more at 200VAC 1A ($\text{COS}\phi = 0.35$) | |
| | 100000 times or more at 24VDC 1A ($L/R = 7\text{ms}$), 100VDC 0.1A ($L/R = 7\text{ms}$) | |
| Response time | OFF → ON ON → OFF | |
| | 10ms or less (excluding programmable controller response time) 12ms or less (excluding programmable controller response time) | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between external power supply and outputs, between outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Not provided (Modules cannot be replaced.) | |
| No. of times to replace module | - | |
| Module mixing | - | |
| Terminal block | Terminal screw | M3 spring-up screws, number of terminals: 34P, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | - | |
| Weight | Approx. 280g | |

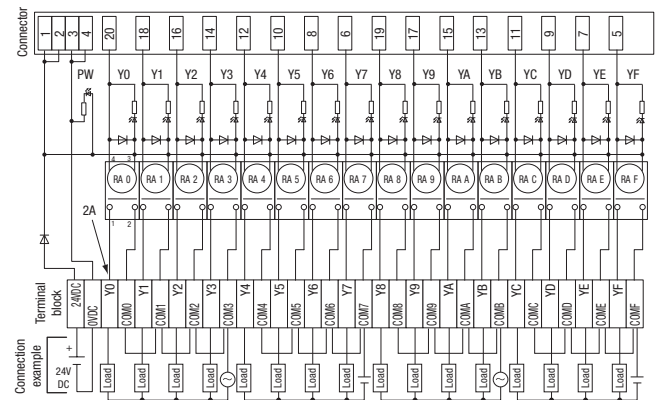
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

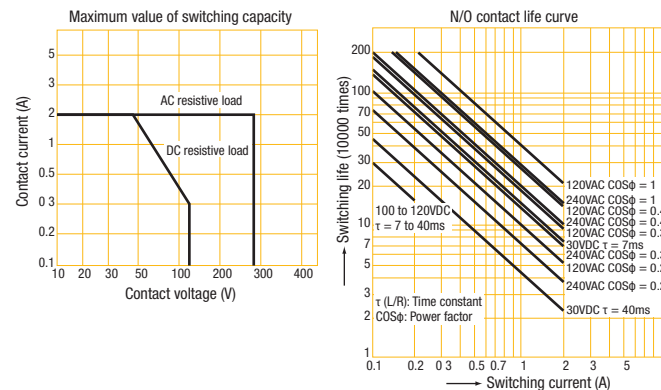
(Unit: mm)



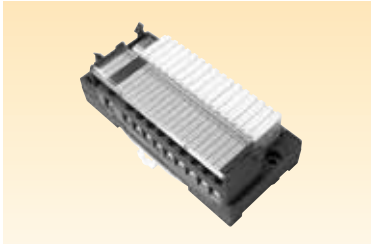
Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point N/O contact relay output (1-wire type, 16 points/common; with sockets)

FA-TH16YRA11S

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

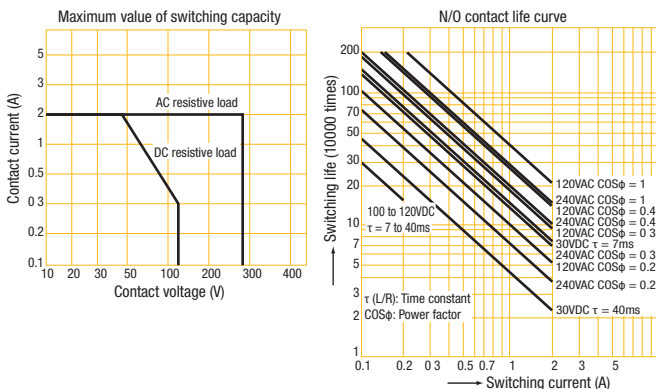
Related products Replacement modules P.284 Module extraction tool P.287

Specifications

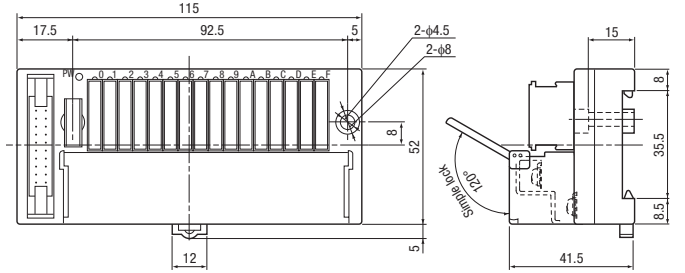
| Item | Specifications |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, $\text{COS}\phi = 1$), 8A/common |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A ($\text{COS}\phi = 0.7$), 240VAC 1A ($\text{COS}\phi = 0.7$) |
| | 100000 times or more at 200VAC 1A ($\text{COS}\phi = 0.35$) |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16 points/common (1-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between external power supply and outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Relay modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 20P, 7.62mm pitch |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 240g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

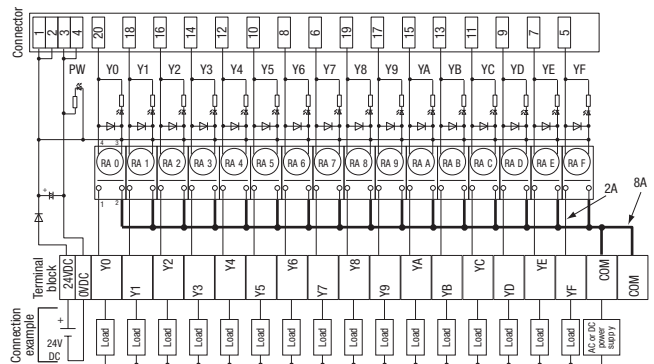
Relay characteristics data



External dimensions



Connection diagram



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point N/O contact relay output (2-wire type, 16 points/common; with sockets)

FA-TH16YRA21S

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

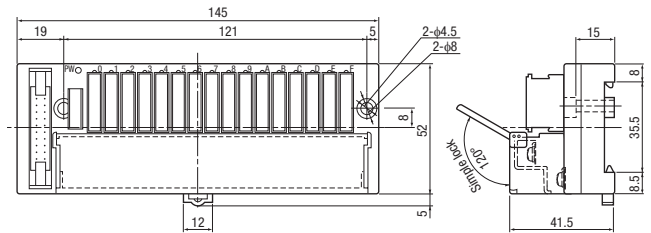
Specifications

| Item | Specifications | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| No. of points | 16 | |
| Isolation method | Relay | |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, $\text{COS}\phi = 1$), 8A/common | |
| Maximum number of simultaneous on points | 100% | |
| Minimum switching load | 5VDC 1mA | |
| Maximum switching load | 270VAC, 150VDC | |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more at rated switching voltage/current | |
| | 100000 times or more at 200VAC 1.5A ($\text{COS}\phi = 0.7$), 240VAC 1A ($\text{COS}\phi = 0.7$) | |
| | 100000 times or more at 200VAC 1A ($\text{COS}\phi = 0.35$) | |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) | |
| Response time | OFF → ON ON → OFF 10ms or less (excluding programmable controller response time) 12ms or less (excluding programmable controller response time) | |
| Wiring method for common | 16 points/common (2-wire type) | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between external power supply and outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Relay modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Not possible | |
| Terminal block | Terminal screw | M3 spring-up screws, number of terminals: 28P, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | | Module extraction tool |
| Weight | | Approx. 280g |

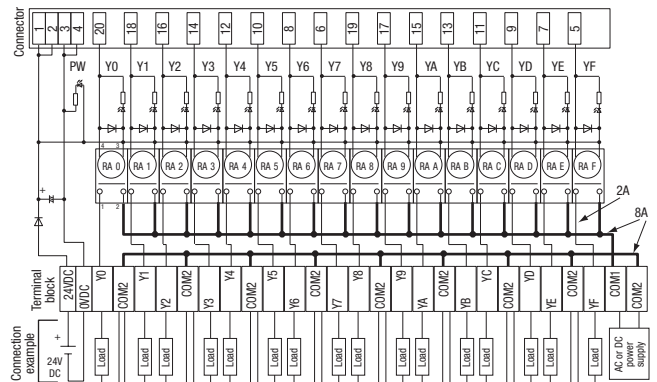
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

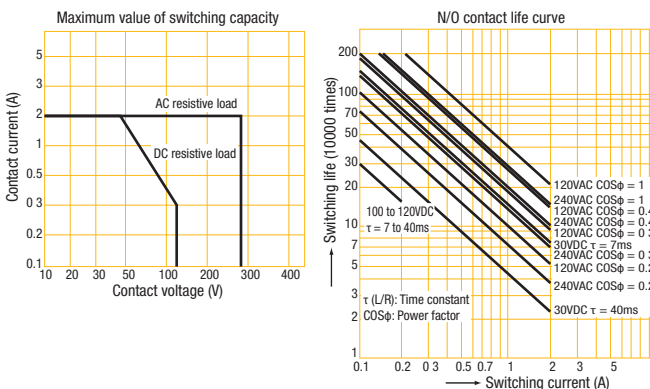
(Unit: mm)



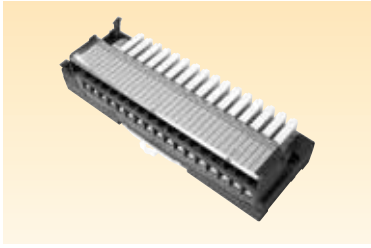
Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point N/O contact relay output (independent common; with sockets)

FA-TH16YRA20S

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

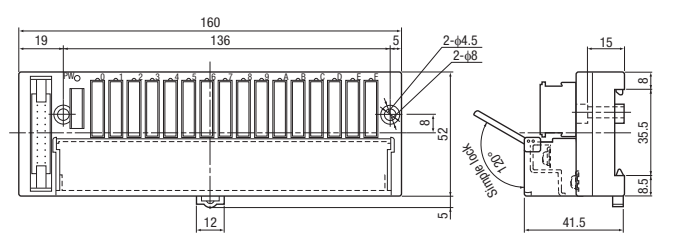
Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

Specifications

| Item | Specifications |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, COSφ = 1) |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A (COSφ = 0.7), 240VAC 1A (COSφ = 0.7) |
| | 100000 times or more at 200VAC 1A (COSφ = 0.35) |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between external power supply and outputs, between outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Relay modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Possible |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 34P, 7.62mm pitch |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 300g |

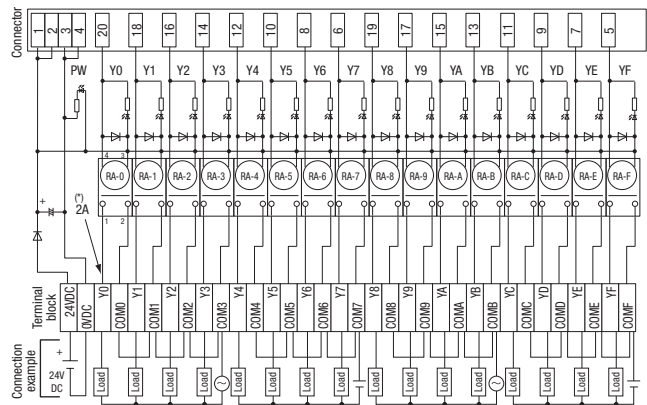
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



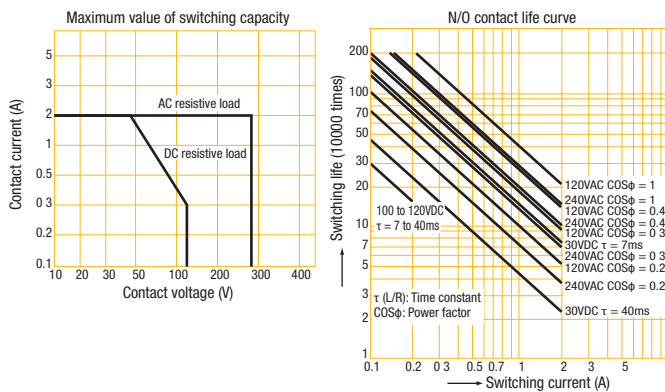
(Unit: mm)

Connection diagram



*:1A when different modules are mixed together and a triac or transistor module is used. Check the specifications for triac (FA-TH16YSR20S) and transistor (FA-TH16YTR20S) modules.

Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point N/O contact relay output (independent common; with sockets)

FA1-TH1E16Y2RA20S

- This module converts the input from the MELSEC source-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

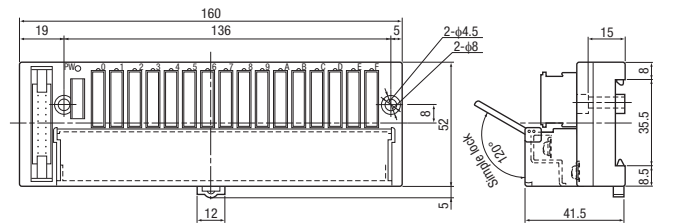
Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

Specifications

| Item | Specifications |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Source-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, $\text{COS}\phi = 1$) |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A ($\text{COS}\phi = 0.7$), 240VAC 1A ($\text{COS}\phi = 0.7$) |
| | 100000 times or more at 200VAC 1A ($\text{COS}\phi = 0.35$) |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between external power supply and outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10M Ω or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1 μ s (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Relay modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Possible |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 34P, 7.62mm pitch |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 300g |

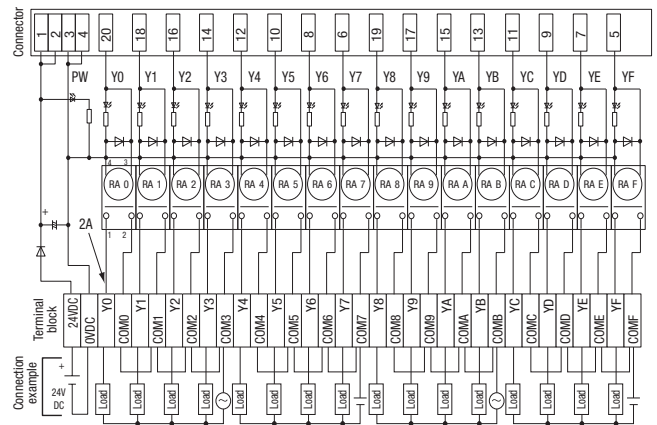
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

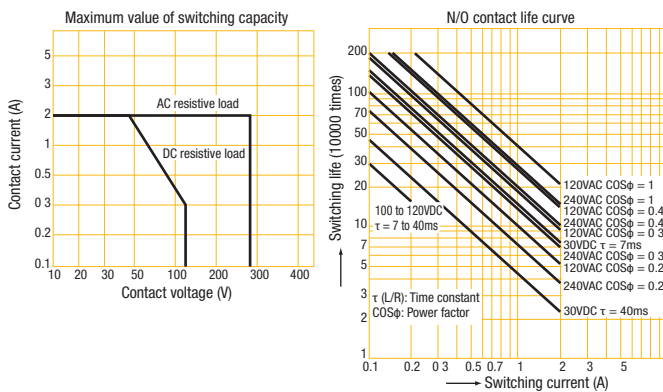


(Unit: mm)

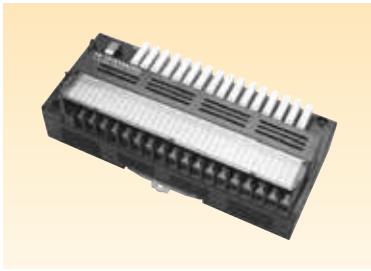
Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3.5-screw, module type, 16-point N/O contact relay output (independent common; with sockets)

FA-TH16YRA20SL

- This module converts the input from the MELSEC sink-type transistor output module to N/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)
- Using M3.5 terminal screws, the module supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

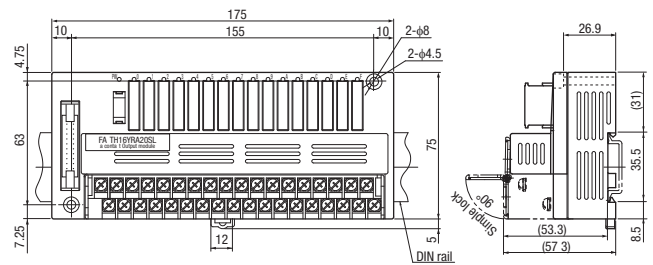
Specifications

| Item | Specifications | |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| No. of points | 16 | |
| Isolation method | Relay | |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, COSφ = 1) | |
| Maximum number of simultaneous on points | 100% | |
| Minimum switching load | 5VDC 1mA | |
| Maximum switching load | 270VAC, 150VDC | |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) | |
| Mechanical life | 20 million times or more | |
| Electrical life | 100000 times or more at rated switching voltage/current | |
| | 100000 times or more at 200VAC 1.5A (COSφ = 0.7), 240VAC 1A (COSφ = 0.7) | |
| | 100000 times or more at 200VAC 1A (COSφ = 0.35) | |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) | |
| Response time | OFF → ON ON → OFF | |
| | 10ms or less (excluding programmable controller response time) | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between external power supply and outputs, between outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Relay modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Terminal screw | M3.5 screws, number of terminals: 36P, 8.0mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 68 to 92N-cm (7 to 9kgf-cm) |
| Module installation | Screw | M4 × 35mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | | Module extraction tool |
| Weight | | Approx. 390g |

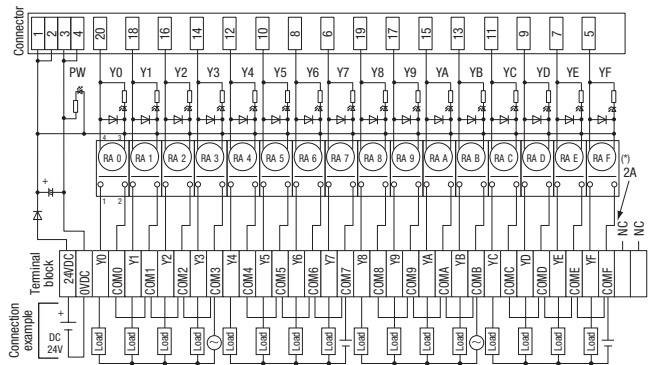
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)

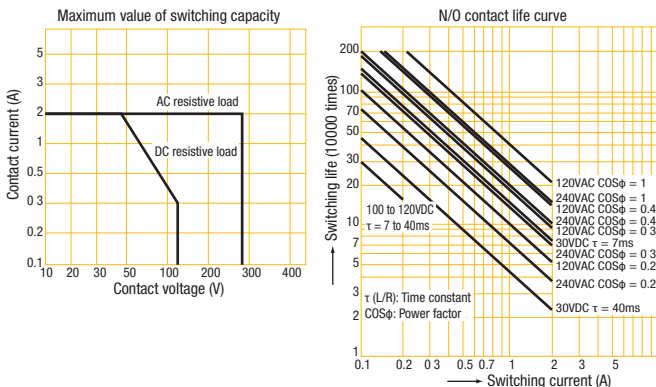


Connection diagram

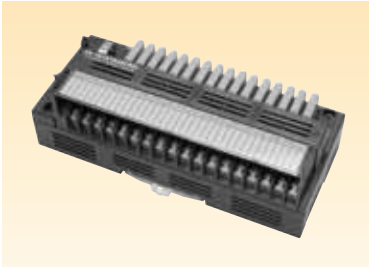


*:1A when different modules are mixed together and a triac or transistor module is used. Check the specifications for triac (FA-TH16YSR20S) and transistor (FA-TH16YTR20S) modules.

Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3.5-screw, module type, 16-point N/C contact relay output (independent common; with sockets)

FA-TH16YRAB20SL

- This module converts the input from the MELSEC sink-type transistor output module to N/C contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)
- Using M3.5 terminal screws, the module supports thick wires (with a wire diameter of 1.25 to 2mm²) used for wiring outside the panel.

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

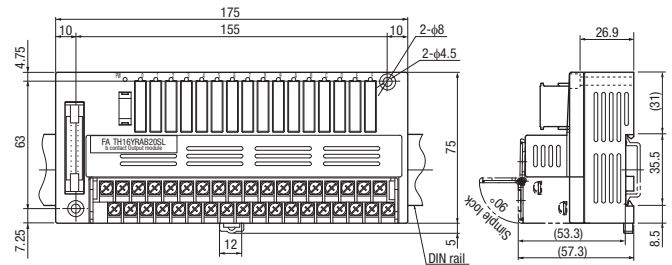
Specifications

| Item | Specifications |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 2A/1 contact (resistance load, COSφ = 1) |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A (COSφ = 0.7), 240VAC 1A (COSφ = 0.7) |
| | 100000 times or more at 200VAC 1A (COSφ = 0.35) |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) |
| Response time | OFF → ON ON → OFF |
| | 10ms or less (excluding programmable controller response time) 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between external power supply and outputs, between outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1500V _{p-p} , noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Relay modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Possible |
| Terminal block | Terminal screw M3.5 screws, number of terminals: 36P, 8.0mm pitch |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 68 to 92N·cm (7 to 9kgf·cm) |
| Module Screw | M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| Installation DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 390g |

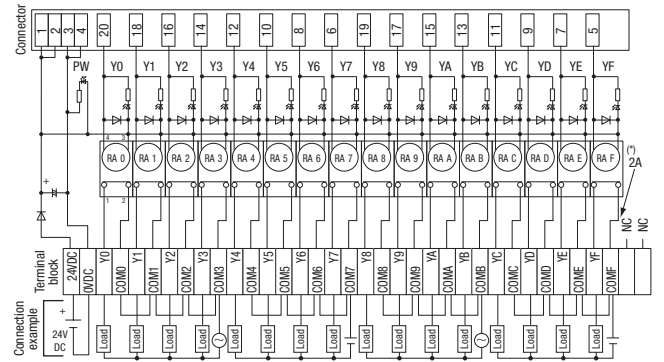
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)

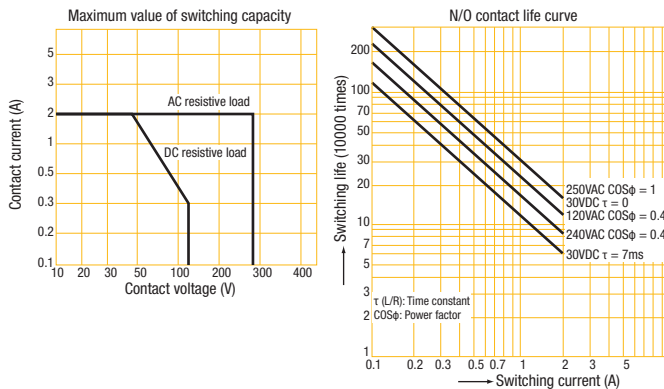


Connection diagram

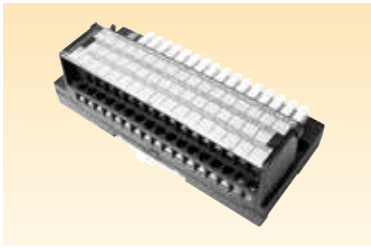


*1A when different modules are mixed together and a triac or transistor module is used. Check the specifications for triac (FA-TH16YSR20S) and transistor (FA-TH16YTR20S) modules.

Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point C/O contact relay output (independent common; with sockets)

FA-TH16YRAC20S

- This module converts the input from the MELSEC sink-type transistor output module to C/O contact relay output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

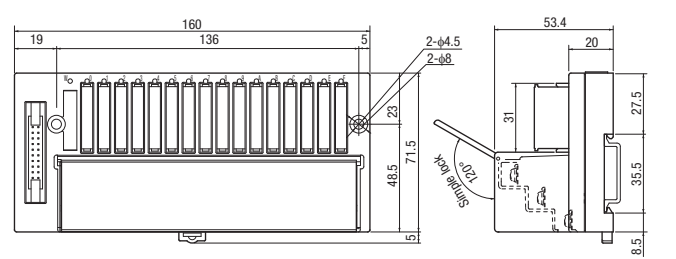
Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

Specifications

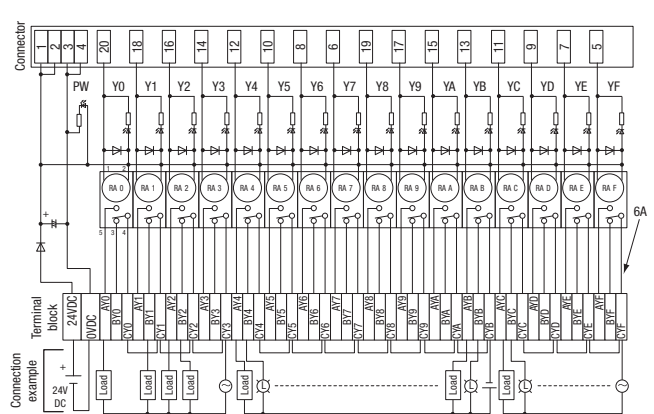
| Item | Specifications |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC, Current: 6A/1 contact (resistance load, $\text{COS}\phi = 1$) |
| Maximum number of simultaneous on points | 100% (at maximum switching current of 4.5A) |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 277VAC, 125VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 10 million times or more |
| Electrical life | 250VAC 6A ($\text{COS}\phi = 1$), 30VDC 6A ($\tau = 0$), Make contact: 50000 times or more/break contact: 30000 times or more |
| | 250VAC 3A ($\text{COS}\phi = 1$), 200VAC 2.2A ($\text{COS}\phi = 0.7$), 250VAC 1.8A ($\text{COS}\phi = 0.7$) Make contact: 100000 times or more/break contact: 60000 times or more |
| | 100VAC 1.3A ($\text{COS}\phi = 0.4$), 200VAC 1.1A ($\text{COS}\phi = 0.4$), 250VAC 0.9A ($\text{COS}\phi = 0.4$) Make contact: 100000 times or more/break contact: 60000 times or more |
| | 30VDC 3A ($\tau = 0$), 24VDC 1.5A ($\tau = 7\text{ms}$), 100VDC 0.2A ($\tau = 7\text{ms}$) Make contact: 100000 times or more/break contact: 60000 times or more |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 220mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between external power supply and outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Relay modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | - |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 50P, 7.62mm pitch |
| | Applicable wire, tightening torque Ø 3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 440g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

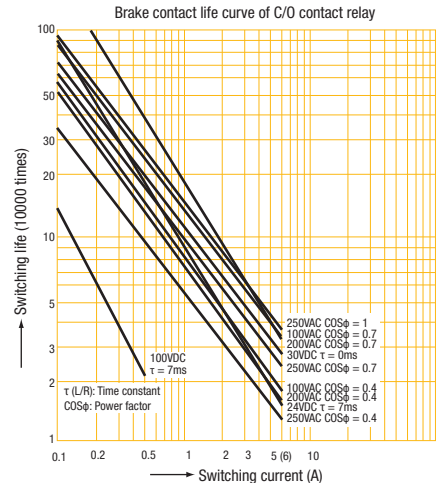
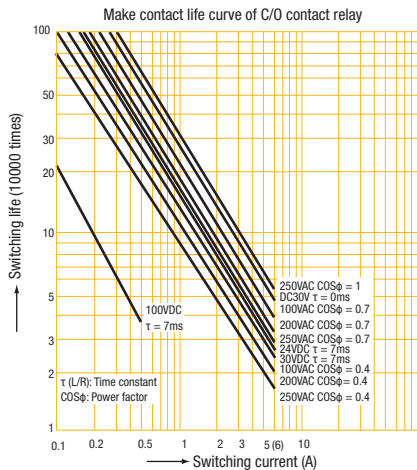
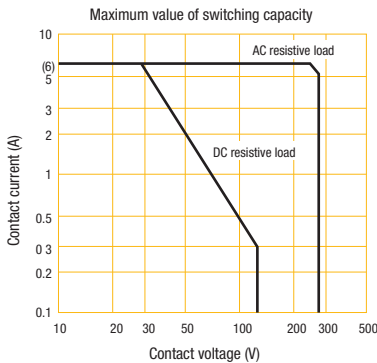
External dimensions



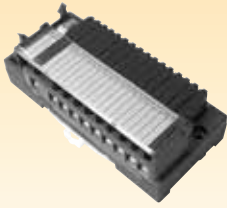
Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



M3-screw, module type, 16-point 1.0A triac output (1-wire type, 16 points/common; with sockets)

FA-TH16YSR11S

- This module converts the input from the MELSEC sink-type transistor output module to triac output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable triac modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

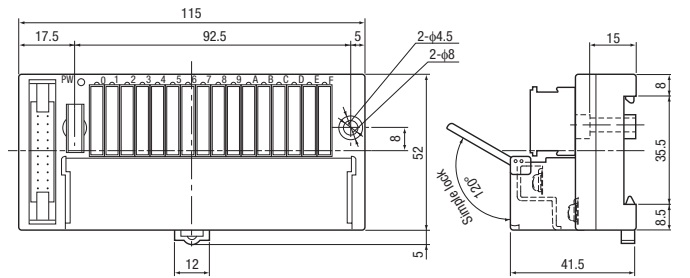
Related products Replacement modules P.284 Module extraction tool P.287

Specifications

| Item | Specifications |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 30 to 240VAC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 10mA |
| Maximum load current | 1.0A/point, 8A/common |
| Maximum inrush current | 25A (60Hz, 1 cycle) |
| Leakage current at off | 1.5mA/arms or less (at 100VACrms 60Hz), 3.0mA/arms or less (at 200VACrms 60Hz) |
| Maximum voltage drop at ON | 2.5Vrms or less |
| Response time | OFF → ON: 1ms or less ON → OFF: 1ms + 1/2 cycle or less |
| Surge suppressor | Varistor, snubber circuit (built in triac module) |
| Fuse | None |
| Wiring method for common | 16 points/common (1-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 180mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (triac modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw: M3 spring-up screws, number of terminals: 20P, 7.62mm pitch Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw: M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 240g |

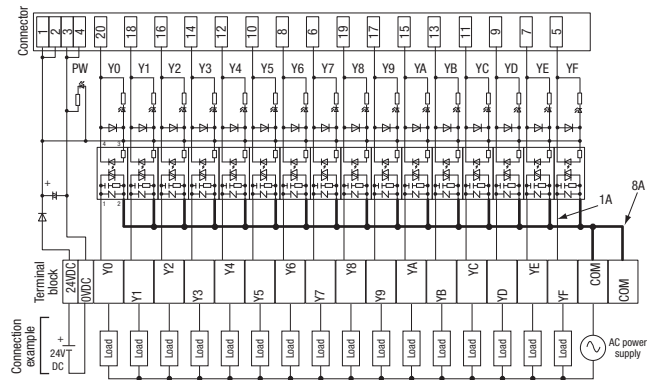
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

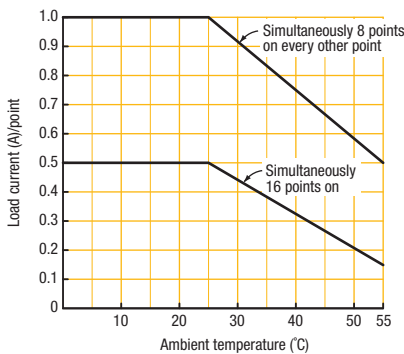


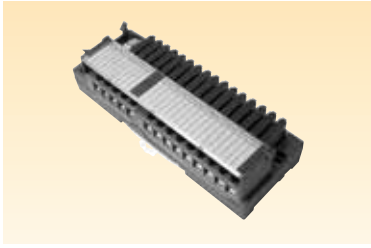
(Unit: mm)

Connection diagram



Load current characteristics





M3-screw, module type, 16-point 1.0A triac output (2-wire type, 16 points/common; with sockets)

FA-TH16YSR21S

- This module converts the input from the MELSEC sink-type transistor output module to triac output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable triac modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

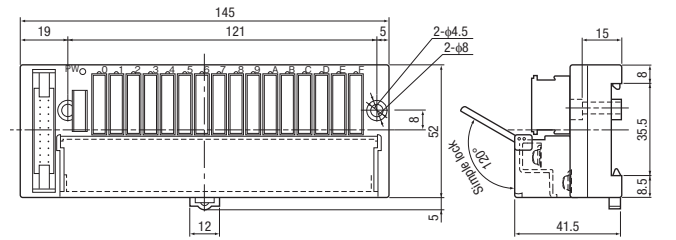
Related products Replacement modules P.284 Module extraction tool P.287

Specifications

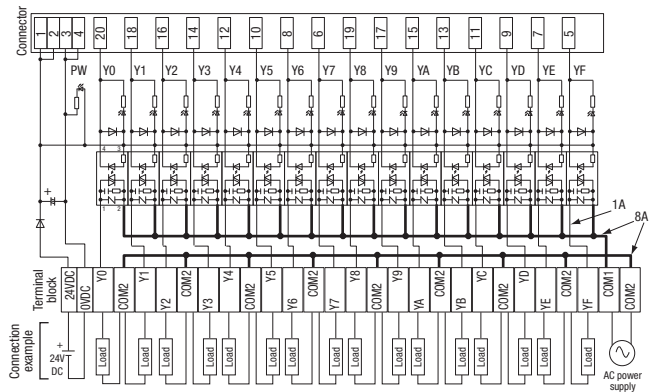
| Item | Specifications |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 30 to 240VAC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 10mA |
| Maximum load current | 1.0A/point, 8A/common |
| Maximum inrush current | 25A (60Hz, 1 cycle) |
| Leakage current at off | 1.5mA/arms or less (at 100VACrms 60Hz), 3.0mA/arms or less (at 200VACrms 60Hz) |
| Maximum voltage drop at ON | 2.5Vrms or less |
| Response time | OFF → ON: 1ms or less ON → OFF: 1ms + 1/2 cycle or less |
| Surge suppressor | Varistor, snubber circuit (built in triac module) |
| Fuse | None |
| Wiring method for common | 16 points/common (2-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 180mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Triac modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw: M3 spring-up screws, number of terminals: 28P, 7.62mm pitch |
| | Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw: M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 280g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

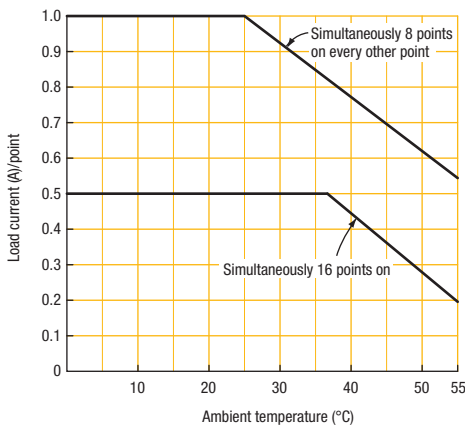
External dimensions

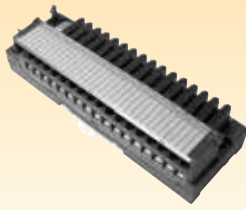


Connection diagram



Load current characteristics





M3-screw, module type, 16-point 1.0A triac output (independent common; with sockets) FA-TH16YSR20S

- This module converts the input from the MELSEC sink-type transistor output module to triac output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable triac modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

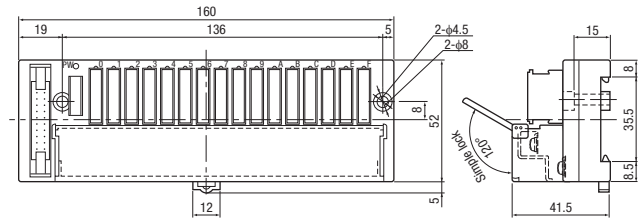
Specifications

| Item | Specifications | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module | |
| No. of points | 16 | |
| Isolation method | Photocoupler | |
| Rated load voltage | 30 to 240VAC | |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. | |
| Minimum load current | 10mA | |
| Maximum load current | 1.0A/point | |
| Maximum inrush current | 25A (60Hz, 1 cycle) | |
| Leakage current at off | 1.5mA _{rms} or less (at 100VAC _{rms} 60Hz), 3.0mA _{rms} or less (at 200VAC _{rms} 60Hz) | |
| Maximum voltage drop at ON | 2.5V _{rms} or less | |
| Response time | OFF → ON: 1ms or less ON → OFF: 1ms + 1/2 cycle or less | |
| Surge suppressor | Varistor, snubber circuit (built in triac module) | |
| Fuse | None | |
| Wiring method for common | 16-point independent common | |
| External power supply | 24VDC±10% (ripple ratio: within 5%) | |
| Module current consumption | Approx. 180mA at 24VDC (not including current consumption of programmable controller) | |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more | |
| Noise immunity | Simulator noise 1500V _{p-p} , noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) | |
| Operation display | The LED turns on when the power is on and output is on. | |
| Socket | Provided (Triac modules are replaceable.) | |
| No. of times to replace module | 50 times | |
| Module mixing | Possible | |
| Terminal block | Terminal screw | M3 spring-up screws, number of terminals: 34P, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool | |
| Weight | Approx. 300g | |

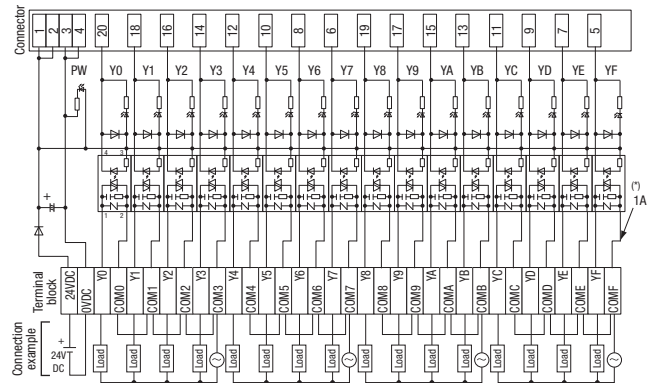
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

(Unit: mm)

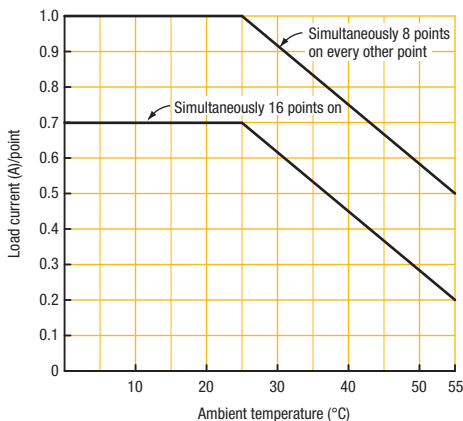


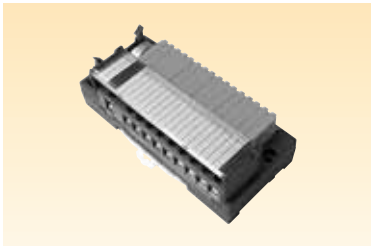
Connection diagram



*:2A when different modules are mixed together and a relay module is used. Check the specifications for a relay module (FA-TH16YRA20S).
For the specifications of a transistor module, check the description about the FA-TH16YTR20S.

Load current characteristics





M3-screw, module type, 16-point 1.0A transistor output (sink-type to sink-type, 1-wire type, 16 points/common; with sockets) FA-TH16YTL11S

- This module converts the input from the MELSEC sink-type transistor output module to 1.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable transistor modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

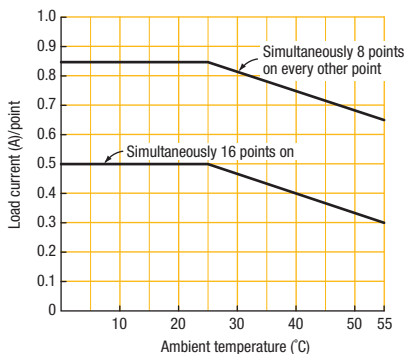
Related products Replacement modules P.284 Module extraction tool P.287

Specifications

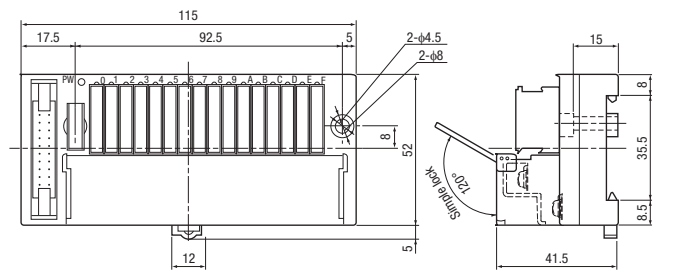
| Item | Specifications |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| Terminal output type | Sink output |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 3 to 30VDC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 1.0mA |
| Maximum load current | 1.0A/point, 8A/common |
| Maximum inrush current | 3A 10ms |
| Leakage current at off | 0.1mA or lower (at 30VDC) |
| Maximum voltage drop at ON | 1.5V or less |
| Response time | OFF → ON: 1ms or less ON → OFF: 1ms or less |
| Surge suppressor | Zener diode (built in transistor module) |
| Fuse | None |
| Wiring method for common | 16 points/common (1-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Transistor modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw: M3 spring-up screws, number of terminals: 20P, 7.62mm pitch |
| | Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw: M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 230g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

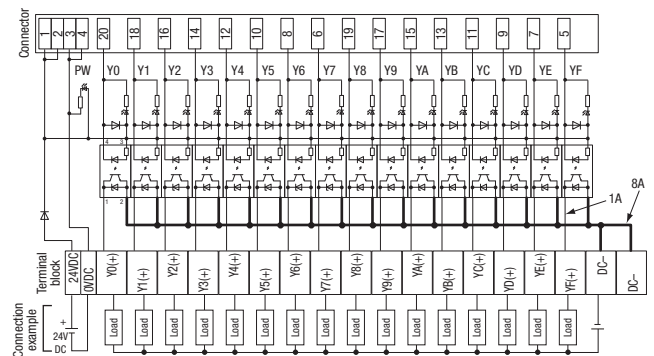
Load current characteristics

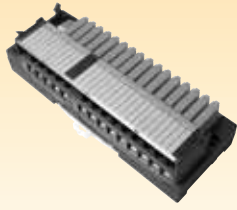


External dimensions



Connection diagram





M3-screw, module type, 16-point 1.0A transistor output (sink-type to sink-type, 2-wire type, 16 points/common; with sockets) FA-TH16YTL21S

- This module converts the input from the MELSEC sink-type transistor output module to 1.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable transistor modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

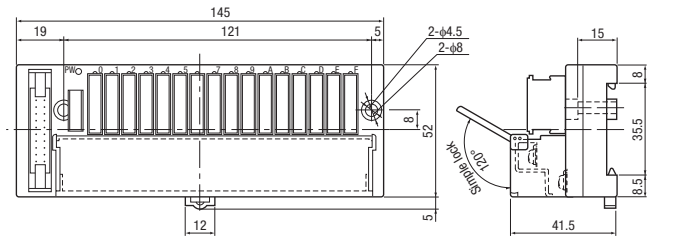
Related products Replacement modules P.284 Module extraction tool P.287

Specifications

| Item | Specifications |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| Terminal output type | Sink output |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 3 to 30VDC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 1.0mA |
| Maximum load current | 1.0A/point, 8A/common |
| Maximum inrush current | 3A 10ms |
| Leakage current at off | 0.1mA or lower (at 30VDC) |
| Maximum voltage drop at ON | 1.5V or less |
| Response time | OFF → ON ON → OFF |
| Surge suppressor | Zener diode (built in transistor module) |
| Fuse | None |
| Wiring method for common | 16 points/common (2-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Transistor modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 28P, 7.62mm pitch Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 260g |

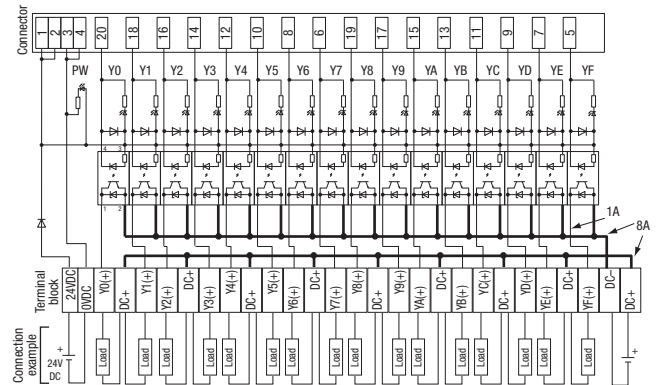
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

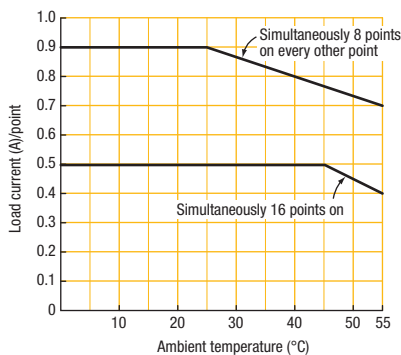


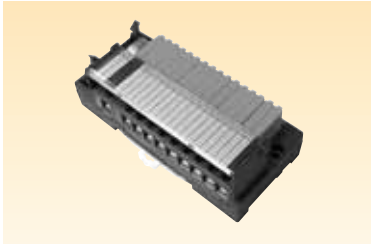
(Unit: mm)

Connection diagram



Load current characteristics





M3-screw, module type, 16-point 1.0A transistor output (sink-type to source-type, 1-wire type, 16 points/common; with sockets) FA-TH16YTH11S

- This module converts the input from the MELSEC sink-type transistor output module to 1.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable transistor modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

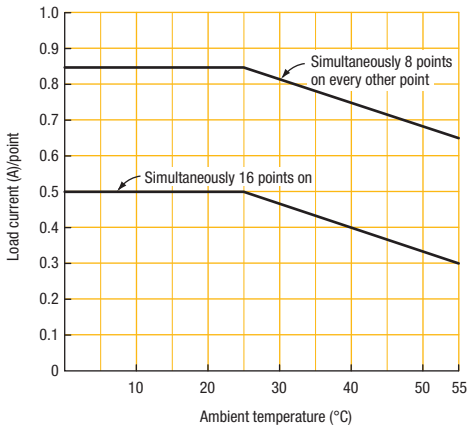
Related products Replacement modules P.284 Module extraction tool P.287

Specifications

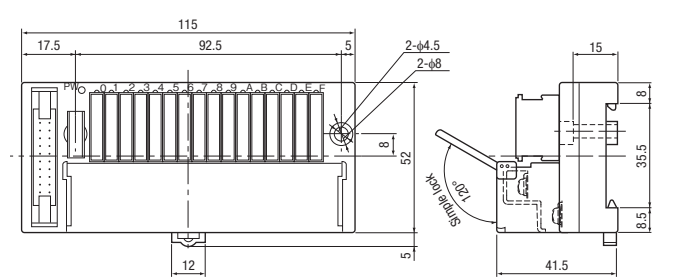
| Item | Specifications |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| Terminal output type | Source output |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 3 to 30VDC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 1.0mA |
| Maximum load current | 1.0A/point, 8A/common |
| Maximum inrush current | 3A 10ms |
| Leakage current at off | 0.1mA or lower (at 30VDC) |
| Maximum voltage drop at ON | 1.5V or less |
| Response time | OFF → ON: 1ms or less ON → OFF: 1ms or less |
| Surge suppressor | Zener diode (built in transistor module) |
| Fuse | None |
| Wiring method for common | 16 points/common (1-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Transistor modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw: M3 spring-up screws, number of terminals: 20P, 7.62mm pitch Applicable wire, tightening torque: 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw: M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 230g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

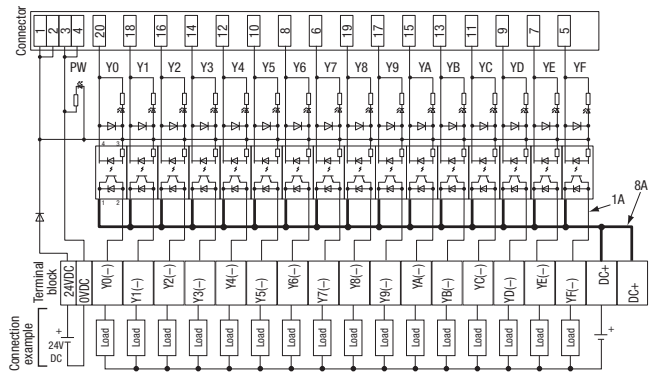
Load current characteristics

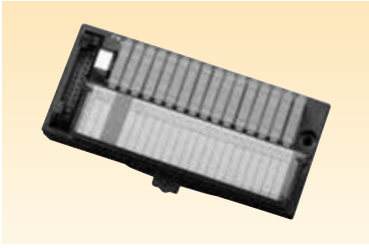


External dimensions



Connection diagram





M3-screw, module type, 16-point 1.0A transistor output (source-type to source-type, 1-wire type, 16 points/common; with sockets) FA-THE16YTH11S

- This module converts the input from the MELSEC source-type transistor output module to 1.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable transistor modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

Related products Replacement modules P.284 Module extraction tool P.287

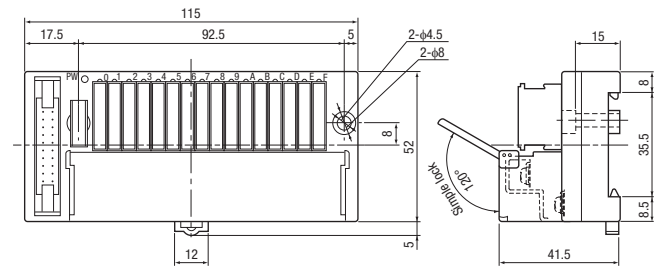
Specifications

| Item | Specifications |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Source-type 24VDC transistor output module |
| Terminal output type | Source output |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 3 to 30VDC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 1.0mA |
| Maximum load current | 1.0A/point, 8A/common |
| Maximum inrush current | 3A 10ms |
| Leakage current at off | 0.1mA or lower (at 30VDC) |
| Maximum voltage drop at ON | 1.5V or less |
| Response time | OFF → ON ON → OFF |
| Surge suppressor | Zener diode (built in transistor module) |
| Fuse | None |
| Wiring method for common | 16 points/common (1-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Transistor modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 20P, 7.62mm pitch Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 230g |

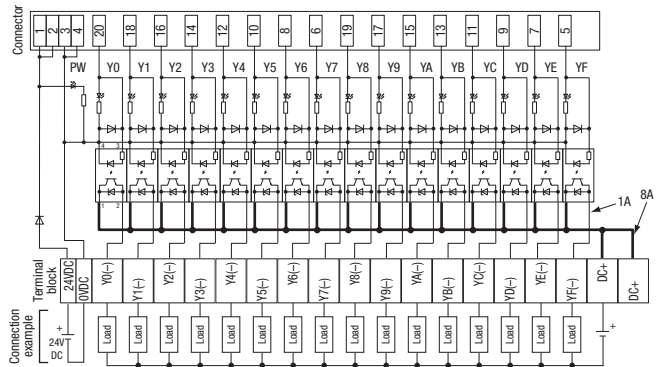
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

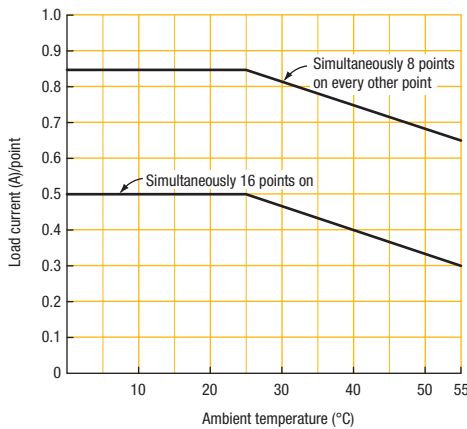
(Unit: mm)

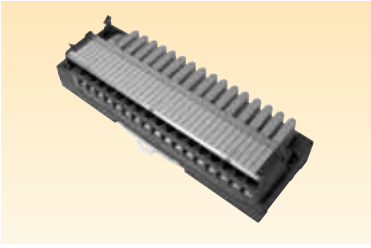


Connection diagram



Load current characteristics





M3-screw, module type, 16-point 1.0A transistor output (sink-type to sink/source-type, independent common; with sockets) FA-TH16YTR20S

- This module converts the input from the MELSEC sink-type transistor output module to 1.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable transistor modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

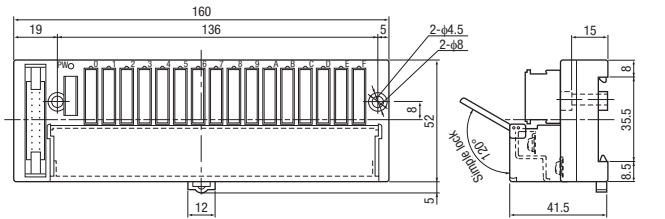
Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

Specifications

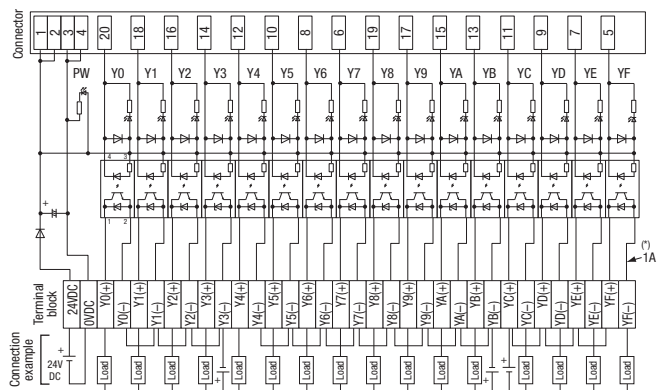
| Item | Specifications |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| Terminal output type | Sink/source output |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 3 to 30VDC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 1.0mA |
| Maximum load current | 1.0A/point |
| Maximum inrush current | 3A 10ms |
| Leakage current at off | 0.1mA or lower (at 30VDC) |
| Maximum voltage drop at ON | 1.5V or less |
| Response time | OFF → ON ON → OFF |
| Surge suppressor | Zener diode (built in transistor module) |
| Fuse | None |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Transistor modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Possible |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 34P, 7.62mm pitch Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 290g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

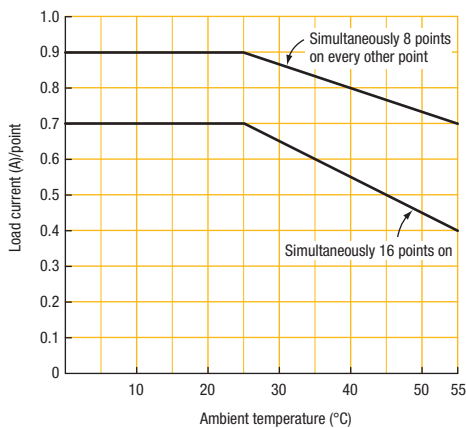


Connection diagram



*:2A when different modules are mixed together and a relay module is used. Check the specifications for a relay module (FA-TH16YRA20S).
For the specifications of a triac, check the description about the FA-TH16YSR20S.

Load current characteristics





M3-screw 16-point 2.0A transistor output (sink-type to sink/source-type, independent common) FA-TH16Y2TR20

- This module converts the input from the MELSEC sink-type transistor output module to 2.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.

Related materials Selection notes P.222 Precautions for use P.226

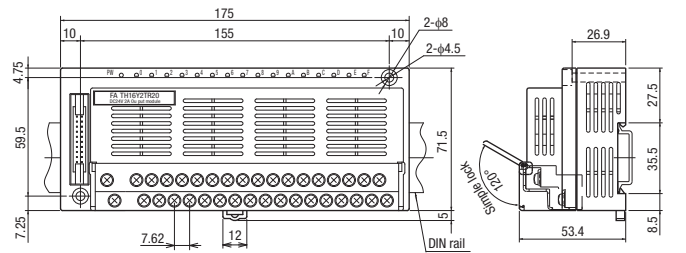
Related products M3 short-circuit bar P.286

Specifications

| Item | Specifications |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Sink-type 24VDC transistor output module |
| Terminal output type | Sink/source output |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 5/12/24VDC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 1.0mA |
| Maximum load current | 2.0A/point (t = L/R = 7ms or less) |
| Maximum inrush current | 8A 10ms or less |
| Leakage current at off | 0.1mA or less |
| Maximum voltage drop at ON | 0.3V (for a load current of 2A) |
| Response time | OFF → ON ON → OFF |
| Surge suppressor | Zener diode |
| Fuse | None |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Module current consumption | Approx. 210mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 560VACrms/3 cycles (altitude: 2000m), 10MΩ or more |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Terminal block | Terminal screw M3 spring-up screws, number of terminals: 36P, 7.62mm pitch Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw M4 × 35mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | Approx. 310g |

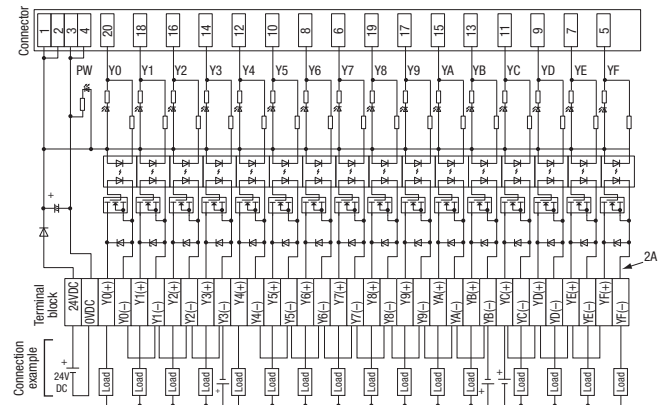
Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions

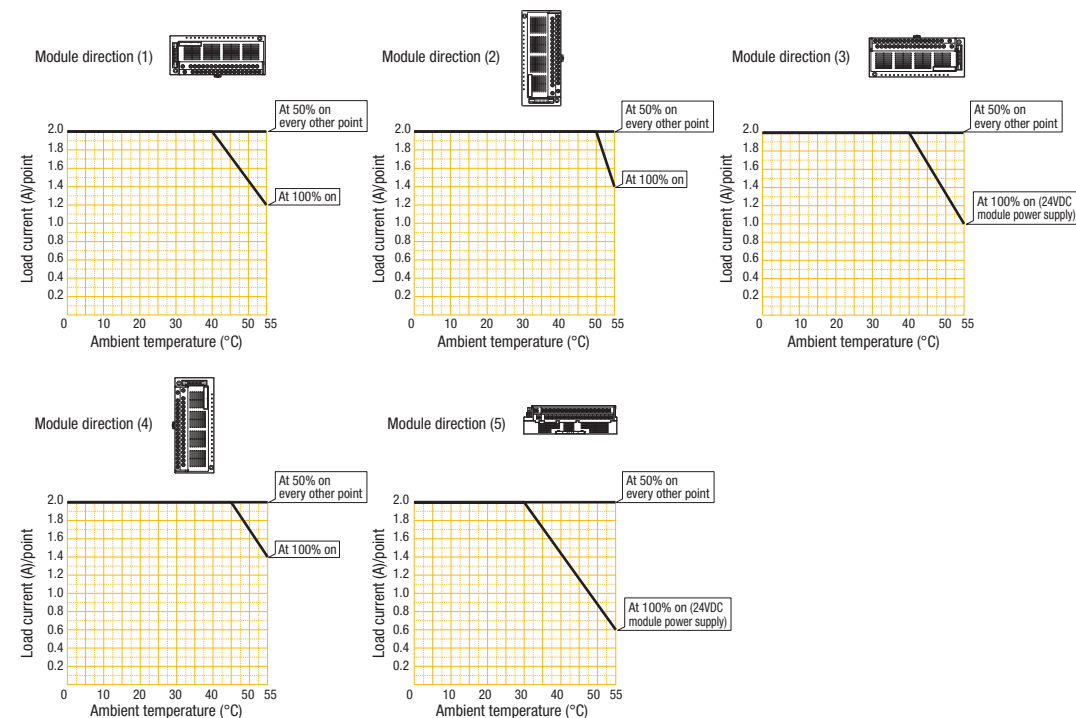


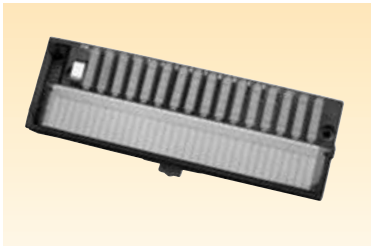
(Unit: mm)

Connection diagram



Load current characteristics





M3-screw, module type, 16-point 1.0A transistor output (source-type to sink/source-type, independent common; with sockets) FA-THE16YTR20S

- This module converts the input from the MELSEC source-type transistor output module to 1.0A transistor output.
- When a 64-point output module is used, output conversion for a maximum of 64 points can be made per one slot.
- Sockets enable transistor modules to be replaced individually. (Easy maintenance)

Related materials Selection notes P.222 Precautions for use P.226

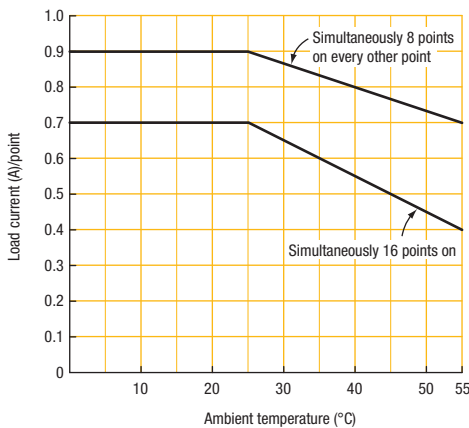
Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

Specifications

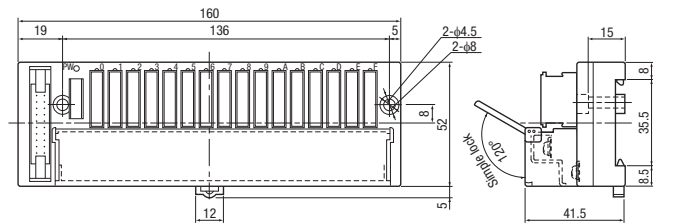
| Item | Specifications |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Connectable programmable controller module | Source-type 24VDC transistor output module |
| Terminal output type | Sink/source output |
| No. of points | 16 |
| Isolation method | Photocoupler |
| Rated load voltage | 3 to 30VDC |
| Maximum number of simultaneous on points | Depends on the load current characteristics below. |
| Minimum load current | 1.0mA |
| Maximum load current | 1.0A/point |
| Maximum inrush current | 3A 10ms |
| Leakage current at off | 0.1mA or lower (at 30VDC) |
| Maximum voltage drop at ON | 1.5V or less |
| Response time | OFF → ON |
| | ON → OFF |
| Surge suppressor | Zener diode (built in transistor module) |
| Fuse | None |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 160mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 500Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 25 to 60Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Transistor modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Possible |
| Terminal block | Terminal screw |
| | M3 spring-up screws, number of terminals: 34P, 7.62mm pitch |
| Module installation | Applicable wire, tightening torque |
| | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Accessory | Screw |
| | M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| Weight | DIN rail |
| | TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessories | Module extraction tool |
| Weight | Approx. 290g |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

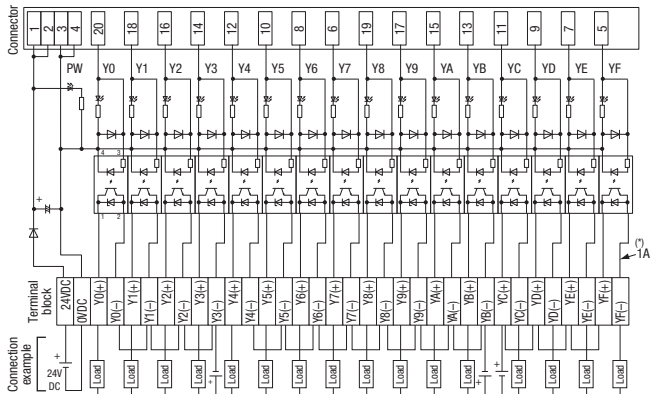
Load current characteristics



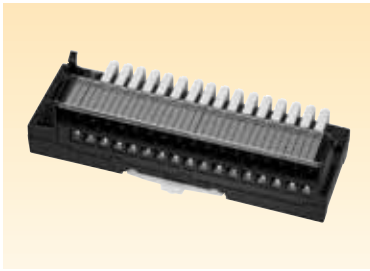
External dimensions



Connection diagram



*:2A when different modules are mixed together and a relay module is used. Check the specifications for a relay module (FA-TH16YRA20S).
For the specifications of a transistor module, check the description about the FA-TH16YSR20S.



16-point relay output socket-type (16-point independent common)

FA-FXTH16YRA20S

- This module converts Mitsubishi Electric micro programmable controller iQ-F/F series connector-type output signals (transistor outputs) into 16-point N/O contact relay output terminal block (2A/point) outputs.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)
- Using optional conversion modules can convert outputs into transistor outputs, triac outputs, N/C contact relay outputs, and signal pass-through outputs.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The product can be installed using a DIN rail or screws.

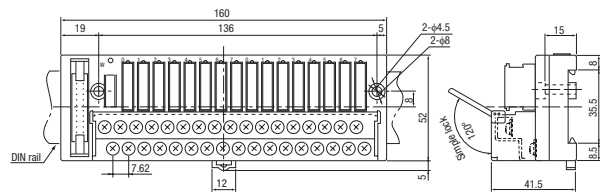
Related materials Selection notes P.222 Precautions for use P.226
Related products Replacement modules P.284 M3 short-circuit bar P.286 Module extraction tool P.287

Specifications

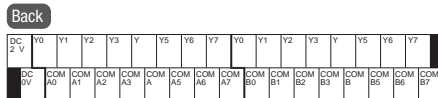
| Item | Specifications |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC (50/60Hz), Current: 2A/1 contact (resistance load, $\text{COS}\phi = 1$) |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A ($\text{COS}\phi = 0.7$), 240VAC 1A ($\text{COS}\phi = 0.7$) |
| | 100000 times or more at 200VAC 1A ($\text{COS}\phi = 0.35$) |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10M Ω or more |
| Noise immunity | Simulator noise 1000Vp-p, noise width 1 μ s (based on a noise simulator with a noise frequency of 30 to 100Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Relay modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Possible |
| Terminal block | Terminal screw M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque range: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 250g |

External dimensions

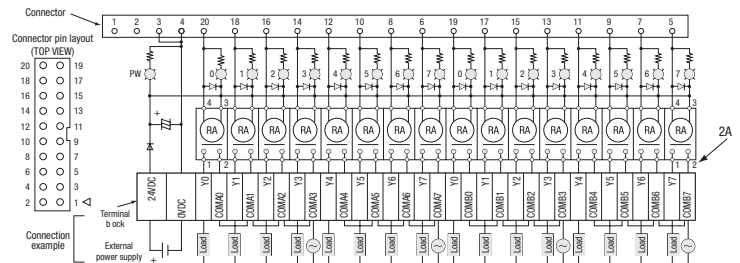
(Unit: mm)



Marking strip



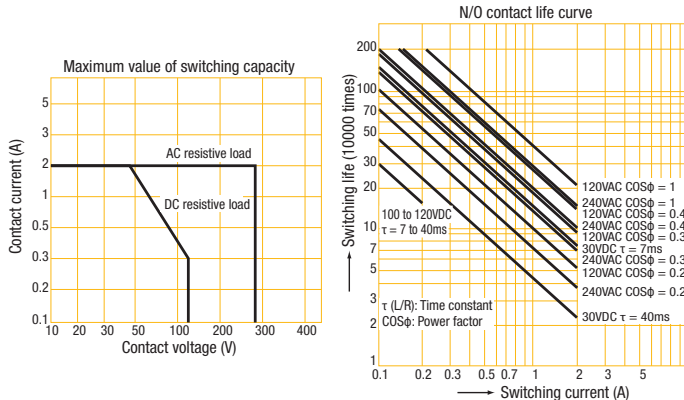
Connection diagram



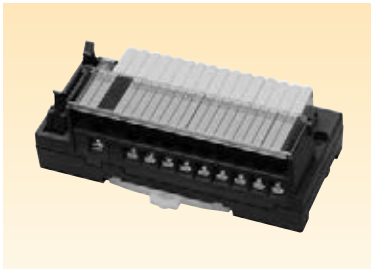
A socket for socket-type modules is omitted.

*: 1A when different modules are mixed together and a triac or transistor module is used.
Check the specifications for triac (FA-TH16YSR20S) and transistor (FA-TH16YTR20S) modules.

Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



16-point relay output socket-type (16 points/common)

FA-FXTH16YRA11S

- This module converts Mitsubishi Electric micro programmable controller iQ-F/F series connector-type output signals (transistor outputs) into 16-point N/O contact relay output terminal block (2A/point) outputs.
- Sockets enable relay modules to be replaced individually. (Easy maintenance)
- Using optional conversion modules can convert outputs into N/C contact relay outputs.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The product can be installed using a DIN rail or screws.

Related materials Selection notes P.222 Precautions for use P.226

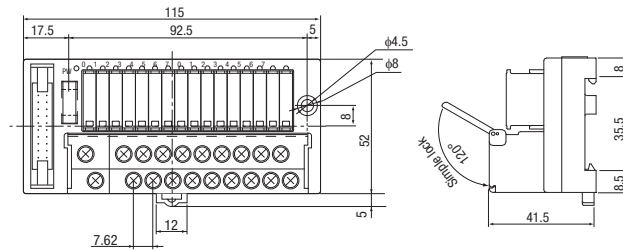
Related products Replacement modules P.284 Module extraction tool P.287

Specifications

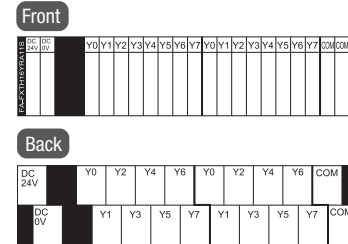
| Item | Specifications |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC (50/60Hz), Current: 2A/1 contact (resistance load, COSφ = 1), 8A/common |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A (COSφ = 0.7), 240VAC 1A (COSφ = 0.7) |
| | 100000 times or more at 200VAC 1A (COSφ = 0.35) |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16 points/common (1-wire type) |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10MΩ or more |
| Noise immunity | Simulator noise 1000Vp-p, noise width 1μs (based on a noise simulator with a noise frequency of 30 to 100Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Provided (Relay modules are replaceable.) |
| No. of times to replace module | 50 times |
| Module mixing | Not possible |
| Terminal block | Terminal screw M3 screws, number of terminals: 20P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | Module extraction tool |
| Weight | Approx. 200g |

External dimensions

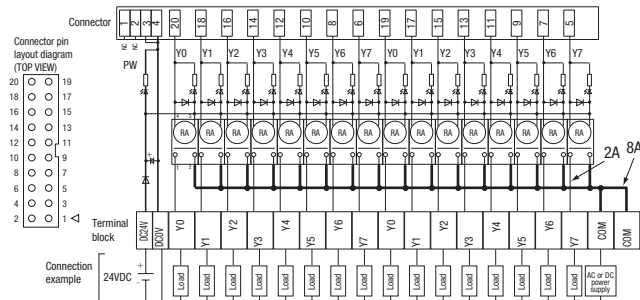
(Unit: mm)



Marking strip

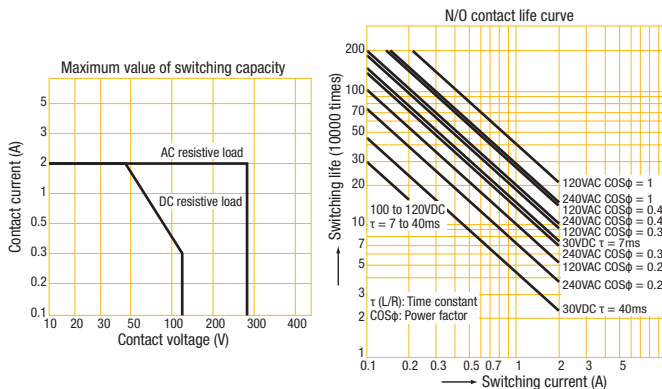


Connection diagram

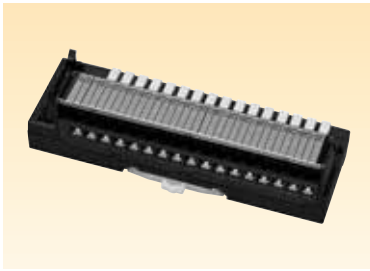


A socket for socket-type modules is omitted.

Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.



16-point relay output (16-point independent common)

FA-FXTH16YRA20

- This module converts Mitsubishi Electric micro programmable controller iQ-F/F series connector-type output signals (transistor outputs) into 16-point N/O contact relay output terminal block (2A/point) outputs.
- Cross-head screws of terminals are spring-up screws, making round solderless terminal installation easy.
- The product can be installed using a DIN rail or screws.

Related materials Selection notes P.222 Precautions for use P.226

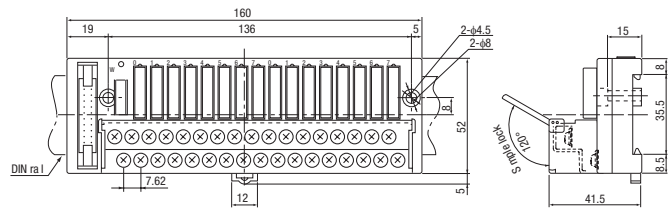
Related products M3 short-circuit bar P.286

Specifications

| Item | Specifications |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| No. of points | 16 |
| Isolation method | Relay |
| Rated switching voltage/current | Voltage: 24VDC, 200VAC (50/60Hz), Current: 2A/1 contact (resistance load, $\text{COS}\phi = 1$) |
| Maximum number of simultaneous on points | 100% |
| Minimum switching load | 5VDC 1mA |
| Maximum switching load | 270VAC, 150VDC |
| Maximum switching frequency | 1800 times/hour (1s or longer on, 1s or longer off) |
| Mechanical life | 20 million times or more |
| Electrical life | 100000 times or more at rated switching voltage/current |
| | 100000 times or more at 200VAC 1.5A ($\text{COS}\phi = 0.7$), 240VAC 1A ($\text{COS}\phi = 0.7$) |
| | 100000 times or more at 200VAC 1A ($\text{COS}\phi = 0.35$) |
| | 100000 times or more at 24VDC 1A (L/R = 7ms), 100VDC 0.1A (L/R = 7ms) |
| Response time | OFF → ON 10ms or less (excluding programmable controller response time) |
| | ON → OFF 12ms or less (excluding programmable controller response time) |
| Wiring method for common | 16-point independent common |
| External power supply | 24VDC±10% (ripple ratio: within 5%) |
| Module current consumption | Approx. 90mA at 24VDC (not including current consumption of programmable controller) |
| Withstand voltage, insulation resistance | Between inputs/outputs, between outputs: 2500VAC for 1 minute, between contacts: 750VAC for 1 minute, 10M Ω or more |
| Noise immunity | Simulator noise 1000Vp-p, noise width 1 μ s (based on a noise simulator with a noise frequency of 30 to 100Hz) |
| Operation display | The LED turns on when the power is on and output is on. |
| Socket | Not provided (Modules cannot be replaced.) |
| No. of times to replace module | — |
| Module mixing | — |
| Terminal block | Terminal screw M3 screws, number of terminals: 34P, 7.62mm pitch, spring-up screw with finger protection cover |
| | Applicable wire, tightening torque 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw M4 × 0.7mm × 22mm or more, tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Accessory | — |
| Weight | Approx. 230g |

External dimensions

(Unit: mm)

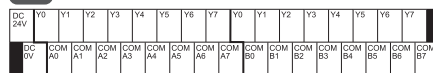


Marking strip

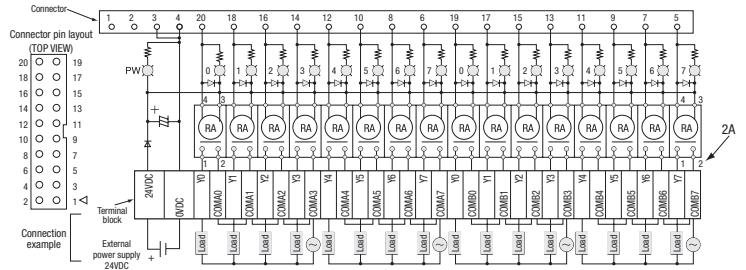
Front



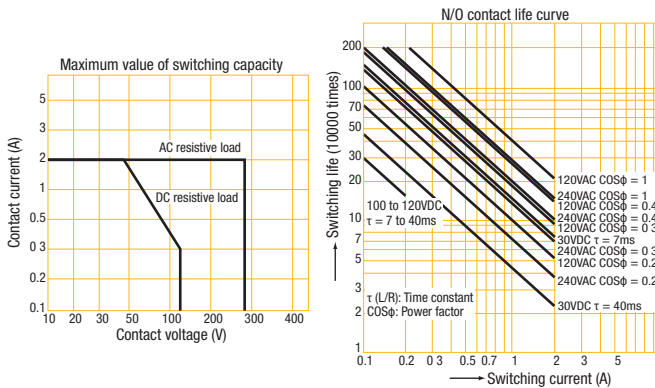
Back



Connection diagram



Relay characteristics data



- When a module is used in applications with high switching frequency, the lifespan of the relay becomes a matter of concern. Use a triac output terminal.
- The relay life curve shows the actual service life, not a guaranteed life. Consider the relay life with an adequate safety margin for the relay life curve.
- The relay life varies significantly depending on load type and its inrush current characteristics. In particular, an inrush current must be taken into consideration, as well as a steady current, since it may cause contact welding.

Modules (for replacement/mixing)



Function type

FA1-TM1**

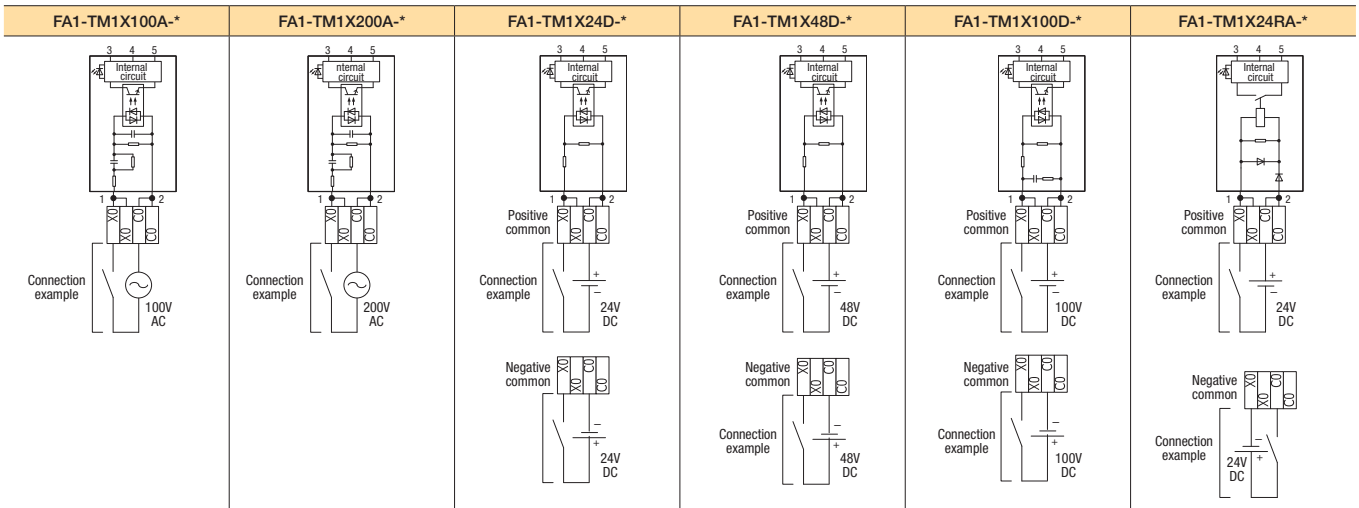
- This type of module can be mounted on the digital signal converter installation base unit (module selectable type) or used to replace modules of the module pre-mounted type unit (the unit with sockets).
- This type of module supports mixed use of modules within a digital signal converter.

Specifications

| Item | Specifications | | | | | | |
|--------------------------------|------------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|-----------------------------|
| | FA1-TM1X24RA-* | FA1-TM1X24D-* | FA1-TM1X48D-* | FA1-TM1X100D-* | FA1-TM1X100A-* | FA1-TM1X200A-* | FA1-TM1ND4 |
| Applicable model | FA1-TH4X2SC20S1E, FA1-TH8X2SC20S1E | | | | | | |
| Module type | 24VDC (relay isolation) | 24VDC (photocoupler isolation) | 48VDC (photocoupler isolation) | 100VDC (photocoupler isolation) | 100VAC (photocoupler isolation) | 200VAC (photocoupler isolation) | Dummy (for dust protection) |
| Maximum number of modules used | 4 | | | | | | |
| Module color | Black | Black | Black | Black | Black | Black | Black |
| Marking strip color | Navy blue | Black | Sky blue | Purple | Orange | Red | Green |
| Quantity | 1, 2, or 4 | | | | | | |
| Operation display | The LED turns on when input is on. | | | | | | |
| Weight | Approx. 30g | Approx. 30g | Approx. 30g | Approx. 30g | Approx. 30g | Approx. 30g | Approx. 30g |

The asterisk in the model name is replaced by a number indicating the quantity. It is replaced by "2" when the quantity is two, or "4" when the quantity is four.

Module connection examples





Slim type

FA-NYP24WK*, FA-NYBP24WK*, FA-SN24A01FS*, FA-SN24D01HZS*, FA-SN00SS*, FA-LYCA024VSK4

- This type of module can be mounted on the digital signal converter installation base unit (module selectable type) or used to replace modules of the module pre-mounted type unit (the unit with sockets).
- This type of module supports mixed use of modules within a digital signal converter.

Specifications

| Item | Specifications | | | | | |
|--------------------------------|-------------------|-------------------|---------------|----------------|------------------------|-------------------|
| Model | FA-NYP24WK* | FA-NYBP24WK* | FA-SN24A01FS* | FA-SN24D01HZS* | FA-SN00SS* | FA-LYCA024VSK4 |
| Module type | N/O contact relay | N/C contact relay | Triac | Transistor | Signal pass-through | C/O contact relay |
| Maximum number of modules used | - | - | - | - | 4 per signal converter | - |
| Module color | Beige | Sky blue | Black | Red | Green | White |
| Quantity | 2 or 4 | | | | | 4 |
| Weight | Approx. 30g | Approx. 30g | Approx. 30g | Approx. 30g | Approx. 30g | Approx. 40g |

The asterisk in the model name is replaced by a number indicating the quantity. It is replaced by "2" when the quantity is two, or "4" when the quantity is four.

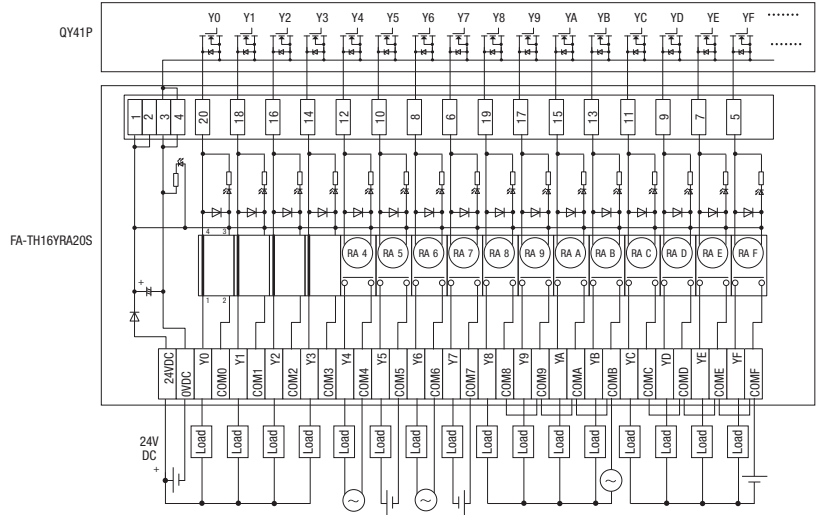
Applicable model

| Model | | N/O contact relay FA-NYP24WK* | N/C contact relay FA-NYBP24WK* | Triac FA-SN24A01FS* | Transistor FA-SN24D01HZS* | Signal pass-through FA-SN00SS* | C/O contact relay FA-LYCA024VSK4 |
|-------------|---------------------|----------------------------------|-----------------------------------|------------------------|------------------------------|-----------------------------------|-------------------------------------|
| Input type | FA1-TH4X24RA1L20S1E | ○ | ○ | × | × | × | × |
| | FA1-TH4X24RA1H20S1E | ○ | ○ | × | × | × | × |
| | FA1-TH8X24RA1L20S1E | ○ | ○ | × | × | × | × |
| | FA1-TH8X24RA1H20S1E | ○ | ○ | × | × | × | × |
| | FA-TH16XRA20S | ○ | ○ | × | × | × | × |
| | FA1-TH4Y2SC20S1E | ○ | ○ | ○ | ○ | ○ | × |
| Output type | FA1-TH8Y2SC20S1E | ○ | ○ | ○ | ○ | ○ | × |
| | FA1-TH1E4Y2SC20S1E | ○ | ○ | ○ | ○ | ○ | × |
| | FA1-TH1E8Y2SC20S1E | ○ | ○ | ○ | ○ | ○ | × |
| | FA1-TH16Y2RA20S1E | ○ | ○ | ○ | ○ | ○ | × |
| | FA1-TH16Y1SR20S1E | ○ | ○ | ○ | ○ | ○ | × |
| | FA1-TH16Y1TR20S1E | ○ | ○ | ○ | ○ | ○ | × |
| | FA1-TH16Y2SC20S1E | ○ | ○ | ○ | ○ | ○ | × |
| | FA1-TH1E16Y2RA20S1E | ○ | ○ | ○ | ○ | × | × |
| | FA1-TH1E16Y1SR20S1E | ○ | ○ | ○ | ○ | × | × |
| | FA1-TH1E16Y1TR20S1E | ○ | ○ | ○ | ○ | × | × |
| | FA1-TH1E16Y2SC20S1E | ○ | ○ | ○ | ○ | × | × |
| | FA1-TH1E16Y2RA20S | ○ | ○ | ○ | ○ | × | × |
| | FA-TH16YRA11S | ○ | ○ | × | × | × | × |
| | FA-TH16YRA21S | ○ | ○ | × | × | × | × |
| | FA-TH16YRA20S | ○ | ○ | ○ | ○ | ○ | × |
| | FA-TH16YRA20SL | ○ | ○ | ○ | ○ | ○ | × |
| | FA-TH16YRAB20SL | ○ | ○ | ○ | ○ | ○ | × |
| | FA-TH16YRAC20S | × | × | × | × | × | ○ |
| | FA-TH16YSR11S | × | × | ○ | × | × | × |
| | FA-TH16YSR21S | × | × | ○ | × | × | × |
| | FA-TH16YSR20S | ○ | ○ | ○ | ○ | ○ | × |
| | FA-TH16YTL11S | × | × | × | ○ | × | × |
| | FA-TH16YTL21S | × | × | × | ○ | × | × |
| | FA-TH16YTH11S | × | × | × | ○ | × | × |
| | FA-THE16YTH11S | × | × | × | ○ | × | × |
| | FA-TH16YTR20S | ○ | ○ | ○ | ○ | ○ | × |
| | FA-THE16YTR20S | ○ | ○ | ○ | ○ | × | × |
| | FA-FXTH16YRA11S | ○ | ○ | × | × | × | × |
| | FA-FXTH16YRA20S | ○ | ○ | ○ | ○ | ○ | × |

* Signals of the programmable controller are directly output to external terminals when the FA-SN00SS* (signal pass-through module) is used. Use the same [power supply](#) for both power supply for load and external power supply of the terminal module.
Note: The FA-SN00SS* cannot be mounted onto the FA-THE**.

Example of use of a pass-through module

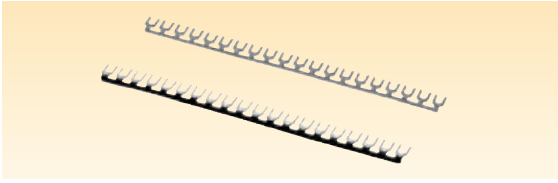
Example of when Y0 to Y3 is changed to pass-through modules in the QY41P (sink output) + the FA-TH16YRA20S (N/O contact relay terminal) configuration. Since Y0 to Y3 directly outputs the output signals of the QY41P to the terminals, use the same power supply of the external power supply and the load for the terminals (Y0 to Y3) of the pass-through module.



For programmable controllers, HMIs, and CNCs

Digital signal converters (terminal modules)

Short-circuit bar



Short-circuit bar for 7.62mm pitch M3-screw terminal block (with/without insulating coating)

FA-BAR20P-20 FA-BAR20PG-20

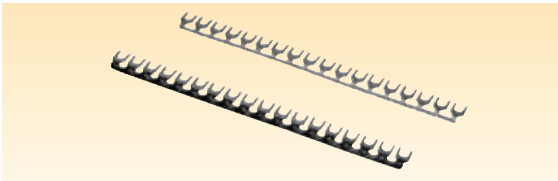
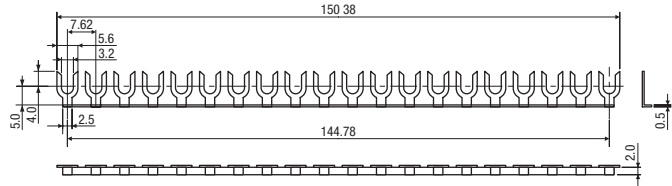
- The required number of short-circuit bars can be easily cut out along cutting lines.
- L-shaped bars do not protrude from the terminal block connected.
- A short-circuit bar with insulating coating can be cut out without cut part of a conductor exposed.
- When a short-circuit bar (without insulating coating) is connected to an upper terminal in the terminal block, lower terminals can be wired without removing a short-circuit bar.

Specifications

| Item | Specifications | |
|-----------------------|-----------------------------|------------------|
| | FA-BAR20P-20 | FA-BAR20PG-20 |
| No. of poles | 20 | |
| Rated voltage/current | Voltage: 300V, Current: 10A | |
| Material | Tin-plated brass | |
| Insulating coating | None | Provided (black) |
| Quantity | 20 | 20 |
| Weight | Approx. 100g | Approx. 130g |

External dimensions

(Unit: mm)



Short-circuit bar for 8mm pitch M3.5-screw terminal block (with/without insulating coating)

FA-BAR18PL-20 FA-BAR18PGL-20

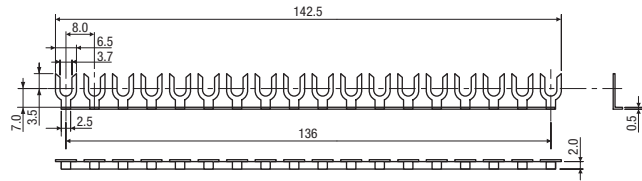
- The required number of short-circuit bars can be easily cut out along cutting lines.
- L-shaped bars do not protrude from the terminal block connected.
- A short-circuit bar with insulating coating can be cut out without cut part of a conductor exposed.
- When a short-circuit bar (without insulating coating) is connected to an upper terminal in the terminal block, lower terminals can be wired without removing a short-circuit bar.

Specifications

| Item | Specifications | |
|-----------------------|-----------------------------|------------------|
| | FA-BAR18PL-20 | FA-BAR18PGL-20 |
| No. of poles | 18 | |
| Rated voltage/current | Voltage: 300V, Current: 10A | |
| Material | Tin-plated brass | |
| Insulating coating | None | Provided (black) |
| Quantity | 20 | 20 |
| Weight | Approx. 110g | Approx. 140g |

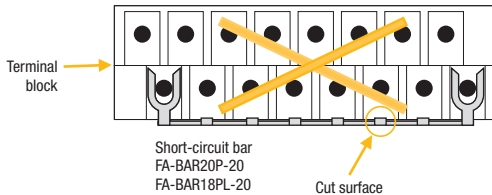
External dimensions

(Unit: mm)



Precautions

- Be sure to power off the module while the short-circuit bars are installed or removed.
- Do not use disconnected terminals in the short-circuit bar without insulating coating as shown below. Doing so may cause a short because the cut surface and unconnected terminal are contacted.

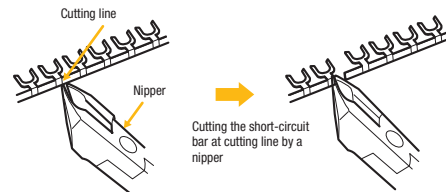


How to cut out short-circuit bars

FA-BAR20P-20, FA-BAR18PL-20

- Cut the short-circuit bar at cutting line using a nipper depending on the number of poles required. Note that the following:

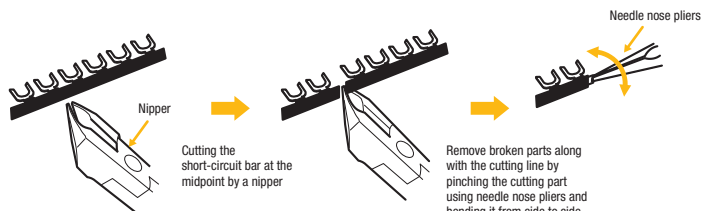
- 1) Do not apply the power to the connecting part of the necessary poles.
- 2) Prevent your eyes from entering cutting pieces while the short-circuit bar is cutting.
- 3) Prevent your body parts (fingers, etc) from cutting with an edge of the short-circuit.



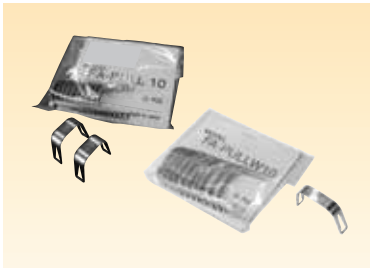
FA-BAR20PG-20, FA-BAR18PGL-20

- Cut the short-circuit bar at the midpoint between terminals using a nipper depending on the number of poles required. Remove broken parts along with the cutting line by pinching the cutting part using needle nose pliers and bending it from side to side. Note that the following:

- 1) Do not apply the power to the connecting part of the necessary poles.
- 2) Prevent your eyes from entering cutting pieces while the short-circuit bar is cutting.
- 3) Prevent your body parts (fingers, etc) from cutting with an edge of the short-circuit.



Module extraction tool



Module extraction tool

FA-PULL10, FA-PULLW10

- These tools are used to pull out modules from a socket-type terminal module.
- Two types are provided. Select the suitable type according to the shape of modules.

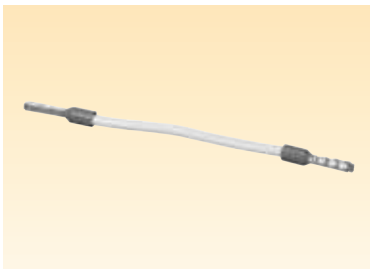
Specifications

| Item | Specifications | |
|----------|----------------|-------------|
| | FA-PULL10 | FA-PULLW10 |
| Quantity | 10 | |
| Weight | Approx. 20g | Approx. 20g |

Applicable model

| | Model | FA-PULL10 | FA-PULLW10 |
|-----------------|---------------------|---------------|------------|
| Input type | FA-TH16XRA20S | ○ | × |
| | FA1-TH16Y2RA20S1E | ○ | × |
| | FA1-TH16Y1SR20S1E | ○ | × |
| | FA1-TH16Y1TR20S1E | ○ | × |
| | FA1-TH16Y2SC20S1E | ○ | × |
| | FA1-TH1E16Y2RA20S1E | ○ | × |
| | FA1-TH1E16Y1SR20S1E | ○ | × |
| | FA1-TH1E16Y1TR20S1E | ○ | × |
| | FA1-TH1E16Y2SC20S1E | ○ | × |
| | FA1-TH1E16Y2RA20S | ○ | × |
| | FA-TH16YRA11S | ○ | × |
| | FA-TH16YRA21S | ○ | × |
| | FA-TH16YRA20S | ○ | × |
| | FA-TH16YRA20SL | ○ | × |
| | FA-TH16YRAB20SL | ○ | × |
| | FA-TH16YRAC20S | × | ○ |
| | Output type | FA-TH16YSR11S | ○ |
| FA-TH16YSR21S | | ○ | × |
| FA-TH16YSR20S | | ○ | × |
| FA-TH16YTL11S | | ○ | × |
| FA-TH16YTL21S | | ○ | × |
| FA-TH16YTH11S | | ○ | × |
| FA-THE16YTH11S | | ○ | × |
| FA-TH16YTR20S | | ○ | × |
| FA-THE16YTR20S | | ○ | × |
| FA-FXTH16YRA11S | | ○ | × |
| FA-FXTH16YRA20S | | ○ | × |

Pre-fabricated cable with ferrules for wiring common terminals



Pre-fabricated cable with ferrules for wiring common terminals

FA1-SC1W006F-15

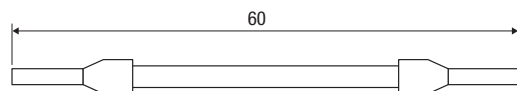
- This is used to wire the digital signal converter and the common terminals of spring clamp terminals.
- Common terminals can be shared according to the customer's needs.

Specifications

| Item | Specifications |
|-----------------------------|---------------------------------------------|
| Cable length | 60mm |
| Cable type | Stranded wire |
| Terminal | A10, 75-8 GY: PHOENIX CONTACT GmbH & Co. KG |
| Conductor configuration | 0.75 mm ² (#18AWG) |
| Maximum operating current | 8A |
| Conductor resistance (20°C) | 0.0226Ω/m or less |
| Withstand voltage | 2000VAC for 1 minute |
| Insulation resistance | 15MΩ·km or more |
| UL-listed (cable) | UL STYLE No.10002 105°C 300V |
| Quantity | 15 |
| Weight | Approx. 20g |

External dimensions

(Unit: mm)



Analog signal converters

Model list

Analog signal converters for input signals

| | Type | | Model | Refer to |
|-----------------------------------------|-----------------------------------------------|--------------|-------------------|----------|
| Installation base unit | 4-channel, module mixing possible | Spring clamp | FA1-AT1B4X1TE | P.292 |
| | 4-channel, module mixing possible | Screw (M3) | FA1-AT1B4X1TB | P.292 |
| | 8-channel, module mixing possible | | FA-ATB8XTB | P.296 |
| | 8-channel, adapter mountable | | FA-ATKB8XTB | P.294 |
| Adapter | Voltage to current conversion adapter | | FA-ATKA8XM | P.295 |
| Voltage module | 0 to 5V | | FA-ATSVM1XV05 | P.297 |
| | 1 to 5V | | FA-ATSVM1XV15 | P.297 |
| | -10 to 10V | | FA-ATSVM1XV1010 | P.297 |
| Current module | 4 to 20mA | | FA-ATSVM1XA420 | P.298 |
| Distributor module (2-wire transmitter) | 4 to 20mA | | FA-ATSVM1XD | P.299 |
| RTD module | JPt100, -200 to 600°C | | FA-ATSVM1XRJPT | P.300 |
| | Pt100, -200 to 650°C | | FA-ATSVM1XRPT | P.300 |
| | Pt100, 0 to 100°C | | FA-ATSVM1XRPT0010 | P.300 |
| | Pt100, 0 to 200°C | | FA-ATSVM1XRPT0020 | P.300 |
| Thermocouple temperature module | Type B thermocouple, +600 to +1700°C | | FA-ATSVM1XTB | P.301 |
| | Type S thermocouple, 0 to +1600°C | | FA-ATSVM1XTS | P.301 |
| | Type E thermocouple, -200 to +900°C | | FA-ATSVM1XTE | P.301 |
| | Type T thermocouple, -200 to +350°C | | FA-ATSVM1XTT | P.301 |
| | Type R thermocouple, 0 to +1600°C | | FA-ATSVM1XTR | P.301 |
| | Type K thermocouple, -200 to +1200°C | | FA-ATSVM1XTK | P.301 |
| | Type K thermocouple, 0 to 400°C | | FA-ATSVM1XTK0040 | P.301 |
| | Type K thermocouple, 0 to 600°C | | FA-ATSVM1XTK0060 | P.301 |
| | Type K thermocouple, 0 to 800°C | | FA-ATSVM1XTK0080 | P.301 |
| | Type J thermocouple, -40 to +750°C | | FA-ATSVM1XTJ | P.301 |
| Type N thermocouple, -200 to 1250°C | | FA-ATSVM1XTN | P.301 | |
| Pass-through module | Pass-through module for non-isolated signals* | | FA-ATFTMX | P.316 |
| Dummy module | For dust protection (quantity: 5) | | FA-ATNDM5 | P.317 |

*: The current is converted to voltage.

Analog signal converters for output signals

| | Type | | Model | Refer to |
|---------------------------|-----------------------------------|-----------------------------------------------|-----------------|----------|
| Installation base unit | 4-channel, module mixing possible | Spring clamp | FA1-AT1B4Y1TE | P.306 |
| | 4-channel, module mixing possible | Screw (M3) | FA1-AT1B4Y1TB | P.306 |
| | 8-channel, module mixing possible | | FA-ATB8YTB | P.308 |
| Current to voltage module | 0 to 5V | | FA-ATSAM1YV05 | P.309 |
| | 1 to 5V | | FA-ATSAM1YV15 | P.309 |
| | 0 to 10V | | FA-ATSAM1YV010 | P.309 |
| | -10 to 10V | | FA-ATSAM1YV1010 | P.309 |
| Current to current module | 0 to 20mA | | FA-ATSAM1YA020 | P.310 |
| | 4 to 20mA | | FA-ATSAM1YA420 | P.310 |
| Voltage to voltage module | 0 to 5V | | FA-ATSVM1YV05 | P.311 |
| | 1 to 5V | | FA-ATSVM1YV15 | P.311 |
| | 0 to 10V | | FA-ATSVM1YV010 | P.311 |
| Voltage to current module | -10 to 10V | | FA-ATSVM1YV1010 | P.311 |
| | 0 to 20mA | | FA-ATSVM1YA020 | P.312 |
| Voltage to current module | 4 to 20mA | | FA-ATSVM1YA420 | P.312 |
| | Pass-through module | Pass-through module for non-isolated signals* | FA-ATFTMX | P.316 |
| Dummy module | For dust protection (quantity: 5) | | FA-ATNDM5 | P.317 |

*: The current is converted to voltage.

Connection cables

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Refer to |
|-----------------------------------------------------------------------------------------------|--------------------------|----------------------------------------|-------------------------------|--------------|-------------------|----------|
| MELSEC iQ-R/ MELSEC-Q series | 4-channel input | Screw terminal block | MIL 20P | 1m | FA1-CB2L10AT4XV1T | P.303 |
| | | | | 2m | FA1-CB2L20AT4XV1T | P.303 |
| | | | | 3m | FA1-CB2L30AT4XV1T | P.303 |
| | 8-channel input | Screw terminal block | MIL 20P | 1m | FA-CBL10ATQ8XVT | P.304 |
| | | | | 2m | FA-CBL20ATQ8XVT | P.304 |
| | | | | 3m | FA-CBL30ATQ8XVT | P.304 |
| | 4-channel voltage output | Screw terminal block | MIL 20P | 1m | FA1-CB2L10AT4YV1T | P.313 |
| | | | | 2m | FA1-CB2L20AT4YV1T | P.313 |
| | | | | 3m | FA1-CB2L30AT4YV1T | P.313 |
| | 4-channel current output | Screw terminal block | MIL 20P | 1m | FA1-CB2L10AT4YA1T | P.313 |
| | | | | 2m | FA1-CB2L20AT4YA1T | P.313 |
| | | | | 3m | FA1-CB2L30AT4YA1T | P.313 |
| | 8-channel output | Screw terminal block | MIL 20P | 1m | FA-CBL10ATQ8YT | P.314 |
| | | | | 2m | FA-CBL20ATQ8YT | P.314 |
| | | | | 3m | FA-CBL30ATQ8YT | P.314 |
| MELSEC iQ-R/ MELSEC-Q series | 8-channel input | 20P connector | MIL 20P | 1m | FA-CBL10ATQ8XVA | P.303 |
| | | | | 2m | FA-CBL20ATQ8XVA | P.303 |
| | | | | 3m | FA-CBL30ATQ8XVA | P.303 |
| | 8-channel output | 20P connector | MIL 20P | 1m | FA-CBL10ATQ8YA | P.314 |
| | | | | 2m | FA-CBL20ATQ8YA | P.314 |
| | | | | 3m | FA-CBL30ATQ8YA | P.314 |
| MELSEC iQ-F series | 4-channel input | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT4XV1E | P.302 |
| | | | | 2m | FA2-CB2L20AT4XV1E | P.302 |
| | | | | 3m | FA2-CB2L30AT4XV1E | P.302 |
| | 4-channel voltage output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT4YV1E | P.313 |
| | | | | 2m | FA2-CB2L20AT4YV1E | P.313 |
| | | | | 3m | FA2-CB2L30AT4YV1E | P.313 |
| | 4-channel current output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT4YA1E | P.313 |
| | | | | 2m | FA2-CB2L20AT4YA1E | P.313 |
| | | | | 3m | FA2-CB2L30AT4YA1E | P.313 |
| | 8-channel input | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT8XV1E | P.302 |
| | | | | 2m | FA2-CB2L20AT8XV1E | P.302 |
| | | | | 3m | FA2-CB2L30AT8XV1E | P.302 |
| CC-Link IE TSN | 4-channel input | Spring clamp terminal block | MIL 20P | 1m | FA3-CB2L10AT4XV1E | P.302 |
| | | | | 2m | FA3-CB2L20AT4XV1E | P.302 |
| | | | | 3m | FA3-CB2L30AT4XV1E | P.302 |
| | 4-channel voltage output | Spring clamp terminal block | MIL 20P | 1m | FA3-CB2L10AT4YV1E | P.313 |
| | | | | 2m | FA3-CB2L20AT4YV1E | P.313 |
| | | | | 3m | FA3-CB2L30AT4YV1E | P.313 |
| | 4-channel current output | Spring clamp terminal block | MIL 20P | 1m | FA3-CB2L10AT4YA1E | P.313 |
| | | | | 2m | FA3-CB2L20AT4YA1E | P.313 |
| | | | | 3m | FA3-CB2L30AT4YA1E | P.313 |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L/ MELSEC iQ-F series, CC-Link*, non-Mitsubishi PLC | Input | Discrete cable | MIL 20P | 1m | FA-CBL10ATF | P.304 |
| | | | | 2m | FA-CBL20ATF | P.304 |
| | | | | 3m | FA-CBL30ATF | P.304 |
| | Output | Discrete cable | MIL 20P | 1m | FA-CBL10ATYF | P.315 |
| | | | | 2m | FA-CBL20ATYF | P.315 |
| | | | | 3m | FA-CBL30ATYF | P.315 |
| Analog signal converter (for extension) | 4-channel input | Discrete cable | MIL 20P | 0.5m | FA1-CB2L05AT4EX | P.318 |
| | | | | 1m | FA1-CB2L10AT4EX | P.318 |
| | | | | 2m | FA1-CB2L20AT4EX | P.318 |
| | | | | 3m | FA1-CB2L30AT4EX | P.318 |

*: CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, CC-Link

Short-circuit bar

| | Remarks | Model | Refer to |
|-----------------------------|-----------------------------------|----------------------------|------------------------|
| For M3 screw terminal block | Number of poles: 20, quantity: 20 | Without insulating coating | FA-BAR20P-20 P.286 |
| | | With insulating coating | FA-BAR20PG-20 P.286 |

Conversion adapter

| No. of points | Connection method | Model | Refer to |
|---------------|------------------------------------------------|----------|----------|
| 18 | Conversion of screw terminals to 20P connector | FA-Q6TCA | P.317 |

Related products

Network interface modules

| Supported network | Specifications | Dedicated cable | Model | Refer to | |
|--------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------------------|-------------|----------------|-------|
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) MODBUS/TCP | For analog signal converter | Included | Input type | FA3-AT1M8X-01C | P.322 |
| | | | Output type | FA3-AT1M8Y-01C | P.322 |
| | | Not included (Use an optional cable.) | Input type | FA3-AT1M8X | P.322 |
| | | | Output type | FA3-AT1M8Y | P.322 |
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) | For analog signal converter | Included | Input type | FA3-AT1T8X-01C | P.324 |
| | | | Output type | FA3-AT1T8Y-01C | P.324 |
| | | Not included (Use an optional cable.) | Input type | FA3-AT1T8X | P.324 |
| | | | Output type | FA3-AT1T8Y | P.324 |
| CC-Link | For analog signal converter | Included | Input type | FA3-AT1C8X-01C | P.326 |
| | | | Output type | FA3-AT1C8Y-01C | P.326 |
| | | Not included (Use an optional cable.) | Input type | FA3-AT1C8X | P.326 |
| | | | Output type | FA3-AT1C8Y | P.326 |

Connection cables

Cables for network interface modules

| Product | Remarks | Cable length | Model | Refer to |
|---------------------------------------|--------------------------------------------------------------------------|--------------|------------------|----------|
| Dedicated cable | A cable included with the product (FA3-□□-01C) | 0.1m | - | - |
| Extension cable for signal converter* | An optional cable required when a cable is not included with the product | 1m | FA3-CB2L10MM1H20 | P.320 |
| | | 2m | FA3-CB2L20MM1H20 | P.320 |
| | | 3m | FA3-CB2L30MM1H20 | P.320 |

*: For information on other cables, please consult your local Mitsubishi representative.

MEMO

Specifications

Analog signal converters for input signals



[Input] 4-channel module installation base unit

FA1-AT1B4X1TE, FA1-AT1B4X1TB

- Two types are available: spring clamp terminal type and screw terminal type.
- Thick wires such as compensating lead wires can be directly connected.
- Different types of input modules can be mixed because all channels are isolated.
- The spring clamp terminal type supports push-in connection. Therefore, the wiring time can be reduced. Retightening work is not required at periodic inspection, as screws do not loose due to vibration.

Related products

M3 short-circuit bar P.286 Conversion adapter P.317
 Modules P.297 to P.301 Pass-through module P.316 Dummy module P.317

Specifications

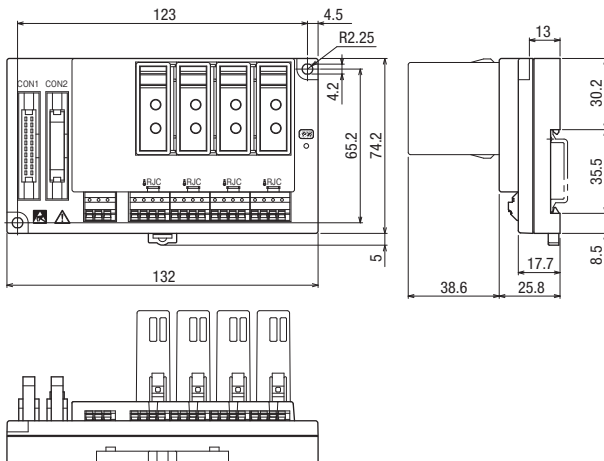
| Item | FA1-AT1B4X1TE | FA1-AT1B4X1TB |
|------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Type | Spring clamp terminal type (voltage connection) | Screw terminal type (voltage connection) |
| No. of slots | 4 | 4 |
| Terminal block | Terminal block screw | M3 screw, 7.62mm pitch |
| | Applicable wire | Tightening torque range: 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| | Wire strip length | 22 to 14AWG: 0.3 to 2.0mm ² |
| Module installation | Screw | M4 × 0.7mm × 20mm or more |
| | | Tightening torque range: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| External power supply | 24VDC±10% | |
| Current consumption (24VDC) | 6mA or less (not including current consumption of signal conversion modules) | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 160g | Approx. 220g |

- Note 1: Mount a dummy module into an unused slot to allow no empty slot.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 3: When connecting the product with a programmable controller, confirm that the product configuration is correct.
 Connection based on a wrong configuration may cause a failure or malfunction.
 Note 4: Input type modules (line color: purple) only can be mounted. Mounting an output type module may cause a failure or malfunction.
 Note 5: Mount modules according to the signals of an external device. Incorrect module mounting may cause a failure or malfunction.

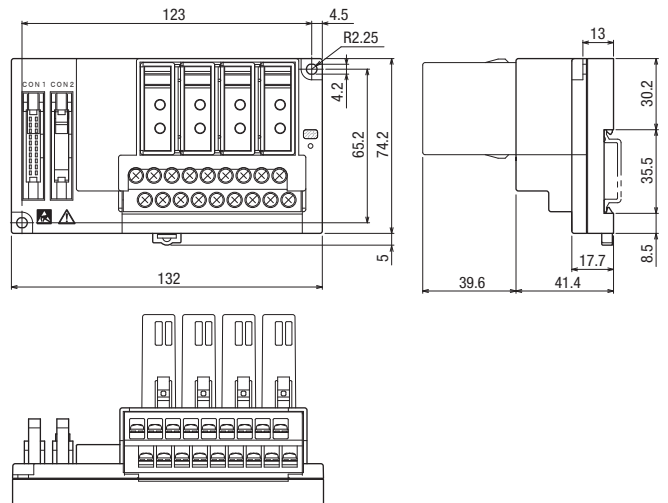
External dimensions

(Unit: mm)

Spring clamp terminal type: FA1-AT1B4X1TE

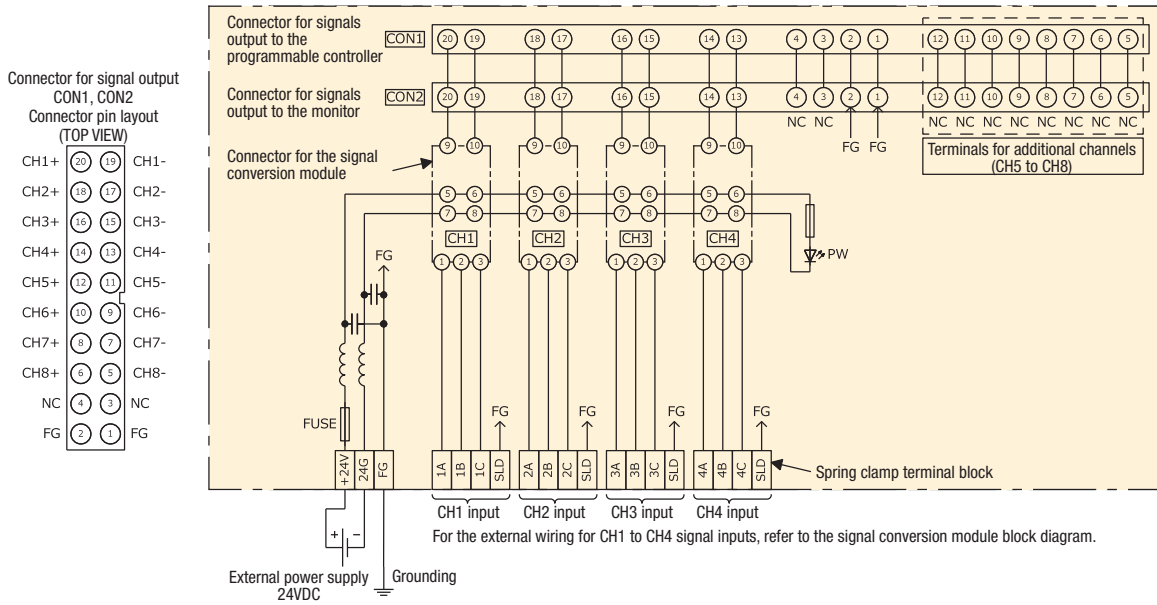


Screw terminal type: FA1-AT1B4X1TB

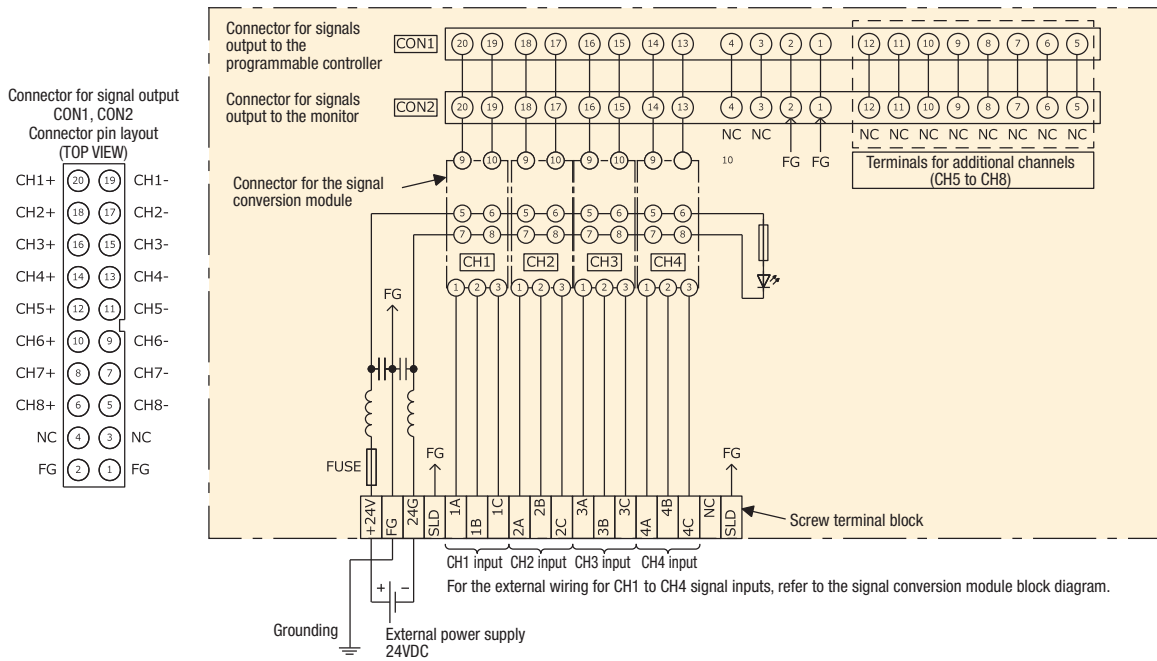


Block diagram

Spring clamp terminal type: FA1-AT1B4X1TE

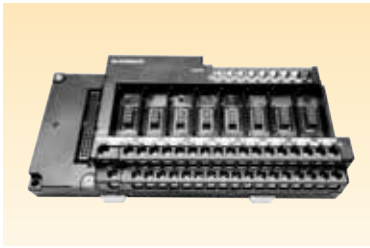


Screw terminal type: FA1-AT1B4X1TB



Precautions

- For a device connected to a monitor output, use a device with sufficiently large (1MΩ or more) input resistance. The voltage of a monitor output signal is 1 to 5V.



[Input] 8-channel module installation base unit, screw terminal type (conversion adapter mountable)

FA-ATKB8XTB

- Thick wires such as compensating lead wires can be directly connected.
- Isolation between channels enables mixing of input modules.
- This product is used with a conversion adapter.

Related products

M3 short-circuit bar P.286 Conversion adapter P.317
Modules P.297 to P.301 Pass-through module P.316 Dummy module P.317

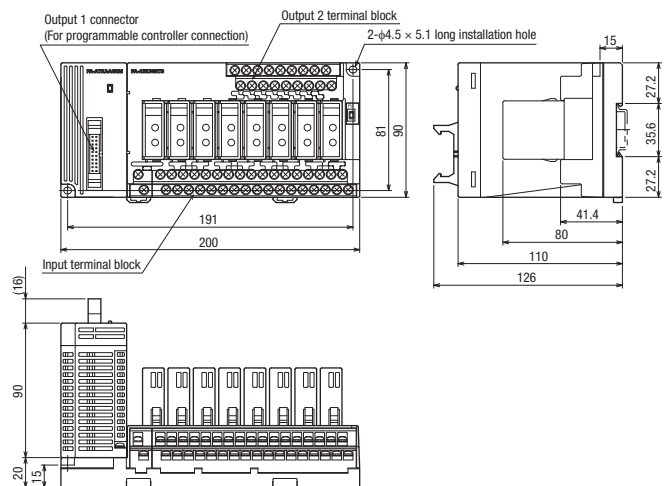
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| No. of slots | 8 | |
| Terminal block | Terminal screw | M3 spring-up screws, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N·cm (6 to 9kgf·cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more Tightening torque: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| External power supply | 24VDC±10% | |
| Current consumption (24VDC) | 6mA or less (not including current consumption of a conversion adapter and modules) | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 370g | |

Note 1: Mount a dummy module into an unused slot to allow no empty slot.
 Note 2: Even when cables are connected, the size in the height direction falls within the specified external dimensions.
 Note 3: Input type modules (line color: purple) only can be mounted. Mounting an output type module may cause a failure or malfunction.
 Note 4: Mount modules according to the signals of an external device. Incorrect module mounting may cause a failure or malfunction.

External dimensions

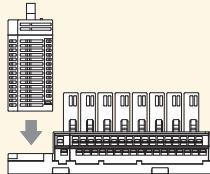
(Unit: mm)



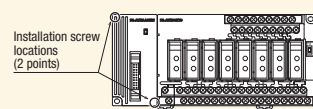
How to mount or remove an adapter

(1) How to mount a module to the installation base unit

1) Place the adapter perpendicularly on the installation base unit.



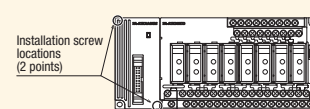
2) Fix the adapter to the installation base unit with installation screws.



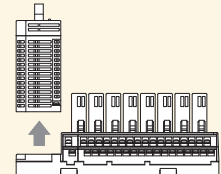
■ Be sure to tighten up the installation screws. Failure to do so may cause the adapter to be detached and damaged.

(2) How to remove a module from the installation base unit

1) Remove the screws connecting the adapter to the installation base unit.



2) Pull out the adapter perpendicularly from the installation base unit.





[Input] Conversion adapter (1 input - 2 current outputs supported)

FA-ATKAA8XM

- This product is used with a module installation base unit (FA-ATKB8XTB).
- Reliability is improved by isolation between output 1 (programmable controller side) and output 2 (recorder connected side).

Related products Module installation base unit P.294

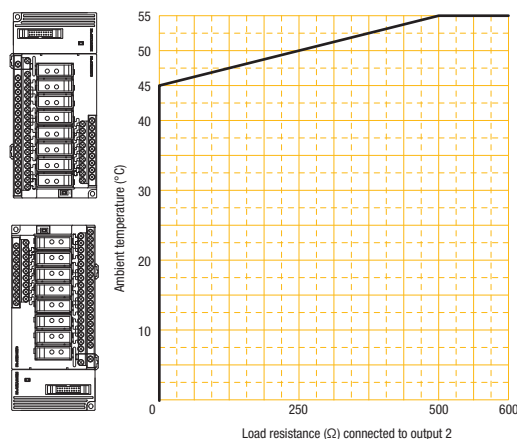
Specifications

| Item | Specifications | |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| No. of points | 8 (8 channel) | |
| Input signal | 1 to 5V (module output) | |
| Accuracy ¹ (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) |
| | Temperature characteristics | ±0.015%/°C or less |
| Output 1 (OUT1) (programmable controller side) | Interface | 20-pin MIL connector |
| | Output signal | 4 to 20mA |
| | Output allowable load resistance | 250 to 350Ω |
| | Isolation between input and output Isolation between output channels | Not provided Not provided |
| Output 2 (OUT2) | Interface | Through FA-ATKB8XTB OUT2 (M3 spring-up screws, 7.62mm pitch) |
| | Output signal | 4 to 20mA |
| | Output allowable load resistance | 600Ω or less *Operating temperature range restricted |
| | Isolation between input and output Isolation between output channels | Transformer Provided |
| Response speed ² | 10ms or less | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | |
| Current consumption (24VDC) | 310mA or less | |
| Withstand voltage, insulation resistance | Between input, all outputs for output 1, each channel for output 2, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Mounting screw tightening torque for installation base unit | 36 to 48N·cm (3.7 to 4.8kgf·cm) | |
| Weight | Approx. 200g | |

Note 1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 2: A pass-through module (FA-AFTMX1) can be used for voltage input only.
 Note 3: When connecting the product with a programmable controller, confirm that the product configuration is correct. Connection based on a wrong configuration may cause a failure or malfunction.
 *1: The table shows the specifications for an adapter alone. The accuracy of modules to be mounted should be added.
 *2: Time from when a startup pulse is input until the output level reaches 90%

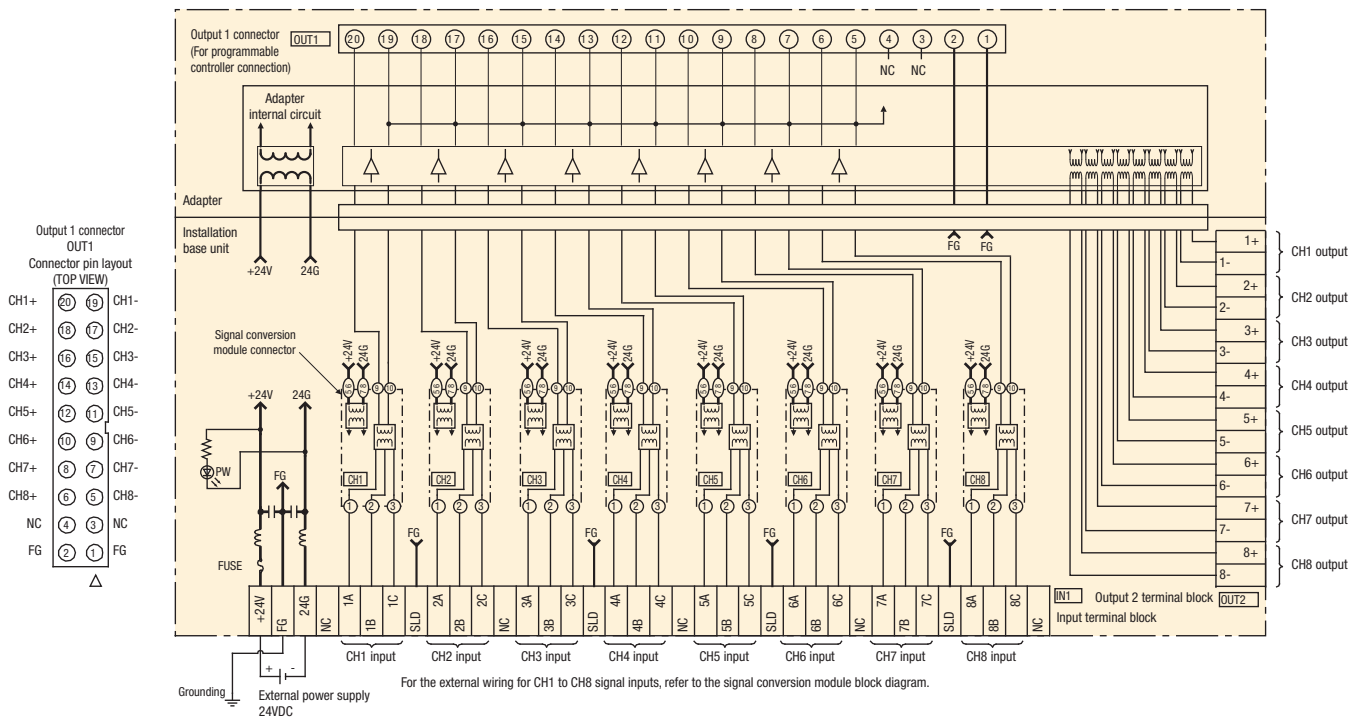
Restrictions on operating temperature range

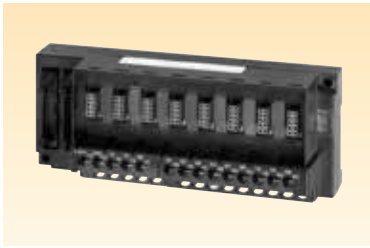
■ In any of the following installation directions, due to the load resistance connected to output 2, restrictions occur on the operating temperature range.



■ Restrictions on the operating temperature range do not occur in any installation direction other than the above.

Block diagram





[Input] 8-channel module installation base unit, screw terminal type FA-ATB8XTB

- Thick wires such as compensating lead wires can be directly connected.
- Isolation between channels enables mixing of input modules.

Related products M3 short-circuit bar P.286 Modules P.297 to P.301 Pass-through module P.316 Dummy module P.317

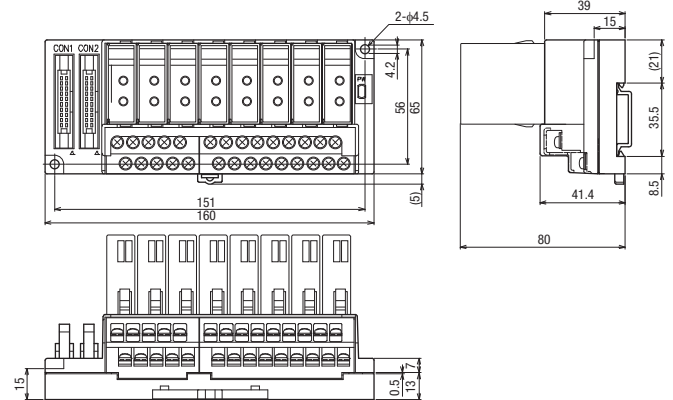
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| No. of slots | 8 | |
| Terminal block | Terminal screw | M3 spring-up screws, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more Tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| External power supply | 24VDC±10% | |
| Current consumption (24VDC) | 6mA or less (not including current consumption of modules) | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 320g | |

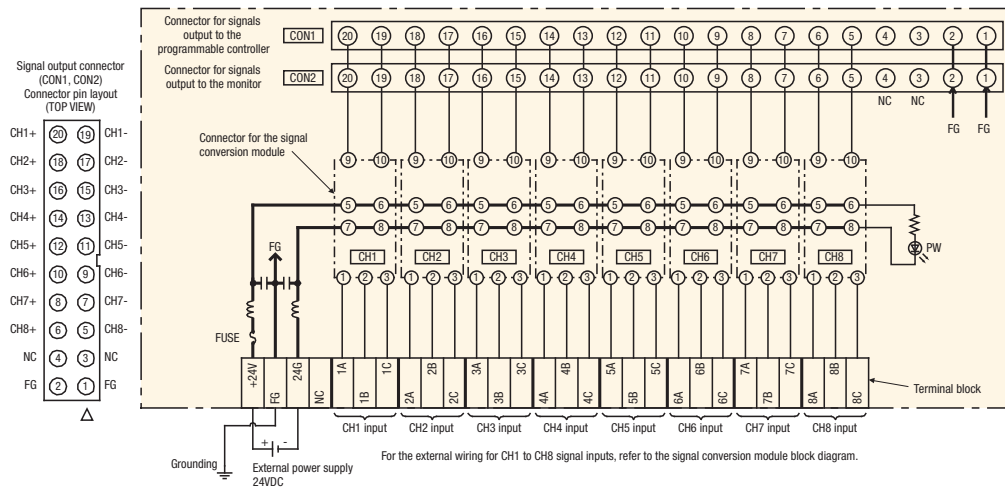
- Note 1: Mount a dummy module into an unused slot to allow no empty slot.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 3: When connecting the product with a programmable controller, confirm that the product configuration is correct. Connection based on a wrong configuration may cause a failure or malfunction.
 Note 4: Input type modules (line color: purple) only can be mounted. Mounting an output type module may cause a failure or malfunction.
 Note 5: Mount modules according to the signals of an external device. Incorrect module mounting may cause a failure or malfunction.

External dimensions

(Unit: mm)



Block diagram



Precautions

- For a device connected to a monitor output, use a device with sufficiently large (1MΩ or more) input resistance. The voltage of a monitor output signal is 1 to 5V.
- The terminal block of this product does not have a shield for input signal cable. Ground them in the control panel.



[Input] Voltage to voltage signal conversion module

FA-ATSVM1XV05, FA-ATSVM1XV15, FA-ATSVM1XV1010

- This module converts a voltage input into a voltage output. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

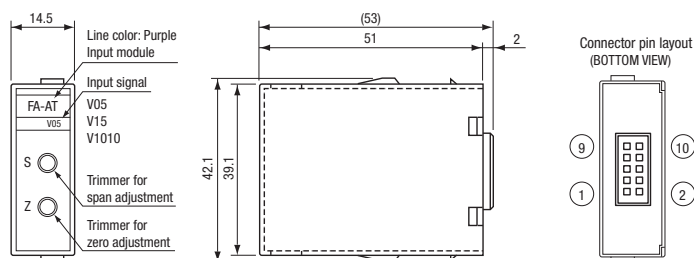
Specifications

| Item | Specifications | | |
|------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------|
| | FA-ATSVM1XV05 | FA-ATSVM1XV15 | FA-ATSVM1XV1010 |
| No. of points | 1 (1 channel) | | |
| Input | Input signal | 0 to 5V | 1 to 5V |
| | Input resistance | 1M Ω or more | |
| | Disconnection detection function | Unavailable | |
| Accuracy (percentage of full scale) | Reference accuracy | $\pm 0.1\%$ or less (surrounding air temperature: 25°C $\pm 5^\circ$ C) | |
| | Temperature characteristics | $\pm 0.015\%/^\circ$ C or less | |
| Output (programmable controller side) | Output signal | 1 to 5V | |
| | Output allowable load resistance | 10k Ω or more | |
| Response speed* | 15ms or less | | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | | |
| Power supply | 24VDC $\pm 10\%$ (Supplied from the installation base unit) | | |
| Current consumption (24VDC) | 20mA or less | | |
| Insulation method | Transformer | | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10M Ω or more | | |
| Weight | Approx. 30g | Approx. 30g | Approx. 30g |

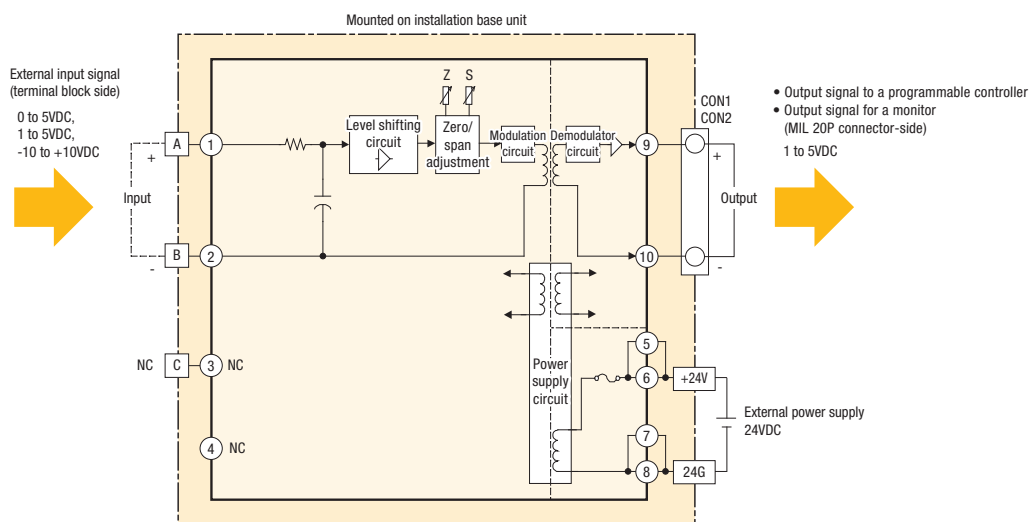
*: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram





[Input] Current to voltage signal conversion module

FA-ATSVM1XA420

- This module converts a current input into a voltage output. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

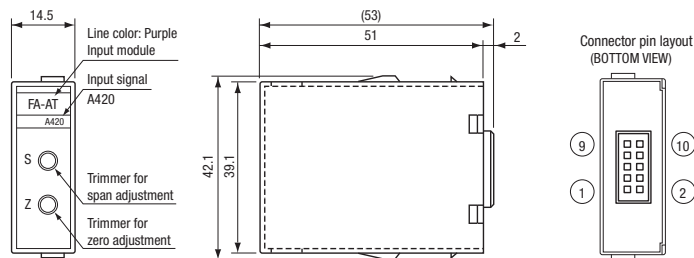
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|
| No. of points | 1 (1 channel) | |
| Input | Input signal | 4 to 20mA |
| | Input resistance | 250Ω |
| | Disconnection detection function | Unavailable |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) |
| | Temperature characteristics | ±0.015%/°C or less |
| Output (programmable controller side) | Output signal | 1 to 5V |
| | Output allowable load resistance | 10kΩ or more |
| Response speed* | 15ms or less | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | |
| Current consumption (24VDC) | 20mA or less | |
| Insulation method | Transformer | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 30g | |

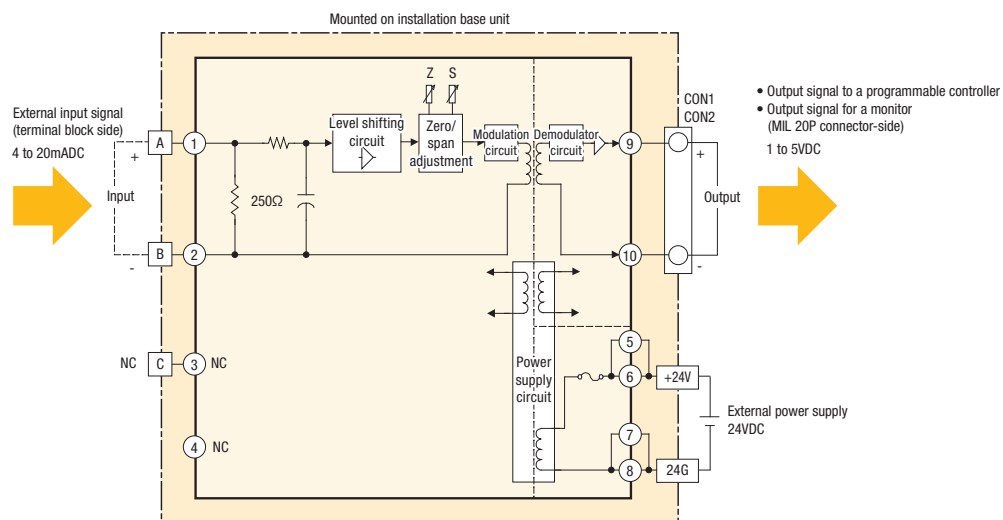
*: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram





[Input] 2-wire transmitter to voltage signal conversion module (distributor) FA-ATSVM1XD

- This module converts an input from a 2-wire transmitter into a voltage output. (Isolation between input and output is provided.)
- No external power supply is required as the module is provided with power supply for a 2-wire transmitter.
- The module can be mounted/removed to/from an installation base unit easily.

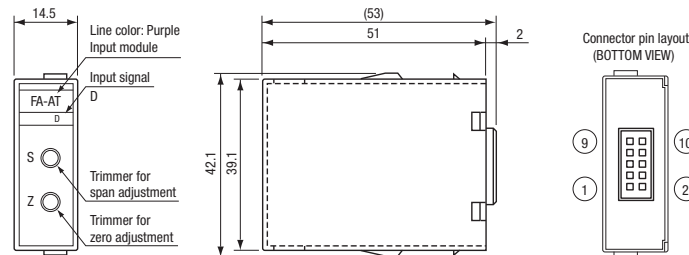
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|
| No. of points | 1 (1 channel) | |
| Input | Input signal | 2-wire transmitter (4 to 20mA) |
| | Input resistance | 250Ω |
| | Disconnection detection function | Unavailable |
| Power supply for transmitter | Supply voltage | 26VDC±2V |
| | Maximum supply current | 24mA |
| | Short-circuit protection | Provided (Current limit: 25 to 35mA) |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) |
| | Temperature characteristics | ±0.015%/°C or less |
| Output (programmable controller side) | Output signal | 1 to 5V |
| | Output allowable load resistance | 10kΩ or more |
| Response speed | 15ms or less | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | |
| Current consumption (24VDC) | 68mA or less | |
| Insulation method | Transformer | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 30g | |

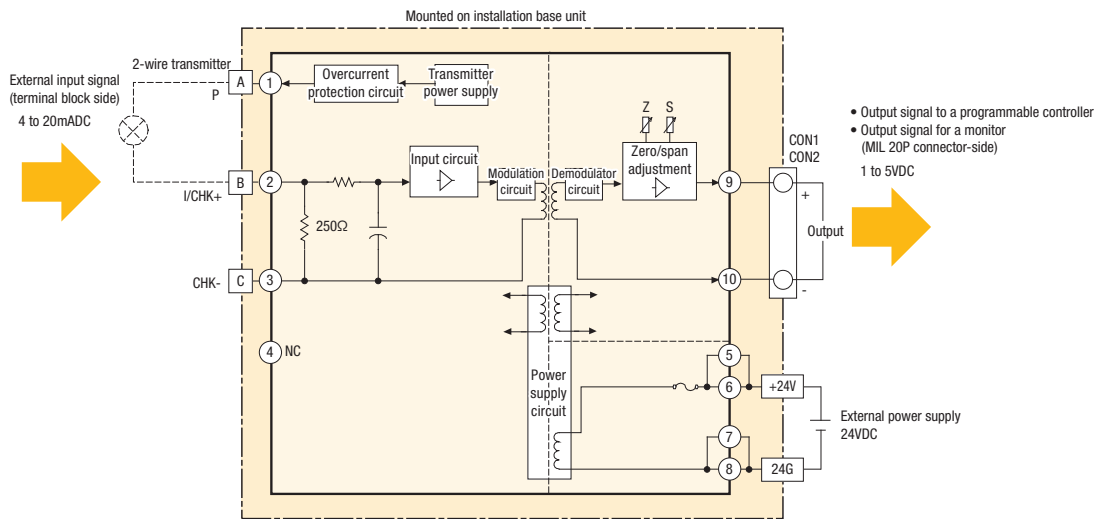
Note 1: The installation orientation is restricted when three or more modules are mounted on an installation base unit.
*: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram



Note: For use by inputting a current (4 to 20mADC), connect the positive side to the I/CHK+ terminal and the negative side to the CHK- terminal.



[Input] Resistance temperature detector to voltage signal conversion module

FA-ATSVM1XRPT, FA-ATSVM1XRPT0010, FA-ATSVM1XRPT0020, FA-ATSVM1XRJPT

- This module converts a resistance temperature detector input into a voltage output. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

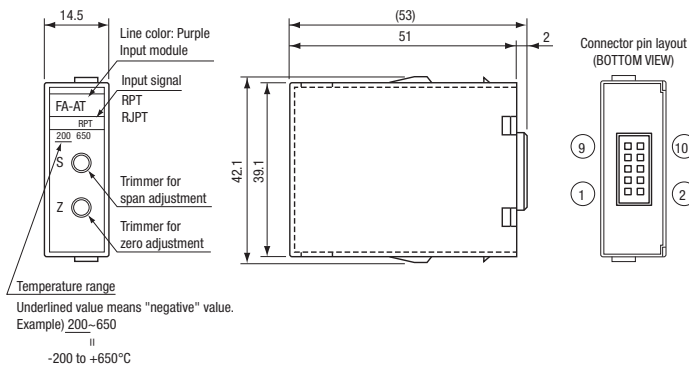
Specifications

| Item | Specifications | | | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|---------------------|---------------------|
| | FA-ATSVM1XRPT | FA-ATSVM1XRPT0010 | FA-ATSVM1XRPT0020 | FA-ATSVM1XRJPT |
| No. of points | 1 (1 channel) | | | |
| Input | Input signal | Pt100 (-200 to +650°C) | Pt100 (0 to +100°C) | Pt100 (0 to +200°C) |
| | Disconnection detection function | Provided (Upscale burnout) | | |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) | | |
| | Linearization tolerance | ±0.1% or less | | |
| | Temperature characteristics | ±0.010%/°C or less | | |
| Output (programmable controller side) | Output signal | 1 to 5V | | |
| | Output allowable load resistance | 10kΩ or more | | |
| Response speed* | 100ms or less | | | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | | | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | | | |
| Current consumption (24VDC) | 25mA or less | | | |
| Insulation method | Transformer | | | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | | | |
| Weight | Approx. 40g | | | |

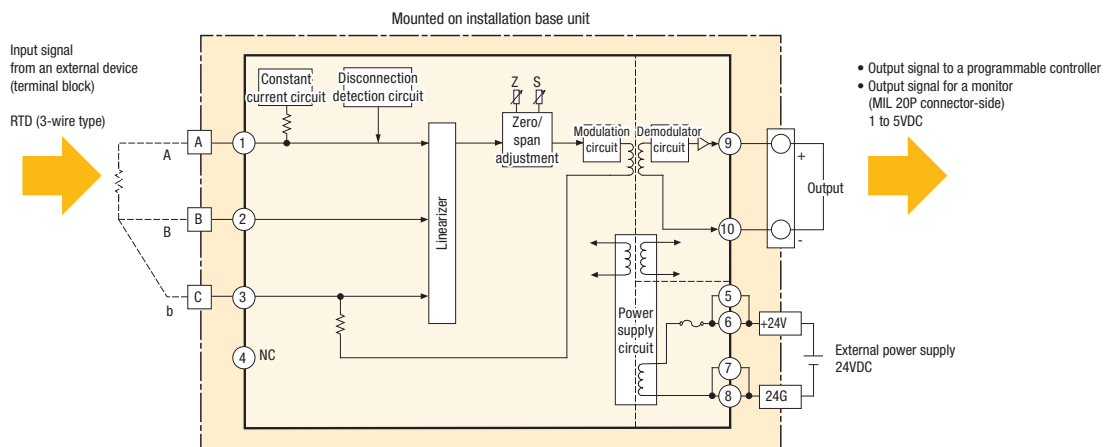
Note 1: The input range (temperature range) is fixed to the value indicated in the table.
 *: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram





[Input] Thermocouple temperature to voltage signal conversion module

FA-ATSVM1XTB, FA-ATSVM1XTS, FA-ATSVM1XTE, FA-ATSVM1XTT, FA-ATSVM1XTR, FA-ATSVM1XTK, FA-ATSVM1XTK0040, FA-ATSVM1XTK0060, FA-ATSVM1XTK0080, FA-ATSVM1XTJ, FA-ATSVM1XTN

- This module converts a thermocouple input into a voltage output. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

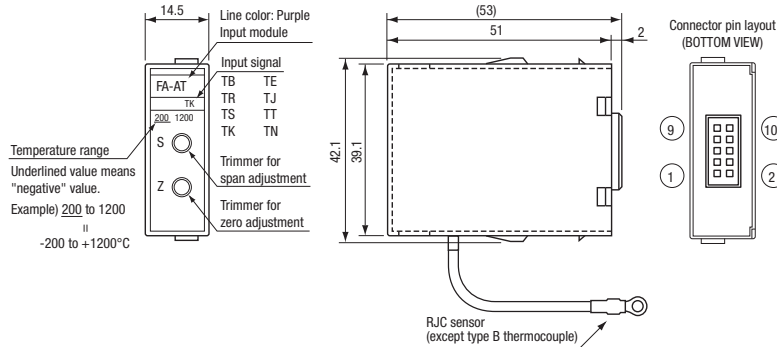
Specifications

| Item | Specifications | | | | | | | | | | | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------|--------------------------------------|--------------------------------------|------------------------------------|---------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|---------------------------------------|
| | FA-ATSVM1XTB | FA-ATSVM1XTS | FA-ATSVM1XTE | FA-ATSVM1XTT | FA-ATSVM1XTR | FA-ATSVM1XTK | FA-ATSVM1XTK0040 | FA-ATSVM1XTK0060 | FA-ATSVM1XTK0080 | FA-ATSVM1XTJ | FA-ATSVM1XTN | |
| No. of points | 1 (1 channel) | | | | | | | | | | | |
| Input | Input signal | Type B thermocouple (+600 to +1700°C) | Type S thermocouple (0 to +1600°C) | Type E thermocouple (-200 to +900°C) | Type T thermocouple (-200 to +350°C) | Type R thermocouple (0 to +1600°C) | Type K thermocouple (-200 to +1200°C) | Type K thermocouple (0 to +400°C) | Type K thermocouple (0 to +600°C) | Type K thermocouple (0 to +800°C) | Type J thermocouple (-40 to +750°C) | Type N thermocouple (-200 to +1250°C) |
| | Input resistance | 1MΩ or more | | | | | | | | | | |
| | Disconnection detection function | Provided (Upscale burnout) | | | | | | | | | | |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) | | | | | | | | | | |
| | Linearization tolerance | ±0.1% or less | | | | | | | | | | |
| | Temperature characteristics | ±0.015%/°C or less | | | | | | | | | | |
| Output (programmable controller side) | Output signal | 1 to 5V | | | | | | | | | | |
| | Output allowable load resistance | 10kΩ or more | | | | | | | | | | |
| Response speed | 100ms or less | | | | | | | | | | | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | | | | | | | | | | | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | | | | | | | | | | | |
| Current consumption (24VDC) | 24mA or less | | | | | | | | | | | |
| Insulation method | Transformer | | | | | | | | | | | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | | | | | | | | | | | |
| Weight | Approx. 40g | | | | | | | | | | | |

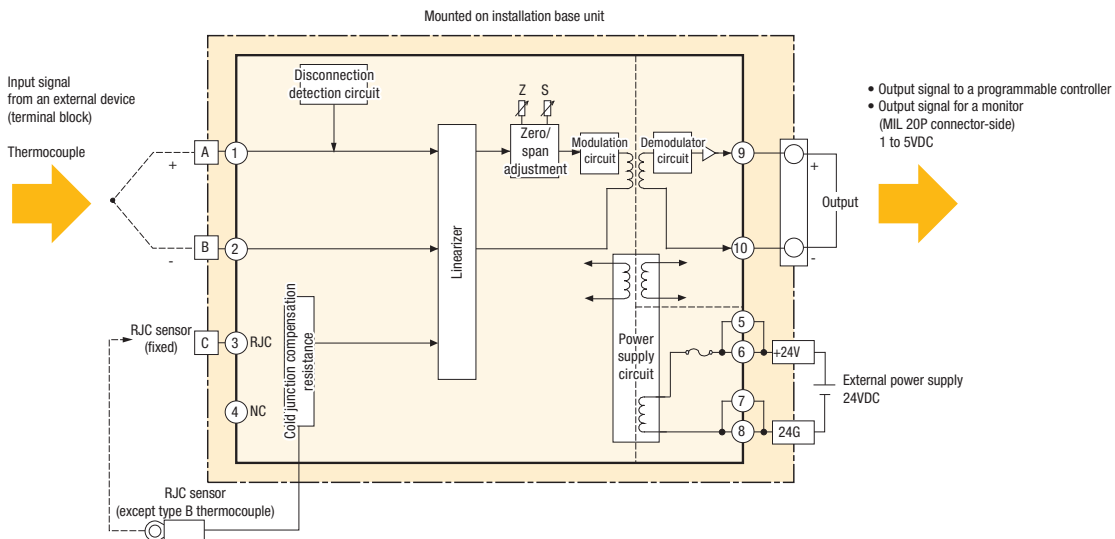
Note 1: The input range (temperature range) is fixed to the value indicated in the table.
 *: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram





[Input] 4-channel, cable with spring clamp terminal block

FA*-CB2L**AT4XV1E

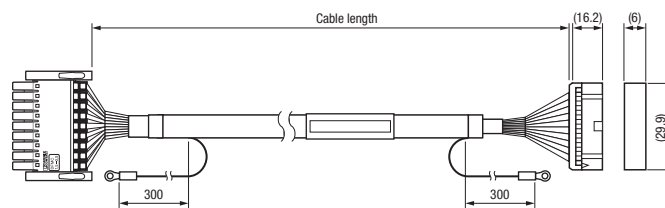
- This is a cable used to connect a programmable controller and an analog signal converter.
- Cables are wired by only removing the existing terminal block of a Mitsubishi Electric programmable controller module and connecting this cable. Cables can also be wired to our products with a connector by a single operation.
- The cable length can be customized.
(For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

Specifications

| Item | Specifications | | | | | |
|--------------------------------------------|------------------------------|-------------------|-------------------|----------------------------------|-------------------|-------------------|
| | FA2-CB2L10AT4XV1E | FA2-CB2L20AT4XV1E | FA2-CB2L30AT4XV1E | FA3-CB2L10AT4XV1E | FA3-CB2L20AT4XV1E | FA3-CB2L30AT4XV1E |
| Connectable programmable controller module | FX5-4AD | | | NZ2GN2S-60AD4 | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | |
| Cable length | 1m | 2m | 3m | 1m | 2m | 3m |
| Conductor resistance (20°C) | 0.232Ω/m or less | | | 0.232Ω/m or less | | |
| Cable | 20-core, shielded, black | | | 20-core, shielded, black | | |
| Connector | Programmable controller side | | | Spring clamp terminal block: 18P | | |
| | Installation base unit side | | | MIL 20P connector | | |
| Weight | Approx. 130g | Approx. 240g | Approx. 350g | Approx. 130g | Approx. 240g | Approx. 350g |

External dimensions

(Unit: mm)



[Input] 8-channel, cable with spring clamp terminal block

FA2-CB2L**AT8XV1E

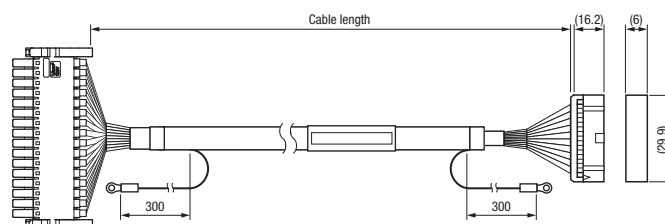
- This is a cable used to connect a programmable controller and an analog signal converter.
- Cables are wired by only removing the existing terminal block of a Mitsubishi Electric programmable controller module and connecting this cable. Cables can also be wired to our products with a connector by a single operation.
- The cable length can be customized.

Specifications

| Item | Specifications | | |
|--------------------------------------------|-------------------------------------------------------|-------------------|-------------------|
| | FA2-CB2L10AT8XV1E | FA2-CB2L20AT8XV1E | FA2-CB2L30AT8XV1E |
| Connectable programmable controller module | FX5-8AD | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB, FA-ATKAA8XM, FA-ATB8XTB | | |
| Cable length | 1m | 2m | 3m |
| Conductor resistance (20°C) | 0.232Ω/m or less | | |
| Cable | 20-core, shielded, black | | |
| Connector | Programmable controller side | | |
| | Installation base unit side | | |
| Weight | Approx. 135g | Approx. 245g | Approx. 360g |

External dimensions

(Unit: mm)





[Input] 4-channel, cable with screw terminal block

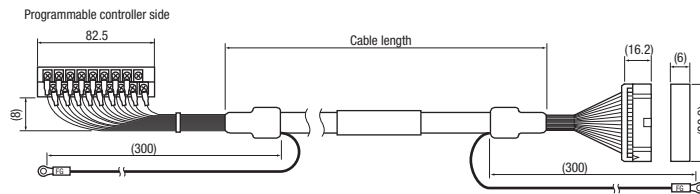
FA1-CB2LAT4XV1T**

- This is a cable used to connect a programmable controller and an analog signal converter.
 - Cables are wired by only removing the existing terminal block of a Mitsubishi Electric programmable controller module and connecting this cable. Cables can also be wired to our products with a connector by a single operation.
 - The cable length can be customized.
- (For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

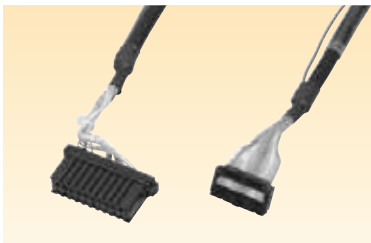
Specifications

| Item | Specifications | | |
|--------------------------------------------|-----------------------------------------------------|-------------------|-------------------|
| | FA1-CB2L10AT4XV1T | FA1-CB2L20AT4XV1T | FA1-CB2L30AT4XV1T |
| Connectable programmable controller module | R60ADH4, R60AD4, Q64ADH, Q64AD | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | |
| Cable length | 1m | 2m | 3m |
| Conductor resistance (20°C) | 0.232Ω/m or less | | |
| Cable | 20-core, shielded, black | | |
| Connector | With terminal block for MELSEC iQ-R/MELSEC-Q series | | |
| | Programmable controller side | MIL 20P connector | |
| | Installation base unit side | MIL 20P connector | |
| Weight | Approx. 165g | Approx. 280g | Approx. 390g |

External dimensions



(Unit: mm)



[Input] Connection cable with connector

FA-CBLATQ8XVA**

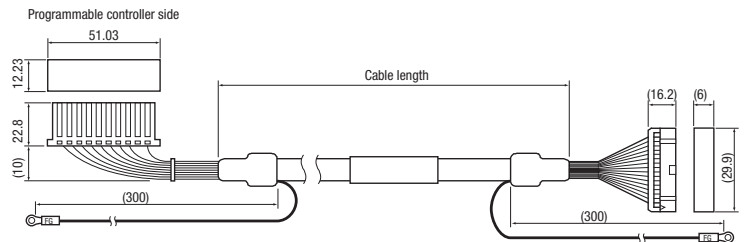
- This connector type cable can be connected/removed by one-touch motion.
- The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

Related products Conversion adapter P.268

Specifications

| Item | Specifications | | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| | FA-CBL10ATQ8XVA | FA-CBL20ATQ8XVA | FA-CBL30ATQ8XVA |
| Connectable programmable controller module | Q68ADV (when the FA-Q6TCA (terminal block to connector conversion adapter) is used) | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB, FA-ATB8XTB, FA-ATKAABXM | | |
| Cable length | 1m | 2m | 3m |
| Conductor resistance (20°C) | 232Ω/km | | |
| Cable | Conductor material: Tin-plated soft copper stranded wire, Sheath material: Heat resistant vinyl mixture (black), Outer diameter: 8.1mm | | |
| Solderless terminal | M4 round solderless terminal | | |
| Weight | Approx. 140g | Approx. 240g | Approx. 350g |

External dimensions

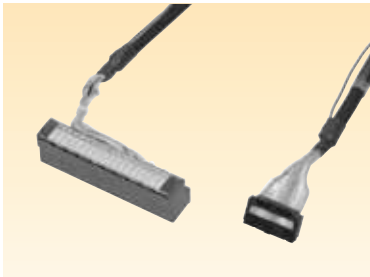


(Unit: mm)

External connections of the relay module terminal block connected to the FA-CTB20P relay module

| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|----|
| 1 | 3 | 5 | 7 | 9 | | 11 | 13 | 15 | 17 | 19 | |
| CH1 + | CH2 + | CH3 + | CH4 + | CH5 + | | CH6 + | CH7 + | CH8 + | NC | NC | |
| | 2 | 4 | 6 | 8 | 10 | | 12 | 14 | 16 | 18 | 20 |
| | CH1 - | CH2 - | CH3 - | CH4 - | CH5 - | | CH6 - | CH7 - | CH8 - | NC | FG |

*: The FG terminal is connected to the cable shield. Once the FG terminals of the cable are grounded, grounding using a junction terminal block is not required.



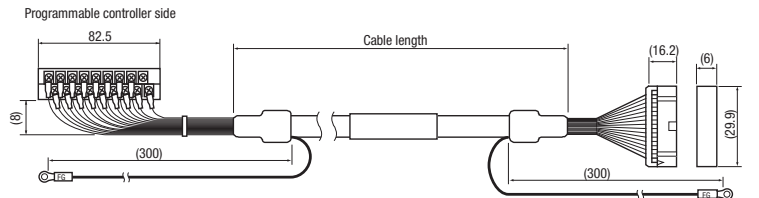
[Input] Connection cable with MELSEC-Q series screw terminal block FA-CBL**ATQ8XVT

- This cable is provided with a terminal block, enabling easy wiring.
- The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

Specifications

| Item | Specifications | | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| | FA-CBL10ATQ8XVT | FA-CBL20ATQ8XVT | FA-CBL30ATQ8XVT |
| Connectable programmable controller module | Q68ADV | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB, FA-ATB8XTB, FA-ATKAA8XM | | |
| Cable length | 1m | 2m | 3m |
| Conductor resistance (20°C) | 232Ω/km | | |
| Cable | Conductor material: Tin-plated soft copper stranded wire, Sheath material: Heat resistant vinyl mixture (black), Outer diameter: 8.1mm | | |
| Solderless terminal | M4 round solderless terminal | | |
| Weight | Approx. 190g | Approx. 300g | Approx. 390g |

External dimensions



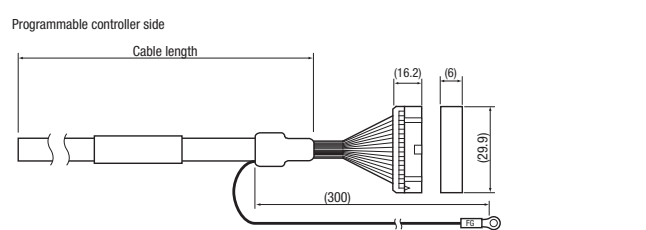
[Input] Connection cable with discrete cable on one side FA-CBL**ATF

- This cable can be used as a general-purpose cable as terminal processing has not been done on one side.
- The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

Specifications

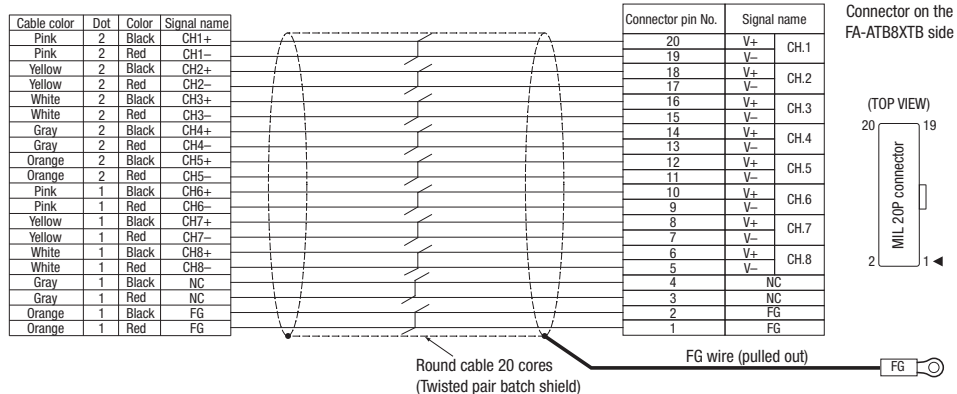
| Item | Specifications | | |
|--------------------------------------------|---------------------------------------------------------------------------------------------------|--------------|--------------|
| | FA-CBL10ATF | FA-CBL20ATF | FA-CBL30ATF |
| Connectable programmable controller module | Terminal block type module for non-Mitsubishi PLCs | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB, FA-ATB8XTB, FA-ATKAA8XM | | |
| Cable length | 1m | 2m | 3m |
| No. of cable cores | 20 | | |
| Conductor | Material: Tin-plated soft copper stranded wire, Cross sectional area: 0.08mm ² (28AWG) | | |
| Conductor resistance (20°C) | 232Ω/km | | |
| Sheath | Material: Heat resistant vinyl mixture (black), Outer diameter: 8.1mm | | |
| Solderless terminal | M4 round solderless terminal | | |
| Weight | Approx. 130g | Approx. 220g | Approx. 330g |

External dimensions



Note 1: If solderless terminal processing on the discrete cable side is desired, please consult your local Mitsubishi representative.

Connection diagram



Analog signal converters for output signals



[Output] 4-channel module installation base unit

FA1-AT1B4Y1TE, FA1-AT1B4Y1TB

- Two types are available: spring clamp terminal type and screw terminal type.
- Thick wires such as compensating lead wires can be directly connected.
- Different types of output modules can be mixed because all channels are isolated.
- The spring clamp terminal type supports push-in connection. Therefore, the wiring time can be reduced. Retightening work is not required at periodic inspection, as screws do not loose due to vibration.

Related products M3 short-circuit bar P.286 Modules P.309 to P.312 Pass-through module P.316 Dummy module P.317

Specifications

| Item | FA1-AT1B4Y1TE | FA1-AT1B4Y1TB |
|------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Type | Spring clamp terminal type (for current/voltage connection) | Screw terminal type (for current/voltage connection) |
| No. of slots | 4 | 4 |
| Terminal block | Terminal block screw | — |
| | Applicable wire | — |
| | Wire strip length | 10mm |
| Module installation | Screw | M4 × 0.7mm × 20mm or more Tightening torque range: 78 to 118N·cm (8 to 12kgf·cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| External power supply | 24VDC±10% | |
| Current consumption (24VDC) | 6mA or less (not including current consumption of signal conversion modules) | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 160g | Approx. 220g |

Note 1: Mount a dummy module into an unused slot to allow no empty slot.

Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

Note 3: When the programmable controller's output is between 4 and 20mA and the FA-ATFTMXY signal pass-through module is used, the voltage value corresponding to the input resistance of the connected device is detected as a monitor output. The current value can be calculated by dividing the detected voltage by the input resistance.

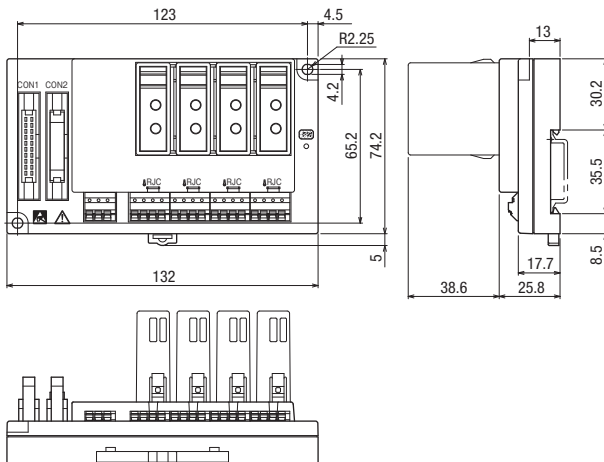
Note 4: When connecting the product with a programmable controller, confirm that the product configuration is correct. Connection based on a wrong configuration may cause a failure or malfunction.

Note 5: Output type modules (line color: orange) only can be mounted. Mounting an input type module may cause a failure or malfunction.

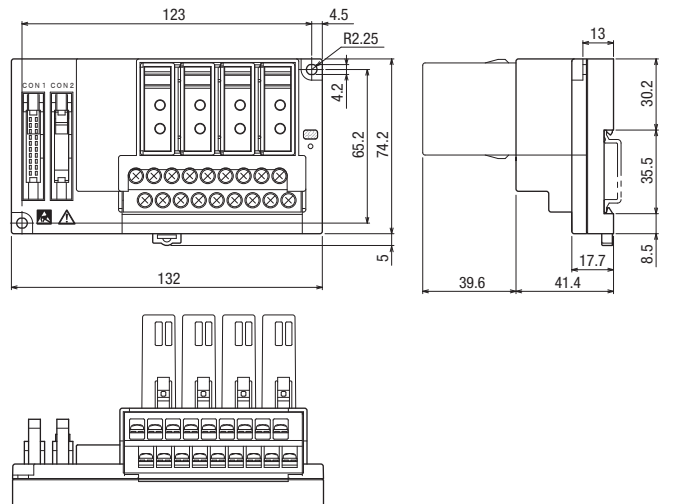
Note 6: Mount modules according to the signals of an external device. Incorrect module mounting may cause a failure or malfunction.

External dimensions

Spring clamp terminal type: FA1-AT1B4Y1TE



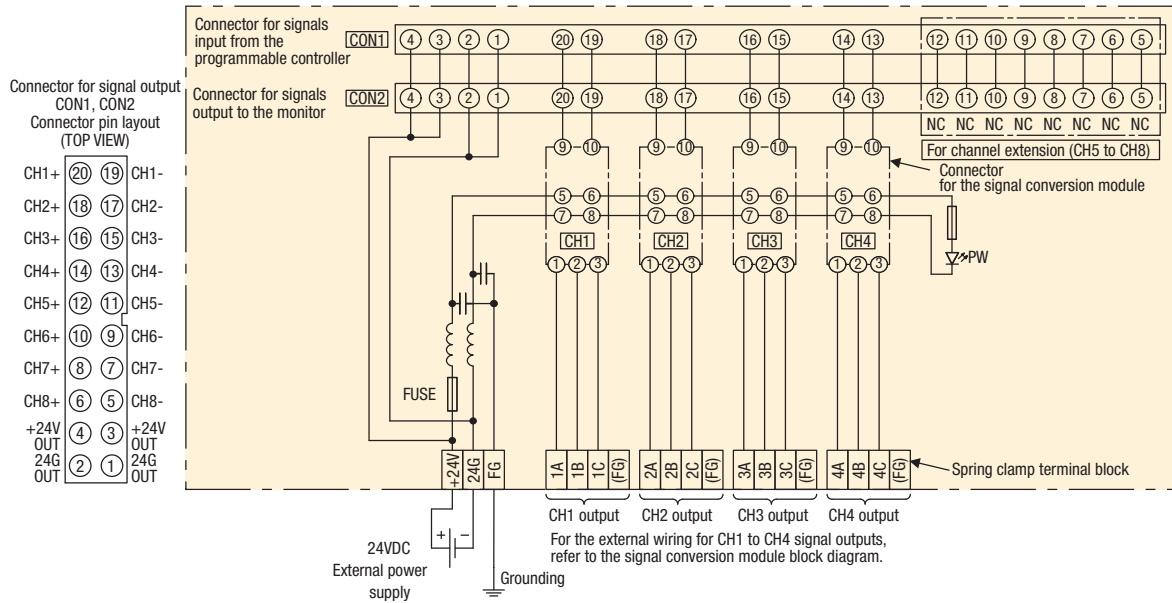
Screw terminal type: FA1-AT1B4Y1TB



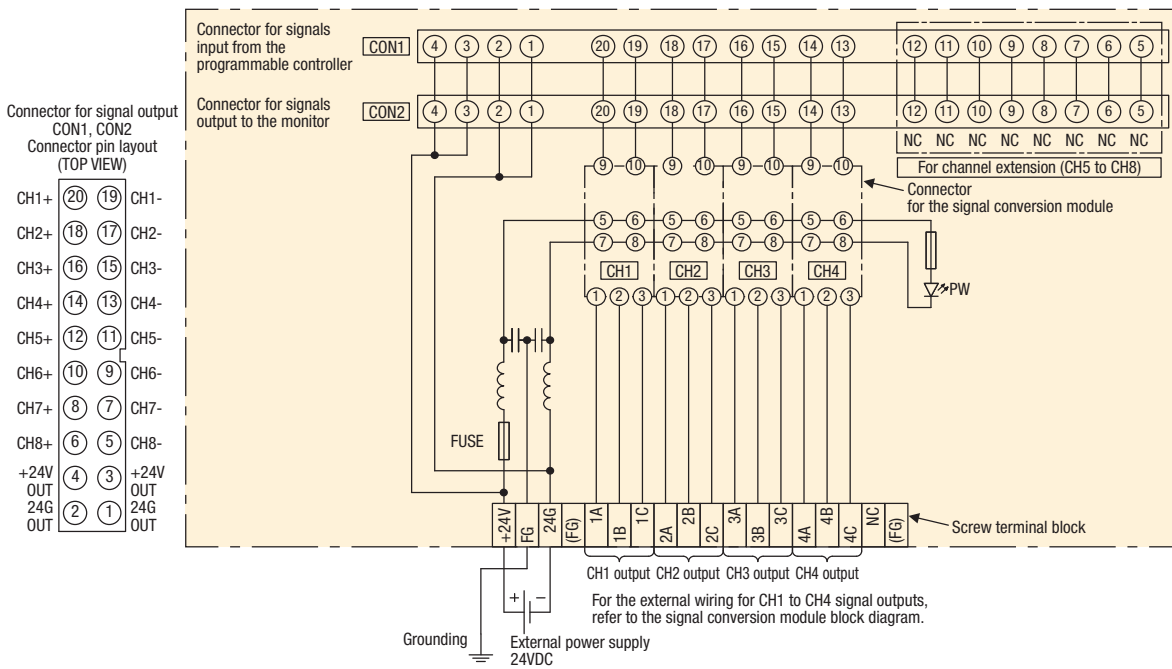
(Unit: mm)

Block diagram

Spring clamp terminal type: FA1-AT1B4Y1TE

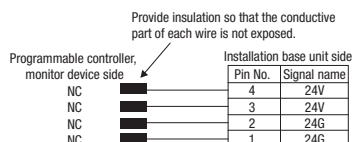


Screw terminal type: FA1-AT1B4Y1TB



Precautions

- An external power supply is connected between CON1 and CON2. When a power supply is not used, apply short-circuit protection.
 - Power supply terminal
For 24V: pin No.3 or No.4 For 24G: pin No.1 or No.2
 - Short-circuit protection
 - 1) Set the connector on the programmable controller and monitor device side to NC (No connection).
 - 2) Insulate pins at wire end for NCs.
 - Example of power supply terminal processing for a connection cable when the power supply is not used



- For a device connected to a monitor output, use a device with sufficiently large (1MΩ or more) input resistance.



[Output] Module installation base unit FA-ATB8YTB

- Thick wires such as compensating lead wires can be directly connected.
- Isolation between channels enables mixing of input modules.

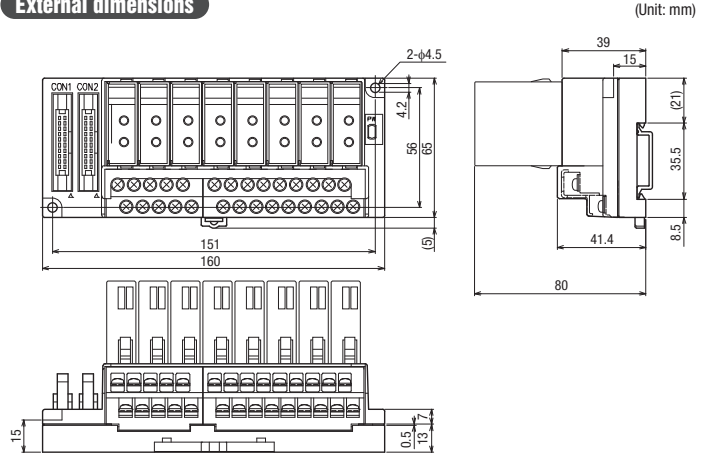
Related products M3 short-circuit bar P.286 Modules P.309 to P.312 Pass-through module P.316 Dummy module P.317

Specifications

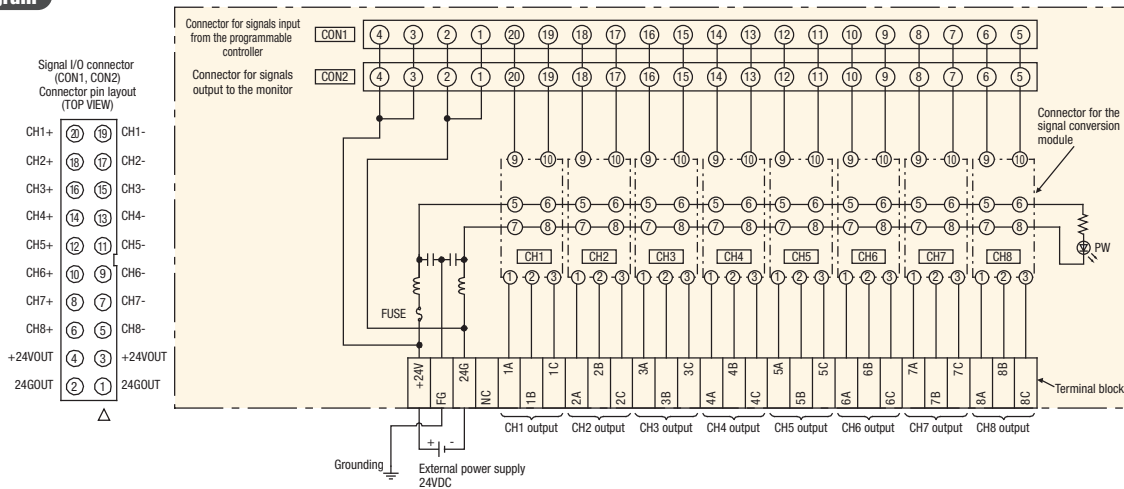
| Item | Specifications | |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| No. of slots | 8 | |
| Terminal block | Terminal screw | M3 spring-up screws, 7.62mm pitch |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 58.8 to 88.2N-cm (6 to 9kgf-cm) |
| Module installation | Screw | M4 × 0.7mm × 20mm or more Tightening torque: 78 to 118N-cm (8 to 12kgf-cm) |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| External power supply | 24VDC±10% | |
| Current consumption (24VDC) | 6mA or less (not including current consumption of modules, the programmable controller, and the monitor device) | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 320g | |

- Note 1: Mount a dummy module into an unused slot to allow no empty slot.
 Note 2: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.
 Note 3: When the programmable controller's output is between 4 and 20mA and the FA-ATFTMX signal pass-through module is used, the voltage value corresponding to the input resistance of the connected device is detected as a monitor output. The current value can be calculated by dividing the detected voltage by the input resistance.
 Note 4: When connecting the product with a programmable controller, confirm that the product configuration is correct. Connection based on a wrong configuration may cause a failure or malfunction.
 Note 5: Output type modules (line color: orange) only can be mounted. Mounting an input type module may cause a failure or malfunction.
 Note 6: Mount modules according to the signals of an external device. Incorrect module mounting may cause a failure or malfunction.

External dimensions

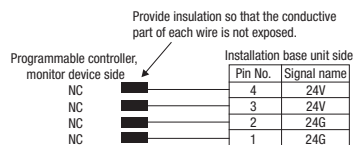


Block diagram



Precautions

- An external power supply is connected between CON1 and CON2. When a power supply is not used, apply short-circuit protection.
 - Power supply terminal
 - For 24V: pin No.3 or No.4
 - For 24G: pin No.1 or No.2
 - Short-circuit protection
 - Set the connector on the programmable controller and monitor device side to NC (No connection).
 - Insulate pins at wire end for NCs.
- Example of power supply terminal processing for a connection cable when the power supply is not used



- For a device connected to a monitor output, use a device with sufficiently large (1MΩ or more) input resistance.



[Output] Current to voltage signal conversion module

FA-ATSAM1YV05, FA-ATSAM1YV15, FA-ATSAM1YV010, FA-ATSAM1YV1010

- This module converts a current input into a voltage output. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

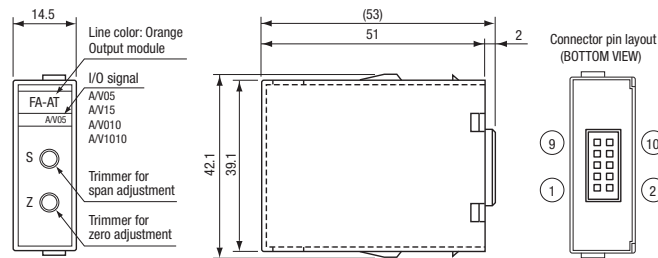
Specifications

| Item | Specifications | | | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|----------------|-----------------|
| | FA-ATSAM1YV05 | FA-ATSAM1YV15 | FA-ATSAM1YV010 | FA-ATSAM1YV1010 |
| No. of points | 1 (1 channel) | | | |
| Input (programmable controller side) | Input range | 4 to 20mA | | |
| | Input resistance | 250Ω | | |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) | | |
| | Temperature characteristics | ±0.015%/°C or less | | |
| Output | Output signal | 0 to 5V | 0 to 10V | -10 to +10V |
| | Output allowable load resistance | 2.5kΩ or more | | |
| | Disconnection detection function | Unavailable | | |
| Response speed* | 15ms or less | | | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | | | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | | | |
| Current consumption (24VDC) | 45mA or less | | | |
| Insulation method | Transformer | | | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | | | |
| Weight | Approx. 40g | Approx. 40g | Approx. 40g | Approx. 40g |

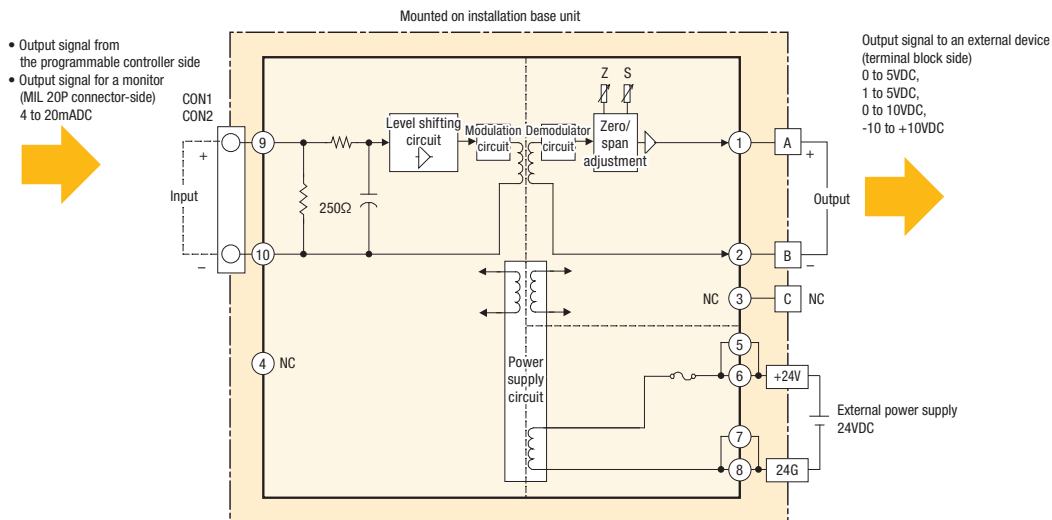
*: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram





[Output] Current to current signal conversion module

FA-ATSAM1YA020, FA-ATSAM1YA420

- This module converts the range of a current input, and outputs it. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

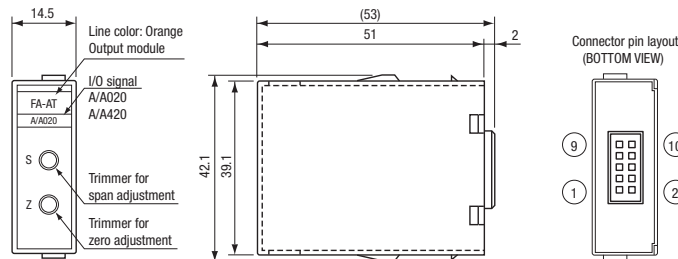
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|
| | FA-ATSAM1YA020 | FA-ATSAM1YA420 |
| No. of points | 1 (1 channel) | |
| Input (programmable controller side) | Input range | 4 to 20mA |
| | Input resistance | 250Ω |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) |
| | Temperature characteristics | ±0.015%/°C or less |
| Output | Output signal | 0 to 20mA |
| | Output allowable load resistance | 600Ω or less |
| Response speed* | Disconnection detection function | Unavailable |
| | | 15ms or less |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | |
| Current consumption (24VDC) | 45mA or less | |
| Insulation method | Transformer | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 40g | |

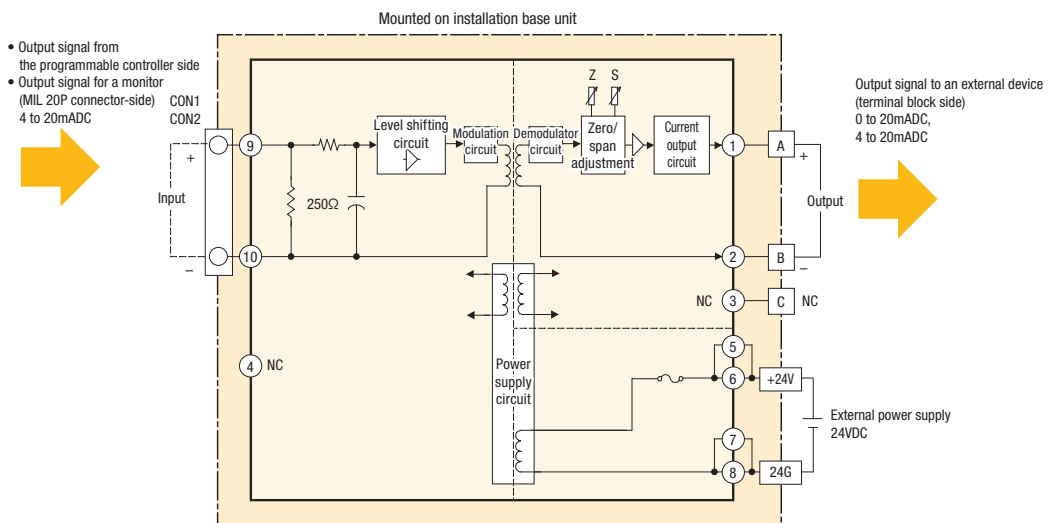
*: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram





[Output] Voltage to voltage signal conversion module

FA-ATSVM1YV05, FA-ATSVM1YV15, FA-ATSVM1YV010, FA-ATSVM1YV1010

- This module converts the range of a voltage input, and outputs it. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

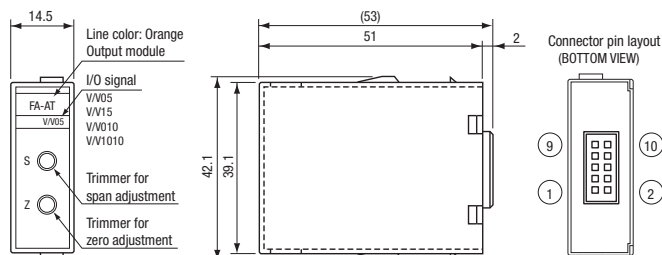
Specifications

| Item | Specifications | | | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|----------------|-----------------|
| | FA-ATSVM1YV05 | FA-ATSVM1YV15 | FA-ATSVM1YV010 | FA-ATSVM1YV1010 |
| No. of points | 1 (1 channel) | | | |
| Input (programmable controller side) | Input range | 1 to 5V | | |
| | Input resistance | 1MΩ or more | | |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) | | |
| | Temperature characteristics | ±0.015%/°C or less | | |
| Output | Output signal | 0 to 5V | 0 to 10V | -10 to +10V |
| | Output allowable load resistance | 2.5kΩ or more | | |
| | Disconnection detection function | Unavailable | | |
| Response speed | 15ms or less | | | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | | | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | | | |
| Current consumption (24VDC) | 45mA or less | | | |
| Insulation method | Transformer | | | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | | | |
| Weight | Approx. 40g | Approx. 40g | Approx. 40g | Approx. 40g |

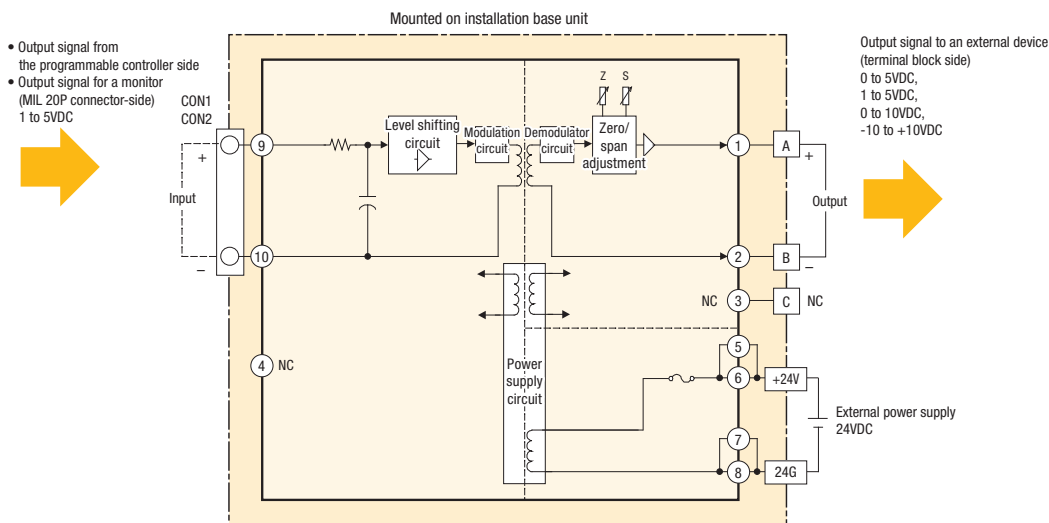
*: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram



- Output signal from the programmable controller side
- Output signal for a monitor (MIL 20P connector-side) 1 to 5VDC

Output signal to an external device (terminal block side)
 0 to 5VDC,
 1 to 5VDC,
 0 to 10VDC,
 -10 to +10VDC



[Output] Voltage to current signal conversion module

FA-ATSVM1YA020, FA-ATSVM1YA420

- This module converts a voltage input into a current output. (Isolation between input and output is provided.)
- The module can be mounted/removed to/from an installation base unit easily.

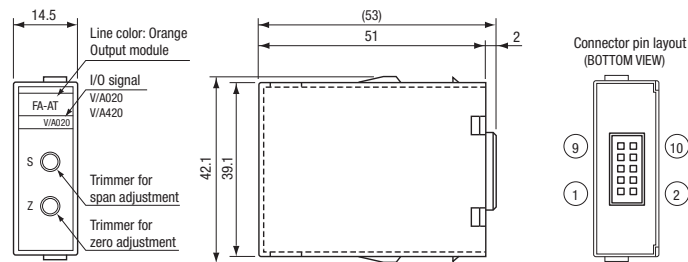
Specifications

| Item | Specifications | |
|------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------|
| | FA-ATSVM1YA020 | FA-ATSVM1YA420 |
| No. of points | 1 (1 channel) | |
| Input (programmable controller side) | Input range | 1 to 5V |
| | Input resistance | 1MΩ or more |
| Accuracy (percentage of full scale) | Reference accuracy | ±0.1% or less (surrounding air temperature: 25°C±5°C) |
| | Temperature characteristics | ±0.015%/°C or less |
| Output | Output signal | 0 to 20mA |
| | Output allowable load resistance | 600Ω or less |
| | Disconnection detection function | Unavailable |
| Response speed* | 15ms or less | |
| Zero/span adjustment | Zero adjustment range: -2 to 2%, span adjustment range: 98 to 102% | |
| Power supply | 24VDC±10% (Supplied from the installation base unit) | |
| Current consumption (24VDC) | 45mA or less | |
| Insulation method | Transformer | |
| Withstand voltage, insulation resistance | Between input, output, and power supply: 750VAC for 1 minute, 10MΩ or more | |
| Weight | Approx. 40g | |

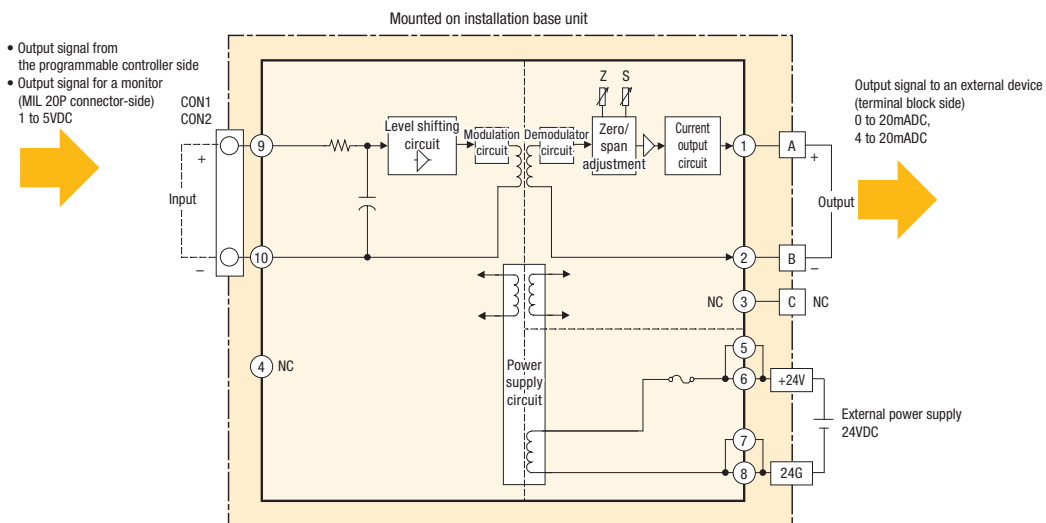
*: Time from when a startup pulse is input until the output level reaches 90%

External dimensions

(Unit: mm)



Block diagram





[Output] 4-channel, cable with spring clamp terminal block

FA*-CB2LAT4Y*1E**

- This is a cable used to connect a programmable controller and an analog signal converter.
 - Cables are wired by only removing the existing terminal block of a Mitsubishi Electric programmable controller module and connecting this cable. Cables can also be wired to our products with a connector by a single operation.
 - The cable length can be customized.
- (For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

Specifications

Voltage output

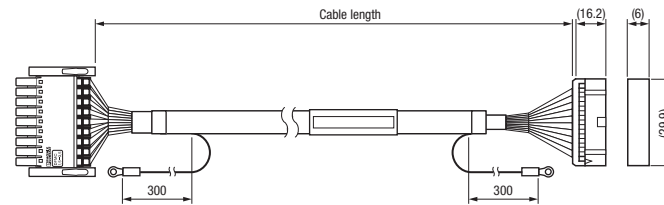
| Item | Specifications | | | | | |
|--------------------------------------------|------------------------------|-------------------|-------------------|----------------------------------|-------------------|-------------------|
| | FA2-CB2L10AT4YV1E | FA2-CB2L20AT4YV1E | FA2-CB2L30AT4YV1E | FA3-CB2L10AT4YV1E | FA3-CB2L20AT4YV1E | FA3-CB2L30AT4YV1E |
| Connectable programmable controller module | FX5-4DA | | | NZ2GN2S-60DA4 | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | |
| Cable length | 1m | 2m | 3m | 1m | 2m | 3m |
| Conductor resistance (20°C) | 0.232Ω/m or less | | | 0.232Ω/m or less | | |
| Cable | 20-core, shielded, black | | | 20-core, shielded, black | | |
| Connector | Programmable controller side | | | Spring clamp terminal block: 18P | | |
| | Installation base unit side | | | MIL 20P connector | | |
| Weight | Approx. 130g | Approx. 240g | Approx. 350g | Approx. 130g | Approx. 240g | Approx. 350g |

Current output

| Item | Specifications | | | | | |
|--------------------------------------------|------------------------------|-------------------|-------------------|----------------------------------|-------------------|-------------------|
| | FA2-CB2L10AT4YA1E | FA2-CB2L20AT4YA1E | FA2-CB2L30AT4YA1E | FA3-CB2L10AT4YA1E | FA3-CB2L20AT4YA1E | FA3-CB2L30AT4YA1E |
| Connectable programmable controller module | FX5-4DA | | | Z2GN2S-60DA4 | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | |
| Cable length | 1m | 2m | 3m | 1m | 2m | 3m |
| Conductor resistance (20°C) | 0.232Ω/m or less | | | 0.232Ω/m or less | | |
| Cable | 20-core, shielded, black | | | 20-core, shielded, black | | |
| Connector | Programmable controller side | | | Spring clamp terminal block: 18P | | |
| | Installation base unit side | | | MIL 20P connector | | |
| Weight | Approx. 130g | Approx. 240g | Approx. 350g | Approx. 130g | Approx. 240g | Approx. 350g |

External dimensions

(Unit: mm)



[Output] 4-channel, cable with screw terminal block

FA1-CB2LAT4Y*1T**

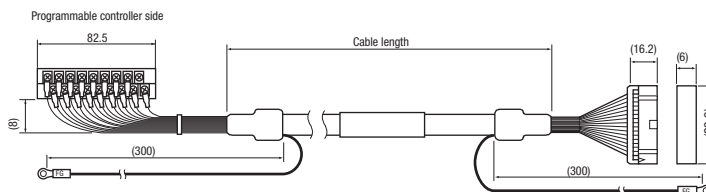
- This is a cable used to connect a programmable controller and an analog signal converter.
 - Cables are wired by only removing the existing terminal block of a Mitsubishi Electric programmable controller module and connecting this cable. Cables can also be wired to our products with a connector by a single operation.
 - The cable length can be customized.
- (For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

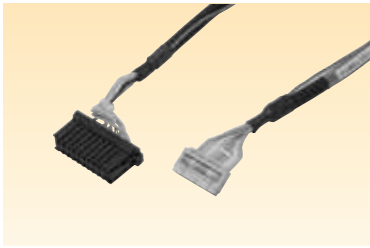
Specifications

| Item | Specifications | | | | | |
|--------------------------------------------|------------------------------|-------------------|-------------------|-----------------------------------------------------|-------------------|-------------------|
| | FA1-CB2L10AT4YV1T | FA1-CB2L20AT4YV1T | FA1-CB2L30AT4YV1T | FA1-CB2L10AT4YA1T | FA1-CB2L20AT4YA1T | FA1-CB2L30AT4YA1T |
| Connectable programmable controller module | R60DAH4, R60DA4, L60DA4 | | | R60DAH4, R60DA4, Q64DAH, Q64DAN | | |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | | FA1-AT1B4X1TE, FA1-AT1B4X1TB | | |
| Cable length | 1m | 2m | 3m | 1m | 2m | 3m |
| Conductor resistance (20°C) | 0.232Ω/m or less | | | 0.232Ω/m or less | | |
| Cable | 20-core, shielded, black | | | 20-core, shielded, black | | |
| Connector | Programmable controller side | | | With terminal block for MELSEC iQ-R/MELSEC-Q series | | |
| | Installation base unit side | | | MIL 20P connector | | |
| Weight | Approx. 165g | Approx. 280g | Approx. 390g | Approx. 165g | Approx. 280g | Approx. 390g |

External dimensions

(Unit: mm)





[Output] Connection cable with connector

FA-CBL**ATQ8YA

- This connector type cable can be connected/removed by one-touch motion.
- The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

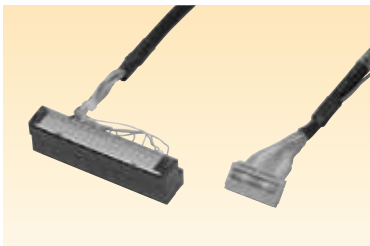
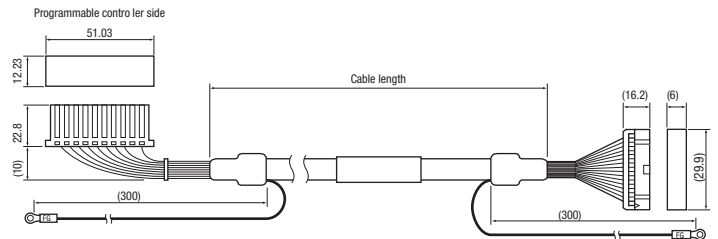
Related products Conversion adapter P.268

Specifications

| Item | Specifications | | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|
| | FA-CBL10ATQ8YA | FA-CBL20ATQ8YA | FA-CBL30ATQ8YA |
| Connectable programmable controller module | Q68DAIN, Q68DAVN (when the FA-Q6TCA (terminal block to connector conversion adapter) is used) | | |
| Connectable module | FA1-AT1B4Y1TE, FA1-AT1B4Y1TB, FA-ATB8YTB | | |
| Cable length | 1m | 2m | 3m |
| Conductor resistance (20°C) | 232Ω/km | | |
| Cable | Conductor material: Tin-plated soft copper stranded wire, Sheath material: Heat resistant vinyl mixture (black), Outer diameter: 8.1mm | | |
| Solderless terminal | M4 round solderless terminal | | |
| Weight | Approx. 140g | Approx. 240g | Approx. 350g |

External dimensions

(Unit: mm)



[Output] Connection cable with MELSEC-Q Series terminal block

FA-CBL**ATQ8YT

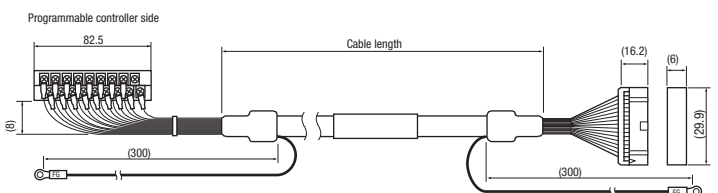
- This cable is provided with a terminal block, enabling easy wiring.
- The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

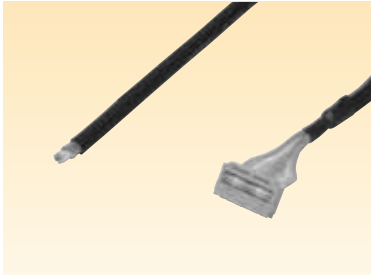
Specifications

| Item | Specifications | | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|
| | FA-CBL10ATQ8YT | FA-CBL20ATQ8YT | FA-CBL30ATQ8YT |
| Connectable programmable controller module | Q68DAIN, Q68DAVN | | |
| Connectable module | FA1-AT1B4Y1TE, FA1-AT1B4Y1TB, FA-ATB8YTB | | |
| Cable length | 1m | 2m | 3m |
| Conductor resistance (20°C) | 232Ω/km | | |
| Cable | Conductor material: Tin-plated soft copper stranded wire, Sheath material: Heat resistant vinyl mixture (black), Outer diameter: 8.1mm | | |
| Solderless terminal | M4 round solderless terminal | | |
| Weight | Approx. 190g | Approx. 300g | Approx. 390g |

External dimensions

(Unit: mm)





[Output] Connection cable with discrete cable on one side

FA-CBLATYF**

- This cable can be used as a general-purpose cable as terminal processing has not been done on one side.
- The cable is a shielded cable, and is provided with a solderless terminal for shield grounding.

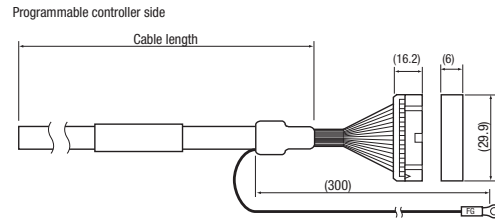
Specifications

| Item | Specifications | | |
|--------------------------------------------|---------------------------------------------------------------------------------------------------|--------------|--------------|
| | FA-CBL10ATYF | FA-CBL20ATYF | FA-CBL30ATYF |
| Connectable programmable controller module | Terminal block type module for non-Mitsubishi PLCs | | |
| Connectable module | FA1-AT1B4Y1TE, FA1-AT1B4Y1TB, FA-ATB8YTB | | |
| Cable length | 1m | 2m | 3m |
| No. of cable cores | 20 | | |
| Conductor | Material: Tin-plated soft copper stranded wire, Cross sectional area: 0.08mm ² (28AWG) | | |
| Conductor resistance (20°C) | 232Ω/km | | |
| Sheath | Material: Heat resistant vinyl mixture (black), Outer diameter: 8.1mm | | |
| Solderless terminal | M4 round solderless terminal | | |
| Weight | Approx. 130g | Approx. 220g | Approx. 330g |

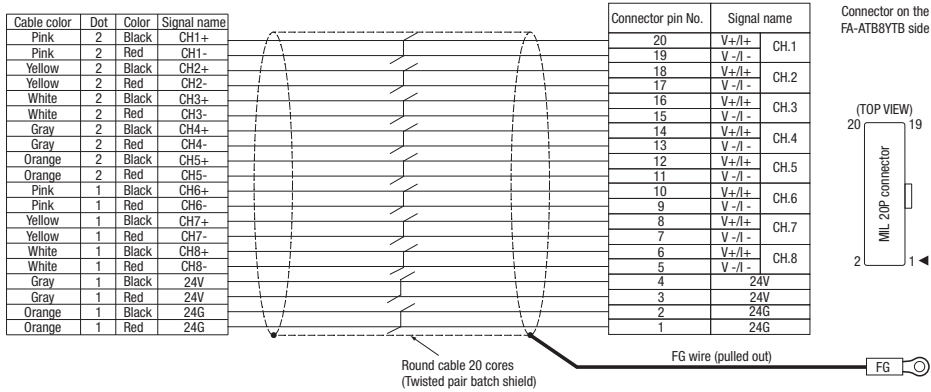
Note 1: If solderless terminal processing on the discrete cable side is desired, please consult your local Mitsubishi representative.

External dimensions

(Unit: mm)

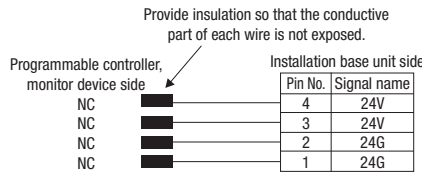


Connection diagram



Precautions

- When a power supply is not used, apply short-circuit protection.
 - Short-circuit protection
 - Provide insulation to prevent a short-circuit on the discrete cable side of a cable.
 - Example of power supply terminal processing for a connection cable when the power supply is not used





[Input/output] Signal pass-through module FA-ATFTMX

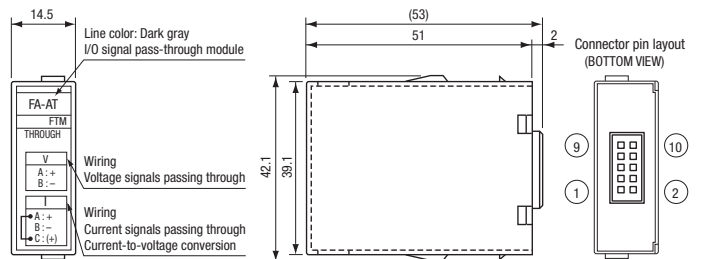
- Signals not needed to be isolated are passed through.
- The module also can convert a current input to a voltage output.

Specifications

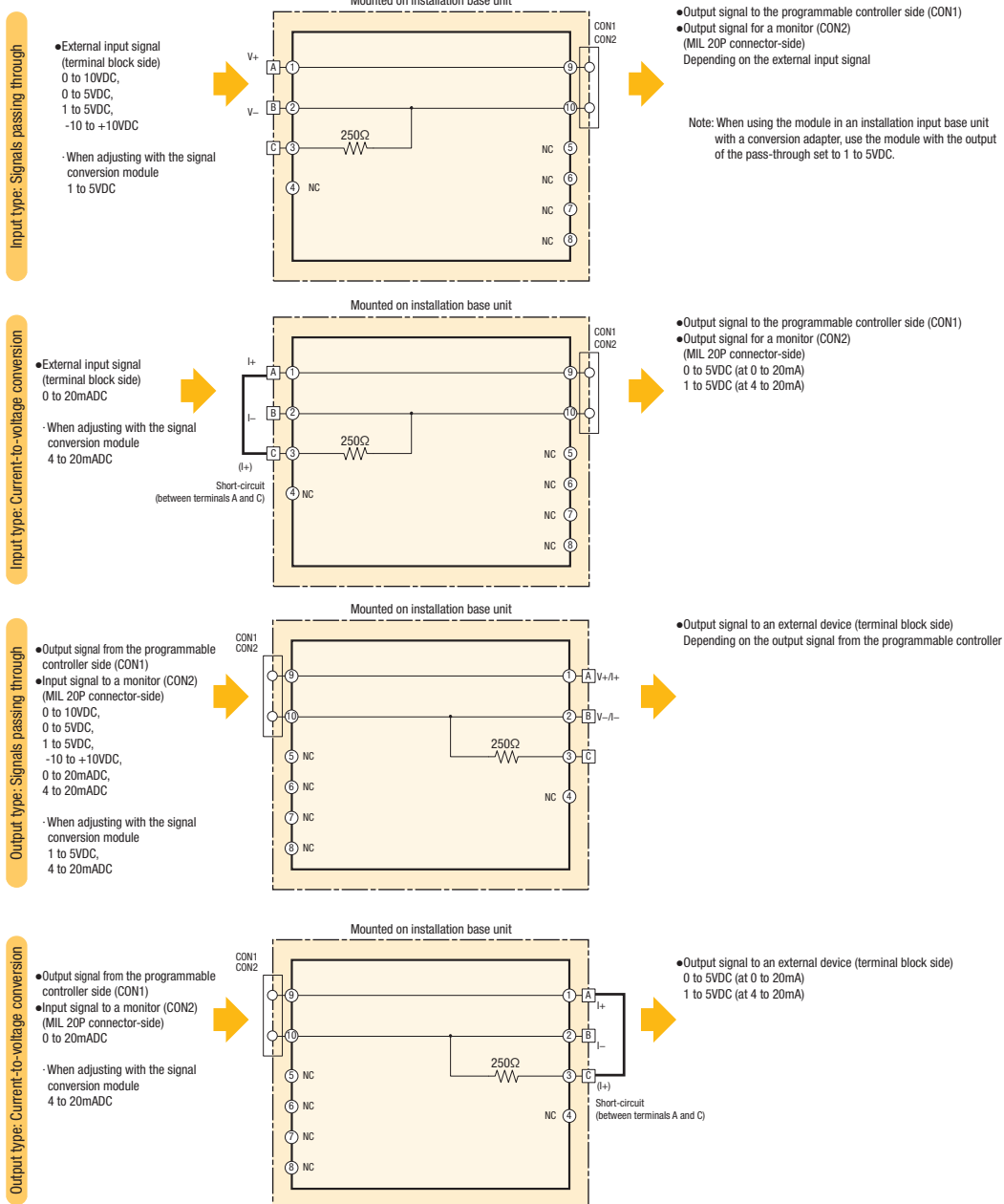
| Item | Specifications | |
|----------------------|---------------------------------------------|--------------------------------------|
| No. of points | 1 (1 channel) | |
| Conversion type | When signals are passed through | When current is converted to voltage |
| Input | Input resistance | 250Ω |
| | Resistor accuracy | ±0.1% or less |
| | Resistor temperature characteristics | ±0.0025%/°C or less |
| Allowable I/O signal | Voltage: 10V or less, Current: 20mA or less | |
| Weight | Approx. 30g | |

Note 1: When the FA-ATKAA8XM is used, the module can be used for current input only. (Voltage conversion cannot be used.)
 *: When current is converted to voltage, short across terminals A and C of the installation base unit terminal block.

External dimensions



Block diagram





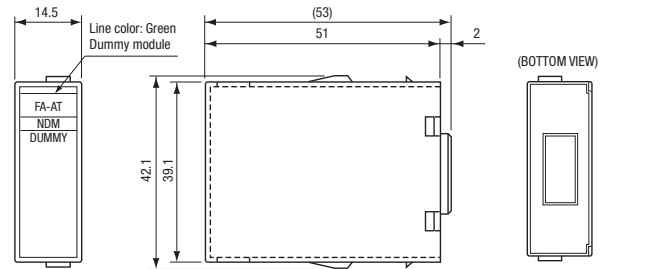
[Input/output] Dummy module FA-ATNDM5

- The module is used for dust protection of an empty slot in a base.
- The module can be mounted/removed to/from an installation base unit easily.

Specifications

| Item | Specifications |
|---------------|---------------------------------------|
| No. of points | 1 (1 channel) |
| Quantity | 5 |
| Weight | Approx. 100g (Approx. 20g per module) |

External dimensions



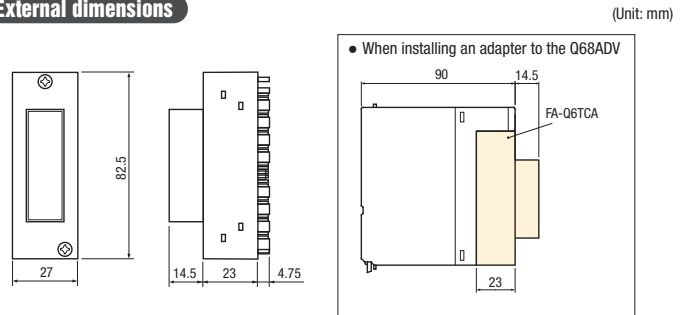
Terminal block to connector conversion adapter FA-Q6TCA

- This module converts a terminal block into a connector which can be connected/removed by one-touch motion.
- The module can be used for a terminal block type analog module.

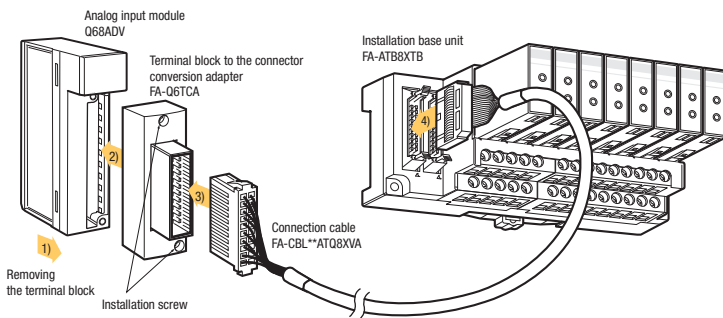
Specifications

| Item | Specifications |
|-----------------------|------------------------------------------------------------------------------------------------------------|
| Rated voltage/current | Voltage: 121VDC / 264VAC Current: 2A (for terminals No.1 to No.16) / 8A (for terminals No.17 and No.18) |
| Tightening torque | 66 to 89N·cm (7 to 9kgf·cm) |
| Weight | Approx. 80g |

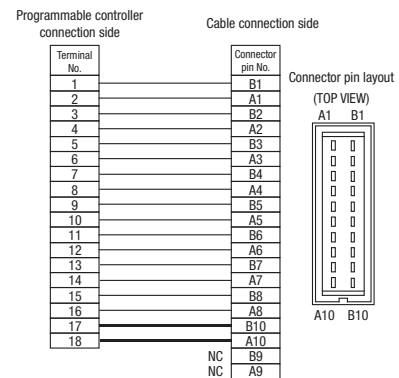
External dimensions



How to use the adapter



Connection diagram



- Connection example of Q68ADV and analog signal converter
- 1) Remove the terminal block of the Q68ADV.
- 2) Install the FA-Q6TCA (terminal block to connector conversion adapter) to the Q68ADV.
Note: Tighten the mounting screws gradually and alternately to make the FA-Q6TCA parallel to the Q68ADV.
- 3) Connect the FA-CBL**ATQ8XVA (connection cable) to the FA-Q6TCA.
- 4) Connect the FA-CBL**ATQ8XVA (connection cable) to the FA-ATB8XTB (installation base unit).



Connection cable for 4-channel installation base unit extension

FA1-CB2L**AT4EX

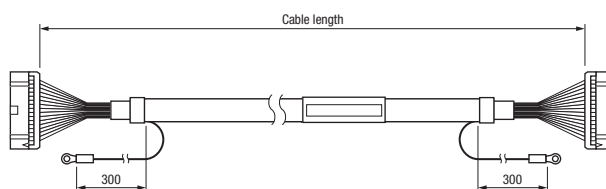
- This is a cable used to extend an analog signal converter.
- The cable is connected to an analog signal converter by a single operation.
- The cable length can be customized.
(For applicable cables and the maximum cable length, please consult your local Mitsubishi representative.)

Specifications

| Item | Specifications | | | |
|-----------------------------|------------------------------------------------------------|-----------------|-----------------|-----------------|
| | FA1-CB2L05AT4EX | FA1-CB2L10AT4EX | FA1-CB2L20AT4EX | FA1-CB2L30AT4EX |
| Connectable module | FA1-AT1B4X1TE, FA1-AT1B4X1TB, FA1-AT1B4Y1TE, FA1-AT1B4Y1TB | | | |
| Cable length | 0.5m | 1m | 2m | 3m |
| Conductor resistance (20°C) | 0.232Ω/m or less | | | |
| Cable | 20-core, shielded, black | | | |
| Connector | MIL 20P (both ends) | | | |
| Weight | Approx. 65g | Approx. 120g | Approx. 230g | Approx. 345g |

External dimensions

(Unit: mm)



Small-scale IoT (network interface modules)

Model list

Network interface modules

| Supported network | Specifications | | Dedicated cable | Model | Refer to |
|--------------------------------------------------------------------------------------------------------|------------------------------|----------------------|------------------------------------------|------------------|----------|
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) MODBUS/TCP | For digital signal converter | Input type | Included | FA3-TH1M16XC-01C | P.322 |
| | | Output type (sink) | | FA3-TH1M16Y-01C | P.322 |
| | | Output type (source) | | FA3-TH1M16YE-01C | P.322 |
| | | Input type | Not included (Use an optional cable.) | FA3-TH1M16XC | P.322 |
| | | Output type (sink) | | FA3-TH1M16Y | P.322 |
| | | Output type (source) | | FA3-TH1M16YE | P.322 |
| | For analog signal converter | Input type | Included | FA3-AT1M8X-01C | P.322 |
| | | Output type | | FA3-AT1M8Y-01C | P.322 |
| | | Input type | Not included (Use an optional cable.) | FA3-AT1M8X | P.322 |
| | | Output type | | FA3-AT1M8Y | P.322 |
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) | For digital signal converter | Input type | Included | FA3-TH1T16XC-01C | P.324 |
| | | Output type (sink) | | FA3-TH1T16Y-01C | P.324 |
| | | Output type (source) | | FA3-TH1T16YE-01C | P.324 |
| | | Input type | Not included (Use an optional cable.) | FA3-TH1T16XC | P.324 |
| | | Output type (sink) | | FA3-TH1T16Y | P.324 |
| | | Output type (source) | | FA3-TH1T16YE | P.324 |
| | For analog signal converter | Input type | Included | FA3-AT1T8X-01C | P.324 |
| | | Output type | | FA3-AT1T8Y-01C | P.324 |
| | | Input type | Not included (Use an optional cable.) | FA3-AT1T8X | P.324 |
| | | Output type | | FA3-AT1T8Y | P.324 |
| CC-Link | For digital signal converter | Input type | Included | FA3-TH1C16XC-01C | P.326 |
| | | Output type (sink) | | FA3-TH1C16Y-01C | P.326 |
| | | Output type (source) | | FA3-TH1C16YE-01C | P.326 |
| | | Input type | Not included (Use an optional cable.) | FA3-TH1C16XC | P.326 |
| | | Output type (sink) | | FA3-TH1C16Y | P.326 |
| | | Output type (source) | | FA3-TH1C16YE | P.326 |
| | For analog signal converter | Input type | Included | FA3-AT1C8X-01C | P.326 |
| | | Output type | | FA3-AT1C8Y-01C | P.326 |
| | | Input type | Not included (Use an optional cable.) | FA3-AT1C8X | P.326 |
| | | Output type | | FA3-AT1C8Y | P.326 |

Connection cables

Cables for network interface modules

| Product | Remarks | Cable length | Model | Refer to |
|--------------------------------------|--------------------------------------------------------------------------|--------------|------------------|----------|
| Dedicated cable | A cable included with the product (FA3-□□-01C) | 0.1m | — | — |
| Extension cable for signal converter | An optional cable required when a cable is not included with the product | 1m | FA3-CB2L10MM1H20 | P.320 |
| | | 2m | FA3-CB2L20MM1H20 | P.320 |
| | | 3m | FA3-CB2L30MM1H20 | P.320 |



CC-Link IE TSN/Ethernet-compatible network interface module (MODBUS/TCP-compatible product)

| | | |
|-----------------------------------------------|--------------|------------------|
| Digital signal converter (terminal module) | FA3-TH1M16XC | FA3-TH1M16XC-01C |
| | FA3-TH1M16Y | FA3-TH1M16Y-01C |
| | FA3-TH1M16YE | FA3-TH1M16YE-01C |
| Analog signal converter | FA3-AT1M8X | FA3-AT1M8X-01C |
| | FA3-AT1M8Y | FA3-AT1M8Y-01C |

- Productivity and quality are improved by connecting a device such as a sensor connected to a digital signal converter (terminal module) or an analog signal converter via network to collect the operating information of the facility and control the device depending on the circumstances.
- All devices at distributed sites can be connected to the network with only one master module.
- One-touch connection using a dedicated cable for the network interface module and a digital signal converter (terminal module) or analog signal converter reduces the time for wiring.

Specifications

For digital signal converter connection (input)

| Item | | FA3-TH1M16XC |
|---------------------|----------|--------------------------------------------------|
| Input type | | Positive common/negative common shared type |
| No. of inputs | | 16 points |
| Input response time | OFF → ON | 0.1/0.2/1/1.5/5/10/20/70ms or less ^{*1} |
| | ON → OFF | 0.4/0.5/1/1.5/5/10/20/70ms or less ^{*1} |
| Current consumption | | 0.11A |
| Weight | | 160g |

*1: The module response time is not included.

For analog signal converter connection (input)

| Item | | FA3-AT1M8X |
|-------------------------------------------------------------|-------------------------------|----------------------------------|
| No. of analog input points | | 8 channels/module |
| I/O characteristics | Analog input range | 1 to 5V |
| | Digital output | 0 to 16000 |
| Accuracy (accuracy for the maximum digital output value) | Ambient temperature 0 to 55°C | ±0.3% (±48 digits) ^{*3} |
| | Ambient temperature 25±5°C | ±0.1% (±16 digits) ^{*3} |
| | Maximum resolution | 0.25mV |
| Maximum conversion speed | | 1ms/channel ^{*4} |
| Current consumption | | 0.14A |
| Weight | | 160g |

*3: The module's accuracy is not taken into account.

*4: The module response time is not included.

For digital signal converter connection (output)

| Item | | FA3-TH1M16Y | FA3-TH1M16YE |
|---------------------|----------|-----------------------------|--------------|
| Output type | | Sink type | Source type |
| No. of outputs | | 16 points | |
| Response time | OFF → ON | 0.5ms or less ^{*2} | |
| | ON → OFF | 1.5ms or less ^{*2} | |
| Current consumption | | 0.12A | |
| Weight | | 160g | |

*2: The module response time is not included.

For analog signal converter connection (output)

| Item | | FA3-AT1M8Y |
|-----------------------------|-------------------------------|-----------------------------|
| No. of analog output points | | 8 channels/module |
| I/O characteristics | Digital input value | 0 to 16000 |
| | Analog output range | 1 to 5V |
| Accuracy | Ambient temperature 0 to 55°C | ±0.3% (±12mV) ^{*5} |
| | Ambient temperature 25±5°C | ±0.1% (±4mV) ^{*5} |
| | Maximum resolution | 0.25mV |
| Maximum conversion speed | | 1ms/channel ^{*6} |
| Current consumption | | 0.14A |
| Weight | | 160g |

*5: The module's accuracy is not taken into account.

*6: The module response time is not included.

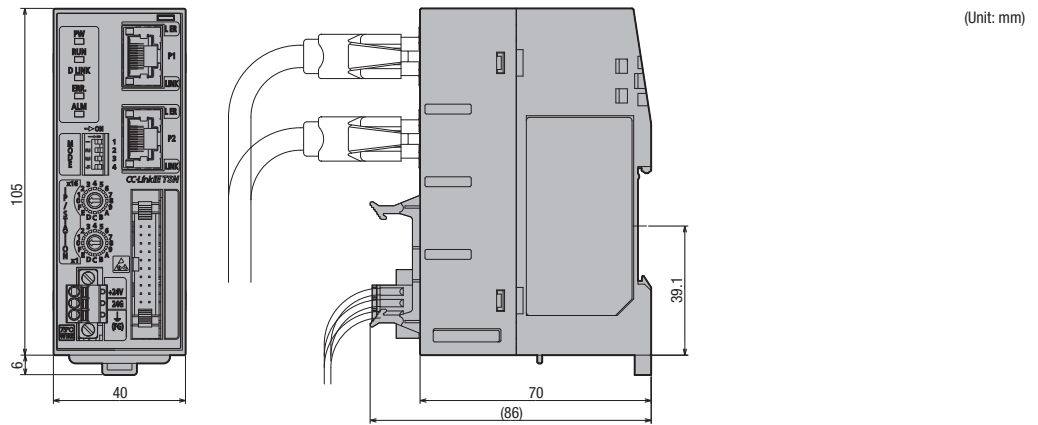
Common specifications

| Item | CC-Link IE TSN | CC-Link IE Field | CC-Link IE Field Basic | SLMP (standard Ethernet) | MODBUS/TCP | |
|-------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|---------------|----------------|
| Operating ambient temperature | 0 to 55°C | | | | | |
| Operating ambient humidity | 5 to 95%RH, non-condensing | | | | | |
| Network specifications | Communication speed | 1Gbps/100Mbps | 1Gbps | 100Mbps | 100Mbps | 100Mbps/10Mbps |
| | Station type | Remote station | Remote device station | Remote station | Server | Remote station |
| | Certification class | Certification class B | - | - | - | - |
| Topology | · Line/star topology · Mixture of line topology and star topology | · Line/star topology · Mixture of line topology and star topology · Ring topology | Star topology | Star topology | Star topology | |
| | External interface | Communication part: RJ45 connector Module power supply part: Two-piece spring clamp terminal block | | | | |
| Module installation | DIN rail installation or installation using the mounting bracket included with the module | | | | | |
| Communication cable | 1Gbps | Ethernet cable that satisfies the 1000BASE-T standard, Category 5e or higher (double shielded/STP) straight cable | | | | |
| | 100Mbps | Ethernet cable that satisfies the 100BASE-TX standard, Category 5 or higher (double shielded/STP) straight cable | | | | |
| | 10Mbps | Ethernet cable that satisfies the 10BASE-T standard, Category 3 or higher (shielded/STP) straight cable | | | | |
| Module power supply | Voltage | 24VDC (ripple ratio: within 5%) (allowable voltage range: 20.4 to 28.8VDC) | | | | |
| | Current | Refer to the individual specifications. ⁷⁾ | | | | |
| External dimensions | 105 (H) × 40 (W) × 70 (D) mm (not including the projections) | | | | | |
| Applicable standard | UL, CE, KC | | | | | |

⁷⁾ The digital signal converter or the analog signal converter requires a separate 24VDC power supply. For specifications, refer to the manuals for the modules used.

External dimensions

Common external dimensions for digital signal converter (terminal module) connection and analog signal converter connection





CC-Link IE TSN/Ethernet-compatible network interface module

| | | |
|------------------------------------------------------|--------------|------------------|
| Digital signal converter (terminal module) | FA3-TH1T16XC | FA3-TH1T16XC-01C |
| | FA3-TH1T16Y | FA3-TH1T16Y-01C |
| | FA3-TH1T16YE | FA3-TH1T16YE-01C |
| Analog signal converter | FA3-AT1T8X | FA3-AT1T8X-01C |
| | FA3-AT1T8Y | FA3-AT1T8Y-01C |

- Productivity and quality are improved by connecting a device such as a sensor connected to a digital signal converter (terminal module) or an analog signal converter via network to collect the operating information of the facility and control the device depending on the circumstances.
- All devices at distributed sites can be connected to the network with only one master module.
- One-touch connection using a dedicated cable for the network interface module and a digital signal converter (terminal module) or analog signal converter reduces the time for wiring.

Specifications

For digital signal converter connection (input)

| Item | | FA3-TH1T16XC |
|---------------------|----------|--------------------------------------------------|
| Input type | | Positive common/negative common shared type |
| No. of inputs | | 16 points |
| Input response time | OFF → ON | 0.1/0.2/1/1.5/5/10/20/70ms or less ^{*1} |
| | ON → OFF | 0.4/0.5/1/1.5/5/10/20/70ms or less ^{*1} |
| Current consumption | | 0.11A |
| Weight | | 160g |

*1: The module response time is not included.

For digital signal converter connection (output)

| Item | | FA3-TH1T16Y | FA3-TH1T16YE |
|---------------------|----------|-----------------------------|--------------|
| Output type | | Sink type | Source type |
| No. of outputs | | 16 points | |
| Response time | OFF → ON | 0.5ms or less ^{*2} | |
| | ON → OFF | 1.5ms or less ^{*2} | |
| Current consumption | | 0.12A | |
| Weight | | 160g | |

*2: The module response time is not included.

For analog signal converter connection (input)

| Item | | FA3-AT1T8X |
|-------------------------------------------------------------|-------------------------------|----------------------------------|
| No. of analog input points | | 8 channels/module |
| I/O characteristics | Analog input range | 1 to 5V |
| | Digital output | 0 to 16000 |
| Accuracy (accuracy for the maximum digital output value) | Ambient temperature 0 to 55°C | ±0.3% (±48 digits) ^{*3} |
| | Ambient temperature 25±5°C | ±0.1% (±16 digits) ^{*3} |
| | Maximum resolution | 0.25mV |
| Maximum conversion speed | | 1ms/channel ^{*4} |
| Current consumption | | 0.14A |
| Weight | | 160g |

*3: The module's accuracy is not taken into account.

*4: The module response time is not included.

For analog signal converter connection (output)

| Item | | FA3-AT1T8Y |
|-----------------------------|-------------------------------|-----------------------------|
| No. of analog output points | | 8 channels/module |
| I/O characteristics | Digital input value | 0 to 16000 |
| | Analog output range | 1 to 5V |
| Accuracy | Ambient temperature 0 to 55°C | ±0.3% (±12mV) ^{*5} |
| | Ambient temperature 25±5°C | ±0.1% (±4mV) ^{*5} |
| | Maximum resolution | 0.25mV |
| Maximum conversion speed | | 1ms/channel ^{*6} |
| Current consumption | | 0.14A |
| Weight | | 160g |

*5: The module's accuracy is not taken into account.

*6: The module response time is not included.

Common specifications

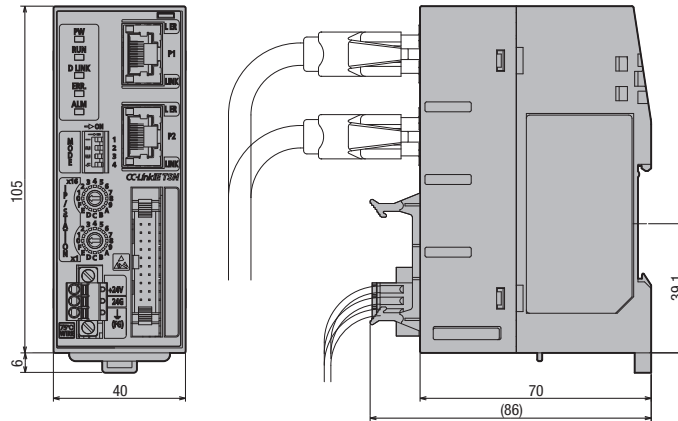
| Item | CC-Link IE TSN | CC-Link IE Field | CC-Link IE Field Basic | SLMP (standard Ethernet) | |
|-------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|---------------|
| Operating ambient temperature | 0 to 55°C | | | | |
| Operating ambient humidity | 5 to 95%RH, non-condensing | | | | |
| Network specifications | Communication speed | 1Gbps/100Mbps | 1Gbps | 100Mbps | 100Mbps |
| | Station type | Remote station | Remote device station | Remote station | Server |
| | Certification class | Certification class B | - | - | - |
| | Topology | · Line/star topology · Mixture of line topology and star topology | Star topology | Star topology | Star topology |
| External interface | Communication part | RJ45 connector | | | |
| | Module power supply part | Two-piece spring clamp terminal block | | | |
| Module installation | DIN rail installation or installation using the mounting bracket included with the module | | | | |
| Communication cable | 1Gbps | Ethernet cable that satisfies the 1000BASE-T standard, Category 5e or higher (double shielded/STP) straight cable | | | |
| | 100Mbps | Ethernet cable that satisfies the 100BASE-TX standard, Category 5 or higher (double shielded/STP) straight cable | | | |
| Module power supply | Voltage | 24VDC (ripple ratio: within 5%) (allowable voltage range: 20.4 to 28.8VDC) | | | |
| | Current | Refer to the individual specifications. ^{*7} | | | |
| External dimensions | 105 (H) × 40 (W) × 70 (D) mm (not including the projections) | | | | |
| Applicable standard | UL, CE, KC | | | | |

*7: The digital signal converter or the analog signal converter requires a separate 24VDC power supply. For specifications, refer to the manuals for the modules used.

External dimensions

Common external dimensions for digital signal converter (terminal module) connection and analog signal converter connection

(Unit: mm)





CC-Link-compatible network interface module

| | | |
|------------------------------------------------------|---------------------|-------------------------|
| Digital signal converter (terminal module) | FA3-TH1C16XC | FA3-TH1C16XC-01C |
| | FA3-TH1C16Y | FA3-TH1C16Y-01C |
| | FA3-TH1C16YE | FA3-TH1C16YE-01C |
| Analog signal converter | FA3-AT1C8X | FA3-AT1C8X-01C |
| | FA3-AT1C8Y | FA3-AT1C8Y-01C |

- Productivity and quality are improved by connecting a device such as a sensor connected to a digital signal converter (terminal module) or an analog signal converter via network to collect the operating information of the facility and control the device depending on the circumstances.
- All devices at distributed sites can be connected to the network with only one master module.
- One-touch connection using a dedicated cable for the network interface module and a digital signal converter (terminal module) or analog signal converter reduces the time for wiring.

Specifications

For digital signal converter connection (input)

| Item | | FA3-TH1C16XC |
|--------------------------|----------|------------------------------------------------------------|
| Input type | | Positive common/negative common shared type |
| CC-Link station type | | Remote I/O station |
| No. of occupied stations | | 32 points are assigned to a station. (16 points are used.) |
| No. of inputs | | 16 points |
| Input response time | OFF → ON | 1.5ms or less ^{*1} |
| | ON → OFF | |
| Current consumption | | 90mA |
| Weight | | 160g |

*1: The module response time is not included.

For digital signal converter connection (output)

| Item | | FA3-TH1T16Y | FA3-TH1T16YE |
|--------------------------|----------|------------------------------------------------------------|--------------|
| Output type | | Sink type | Source type |
| CC-Link station type | | Remote I/O station | |
| No. of occupied stations | | 32 points are assigned to a station. (16 points are used.) | |
| No. of outputs | | 16 points | |
| Response time | OFF → ON | 0.5ms or less ^{*2} | |
| | ON → OFF | 1.5ms or less ^{*2} | |
| Current consumption | | 100mA | 90mA |
| Weight | | 160g | |

*2: The module response time is not included.

For analog signal converter connection (input)

| Item | | FA3-AT1C8X |
|----------------------------------------------------------|-------------------------------|----------------------------------|
| No. of analog input points | | 8 channels/module |
| CC-Link station type | | Remote device station |
| CC-Link version | | Ver.1.10 |
| No. of occupied stations | | 2 |
| I/O characteristics | Analog input range | 1 to 5V |
| | Digital output | 0 to 16000 |
| Accuracy (accuracy for the maximum digital output value) | Ambient temperature 0 to 55°C | ±0.3% (±48 digits) ^{*3} |
| | Ambient temperature 25±5°C | ±0.1% (±16 digits) ^{*3} |
| | Maximum resolution | 0.25mV |
| Maximum conversion speed | | 1ms/channel ^{*4} |
| Current consumption | | 120mA |
| Weight | | 170g |

*3: The module's accuracy is not taken into account.

*4: The module response time is not included.

For analog signal converter connection (output)

| Item | | FA3-AT1C8Y |
|-----------------------------|-------------------------------|-----------------------------|
| No. of analog output points | | 8 channels/module |
| CC-Link station type | | Remote device station |
| CC-Link version | | Ver.1.10 |
| No. of occupied stations | | 2 |
| I/O characteristics | Digital input value | 0 to 16000 |
| | Analog output range | 1 to 5V |
| Accuracy | Ambient temperature 0 to 55°C | ±0.3% (±12mV) ^{*5} |
| | Ambient temperature 25±5°C | ±0.1% (±4mV) ^{*5} |
| | Maximum resolution | 0.25mV |
| Maximum conversion speed | | 1ms/channel ^{*6} |
| Current consumption | | 120mA |
| Weight | | 170g |

*5: The module's accuracy is not taken into account.

*6: The module response time is not included.

Common specifications

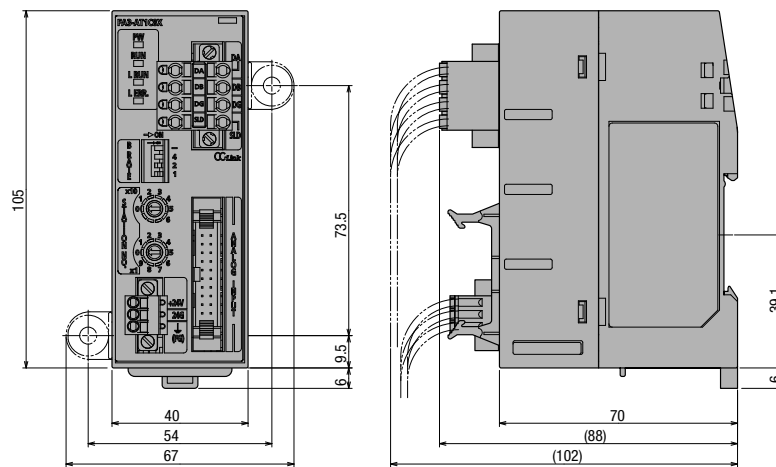
| Item | Specifications | |
|-------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Operating ambient temperature | 0 to 55°C | |
| Operating ambient humidity | 5 to 95%RH, non-condensing | |
| Network specifications | Communication speed | 10M/5M/2.5M/625k/156kbps |
| | Network topology | Bus topology (EIA RS485 compliant) |
| External interface | Communication part | Two-piece spring clamp terminal block |
| | Module power supply part | |
| Module installation | DIN rail installation or installation using the mounting bracket included with the module | |
| Module power supply | Voltage | 24VDC (ripple ratio: within 5%) (allowable voltage range: 20.4 to 28.8VDC) |
| | Current | Refer to the individual specifications. ⁷ |
| External dimensions | 105 (H) × 40 (W) × 70 (D) mm (not including the projections) | |
| Applicable standard | UL, CE, KC | |

⁷: The digital signal converter or the analog signal converter requires a separate 24VDC power supply. For specifications, refer to the manuals for the modules used.

External dimensions

Common external dimensions for digital signal converter (terminal module) connection and analog converter connection

(Unit: mm)



For programmable controllers, HMIs, and CNCs

Small-scale IoT (network interface modules)

Communication cables and cables for HMIs (GOTs)

Model list

Communication converter cables

| Product | Specifications | RS-232 side connector | RS-422 side connector | Cable length | Model | Refer to |
|-----------------------------------|-------------------------------------------------------------|-----------------------|------------------------------------|--------------|---------------|----------|
| RS-232 to RS-422 conversion cable | For converting RS-232 to RS-422 and extending wiring length | Mini DIN6P male | D-Sub25P female (millimeter screw) | 0.2m | FA-CNV2402CBL | P.329 |
| | | | | 0.5m | FA-CNV2405CBL | P.329 |

Communication cables

| Product | Specifications | Computer side connector | CPU (module) side connector | Cable length | Model | Refer to |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------|--------------|---------------|----------|
| RS-422 cable | For using with a communication conversion cable to extend cable length | D-Sub25P female (millimeter screw) | D-Sub25P male (millimeter screw metal fitting) | 20m | FA-CBL20R4 | P.330 |
| | | | | 30m | FA-CBL30R4 | P.330 |
| | | | | 50m | FA-CBL50R4 | P.330 |
| RS-232 cable | For connecting MELSEC-Q/L series CPU module and computer or HMI | D-Sub9P female (inch screw) | Mini DIN6P male | 3m | FA-CBLQC30R2 | P.330 |
| | | | | 5m | FA-CBLQC50R2 | P.330 |
| | | | | 8m | FA-CBLQC80R2 | P.330 |
| | | | | 15m | FA-CBLQC150R2 | P.330 |
| RS-232 cable | For connecting MELSEC-Q/L series CPU module and HMI (with D-Sub25P connector) or other devices | D-Sub25P male (millimeter screw) | Mini DIN6P male | 3m | FA-CBL25P6P30 | P.331 |
| | | | | 5m | FA-CBL25P6P50 | P.331 |
| RS-232 panel-mount extension cable (1.0m) | For connecting to the CPU module without opening the control panel | Mini DIN6P female | Mini DIN6P male | 1m | FA-CBL6S6P10 | P.331 |
| | | | | 3m | FA-CBL6S6P30 | P.331 |
| | | | | 5m | FA-CBL6S6P50 | P.331 |
| RS-232 cable | For connecting computer and computer link/serial communication module or intelligent communication module | D-Sub9P female (inch screw) | D-Sub9P male (millimeter screw) | 3m | FA-CBL9S9P30 | P.332 |
| | | | | 5m | FA-CBL9S9P50 | P.332 |
| | | | | 15m | FA-CBL9S9P150 | P.332 |
| USB cable | For connecting computer | Terminal A | Terminal B | 3m | FA-CBL30USB | P.332 |

Conversion cables

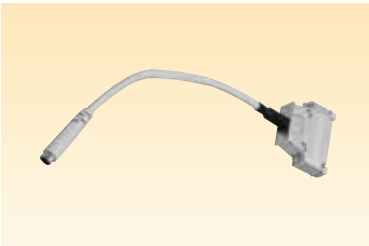
| Product | Specifications | Optical transducer side connector | Connected device side connector | Cable length | Model | Refer to |
|------------------|---------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------|--------------|---------------|----------|
| Conversion cable | For connecting optical transducer and computer | D-Sub25P female (millimeter screw metal fitting) | D-Sub9P female (inch screw) | 0.2m | FA-CBL25S9S | P.333 |
| | For connecting optical transducer and computer link/serial communication module | D-Sub25P female (millimeter screw metal fitting) | D-Sub9P male (millimeter screw) | 0.2m | FA-CBL25S9P | P.333 |
| | For connecting optical transducer and MELSEC-Q/L CPU module (mini DIN6P) | D-Sub25P female (millimeter screw metal fitting) | Mini DIN6P male | 0.2m | FA-CBL25S6P | P.334 |
| | For connecting optical transducer and the QJ71C24N (RS-485 screw terminal type) | D-Sub25P female (millimeter screw metal fitting) | M3 round solderless terminal | 0.2m | FA-CBL25S5T02 | P.334 |

Cables for HMIs (GOTs)

| Specifications | Cable length | Model | Refer to | |
|---------------------------------------------------------|--------------------------|-------|------------------|-------|
| RS-485 connector and junction terminal block with cable | For GT16 models | 0.5m | FA-LTBGTR4CBL05 | P.335 |
| | | 1m | FA-LTBGTR4CBL10 | P.335 |
| | | 2m | FA-LTBGTR4CBL20 | P.335 |
| | For GT27 and GT25 models | 0.5m | FA-LTBGT2R4CBL05 | P.336 |
| | | 1m | FA-LTBGT2R4CBL10 | P.336 |
| | | 2m | FA-LTBGT2R4CBL20 | P.336 |

Specifications

Communication converter



RS-232 to RS-422 conversion cable

FA-CNV24**CBL

- The communication cable used for a MELSEC-AnS/QnAS CPU module needs not be replaced, as it is converted to D-Sub25P connector (for RS-422).
- The wiring length can be extended.

Related products RS-422 cable P.330

Specifications

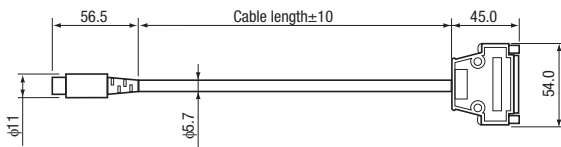
| Item | Specifications | |
|----------------------|-------------------------------------------------------------------------------|---------------|
| | FA-CNV2402CBL | FA-CNV2405CBL |
| Transmission speed | Maximum 115.2kbps | |
| Cable length | 0.2m | 0.5m |
| Cable outer diameter | 5.7mm | |
| Connector | RS-232 side: mini DINGP male, RS-422 side: D-Sub25P female (millimeter screw) | |
| Current consumption | Approx. 120mA (5VDC) | |
| Weight | Approx. 80g | Approx. 100g |

Note 1: When connecting a device whose power is supplied from the programmable controller, note the following:
 Using the FA-CBL**R4 to extend the connection distance may cause a voltage drop and disable proper operation of the device.
 Dropped voltage (V) = Current consumed by the connected device (A) × Conductor resistance of FA-CBL**R4 (Ω).
 (Conductor resistance of FA-CBL**R4 is 9.79Ω/km at 20°C)

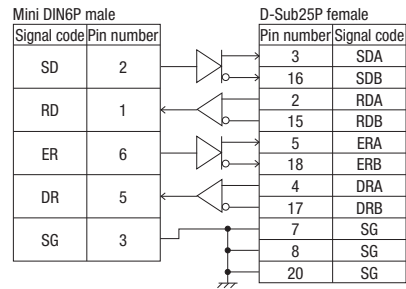
Note 2: Perform online connection/disconnection always on MELSEC-Q CPU module (mini DINGP connector) side.
 Note 3: To prevent disconnection of MELSEC-Q/L CPU module side connector, a Mitsubishi Electric Q6HLD-R2 holder (holder combination B+D) can be used.
 *: The holder cannot be used for all MELSEC-Q/L CPU modules. Refer to the manuals published by Mitsubishi Electric.

External dimensions

(Unit: mm)



Connection diagram



Communication cable



RS-422 cable
FA-CBLR4**

■ Using this cable with a communication conversion cable can extend the wiring length.

Related products Communication conversion cable P.329

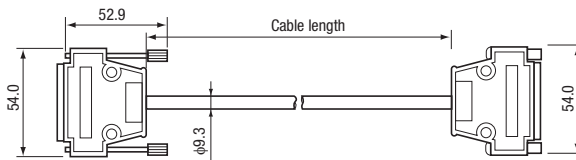
Specifications

| Item | Specifications |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| No. of cable cores | 8 for signals, and 2 for power supply |
| Nominal cross sectional area | 0.2mm ² for signals, and 2.0mm ² for power supply |
| Conductor resistance (20°C) | 113Ω/km or less for signals, and 9.79Ω/km or less for power supply |
| Cable outer diameter | 9.3mm |
| Connector | CPU module side: D-Sub25P male (millimeter screw metal fitting), computer side: D-Sub25P female (millimeter screw) |

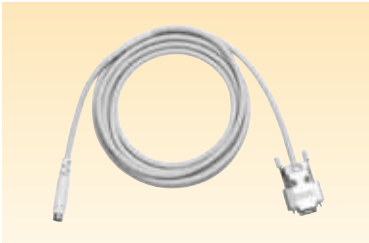
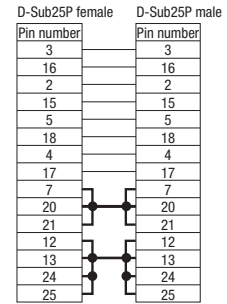
| Model | | FA-CBL**R4 |
|-------|--------------|---------------|
| ** | Cable length | Weight |
| 20 | 20m | Approx. 3.1kg |
| 30 | 30m | Approx. 4.4kg |
| 50 | 50m | Approx. 7.2kg |

External dimensions

(Unit: mm)



Connection diagram



RS-232 cable
FA-CBLQCR2**

■ This cable is used to connect a MELSEC-Q/L series CPU module and a computer or HMI.

Related products Panel-mount extension cable P.331

Specifications

| Item | Specifications |
|----------------------|------------------------------------------------------------------------------|
| Cable outer diameter | 5mm |
| Connector | CPU module side: mini DIN6P male, computer side: D-Sub9P female (inch screw) |

Note 1: The cable connector may not fit some computers. Use a commercially-available conversion connector (D9S-MF manufactured by SANWA SUPPLY INC. or an equivalent).

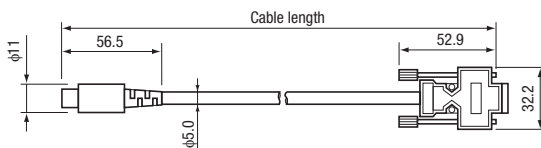
Note 2: To prevent disconnection of MELSEC-Q/L CPU module side connector, a Mitsubishi Electric Q6HLD-R2 holder (holder combination B+D) can be used.

*: The holder cannot be used for all MELSEC-Q/L CPU modules. Refer to the manuals published by Mitsubishi Electric.

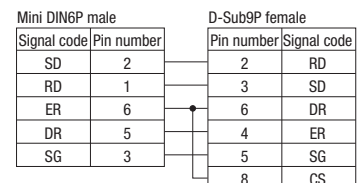
| Model | | FA-CBLQC**R2 |
|-------|--------------|--------------|
| ** | Cable length | Weight |
| 30 | 3m | Approx. 260g |
| 50 | 5m | Approx. 360g |
| 80 | 8m | Approx. 480g |
| 150 | 15m | Approx. 760g |

External dimensions

(Unit: mm)



Connection diagram





RS-232 cable
FA-CBL25P6P**

■ This cable is used to connect a MELSEC-Q/L series CPU module and an HMI (with D-Sub25P connector) or other devices.

Related products Panel-mount extension cable P.331

Specifications

| Item | Specifications |
|----------------------|-------------------------------------------------------------------------------------|
| Cable outer diameter | 5mm |
| Connector | CPU module side: mini DIN6P male Computer side: D-Sub25P male (millimeter screw) |

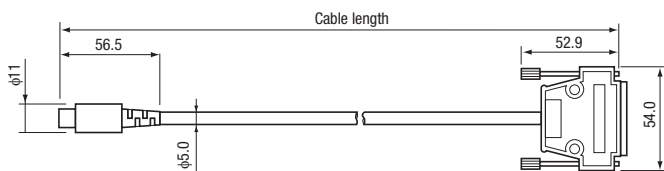
| Model | | FA-CBL25P6P** |
|-------|--------------|---------------|
| ** | Cable length | Weight |
| 30 | 3m | Approx. 280g |
| 50 | 5m | Approx. 370g |

Note 1: To prevent disconnection of MELSEC-Q/L CPU module side connector, a Mitsubishi Electric Q6HLD-R2 holder (holder combination B+D) can be used.

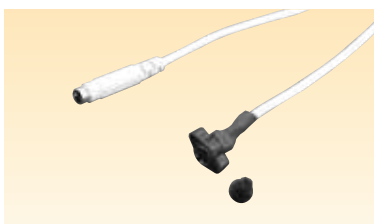
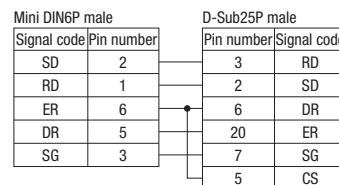
*: The holder cannot be used for all MELSEC-Q/L CPU modules. Refer to the manuals published by Mitsubishi Electric.

External dimensions

(Unit: mm)



Connection diagram



RS-232 panel-mount extension cable
FA-CBL6S6P**

■ This extension cable can connect a CPU module without opening control panel's door.

Related products RS-232 cable P.330 and P.331

Specifications

| Item | Specifications |
|----------------------|-----------------------------------------------------------------|
| Cable outer diameter | 5mm |
| Connector | CPU module side: mini DIN6P male, panel side: mini DIN6P female |

| Model | | FA-CBL6S6P** |
|-------|--------------|--------------|
| ** | Cable length | Weight |
| 10 | 1m | Approx. 70g |
| 30 | 3m | Approx. 150g |
| 50 | 5m | Approx. 240g |

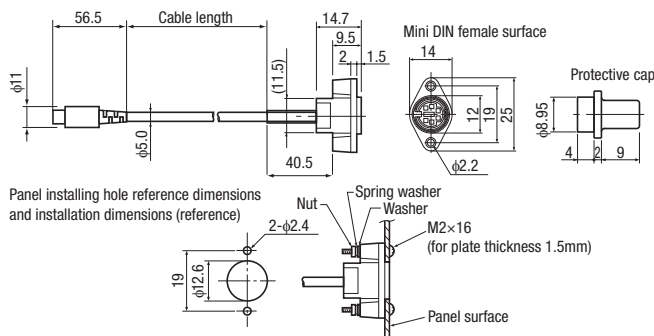
Note 1: The minimum bending radius of the cable on the panel-mount connector side is 50mm.

Note 2: To prevent disconnection of MELSEC-Q/L CPU module side connector, a Mitsubishi Electric Q6HLD-R2 holder (holder combination B+D) can be used.

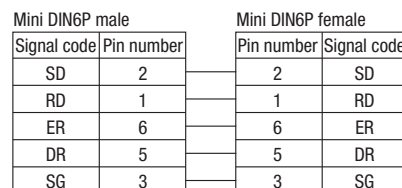
*: The holder cannot be used for all MELSEC-Q/L CPU modules. Refer to the manuals published by Mitsubishi Electric.

External dimensions

(Unit: mm)



Connection diagram





RS-232 cable FA-CBL9S9P**

■ This cable is used to connect a computer and a computer link/serial communication module or intelligent communication module.

Specifications

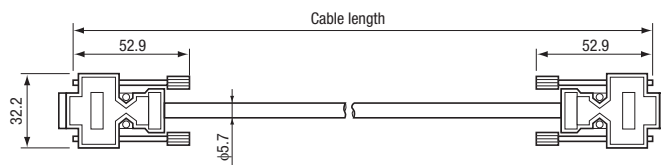
| Item | Specifications |
|----------------------|--------------------------------------------------------------------------------------------|
| Cable outer diameter | 5.7mm |
| Connector | Module side: D-Sub9P male (millimeter screw) Computer side: D-Sub9P female (inch screw) |

Note 1: The cable connector may not fit some computers.
Use a commercially-available conversion connector (D9S-MF manufactured by SANWA SUPPLY INC. or an equivalent).

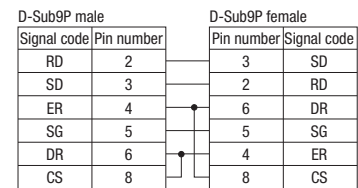
| Model | | FA-CBL9S9P** |
|-------|--------------|--------------|
| ** | Cable length | Weight |
| 30 | 3m | Approx. 320g |
| 50 | 5m | Approx. 440g |
| 150 | 15m | Approx. 950g |

External dimensions

(Unit: mm)



Connection diagram



USB cable FA-CBL30USB

■ This cable is used to connect a CPU module and a computer.

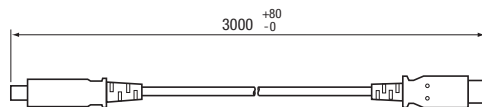
Specifications

| Item | Specifications |
|-----------|--------------------------------------------------------|
| Connector | Computer side: terminal A, CPU module side: terminal B |
| Weight | Approx. 180g |

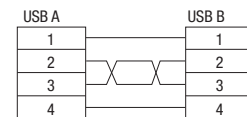
Note 1: How to install a USB driver is described in the Operating Manuals of Mitsubishi Electric GX Developer, GX Works2, and GX Works3.

External dimensions

(Unit: mm)



Connection diagram



Conversion cable



Conversion cable (D-Sub9P to D-Sub25P)

FA-CBL25S9S
FA-CBL25S9P

- This cable can reduce protrusion from the device when an optical transducer is installed.
- A D-Sub9P connector of a computer link or serial communication module can be converted to a D-Sub25P connector, which can be connected to an optical transducer.

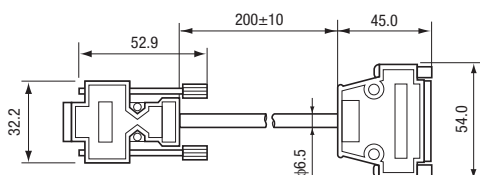
Specifications

| Item | Specifications | |
|----------------------|----------------------|---------------------------------------------|
| | FA-CBL25S9S (Note 1) | FA-CBL25S9P |
| Cable outer diameter | 6.5mm | |
| Connector | D-Sub25P | Female (millimeter screw metal fitting) |
| | D-Sub9P | Female (inch screw) Male (millimeter screw) |
| Weight | Approx. 100g | |

Note 1: The cable connector may not fit some computers. Use a commercially-available conversion connector (D9S-MF manufactured by SANWA SUPPLY INC. or an equivalent).

External dimensions

(Unit: mm)

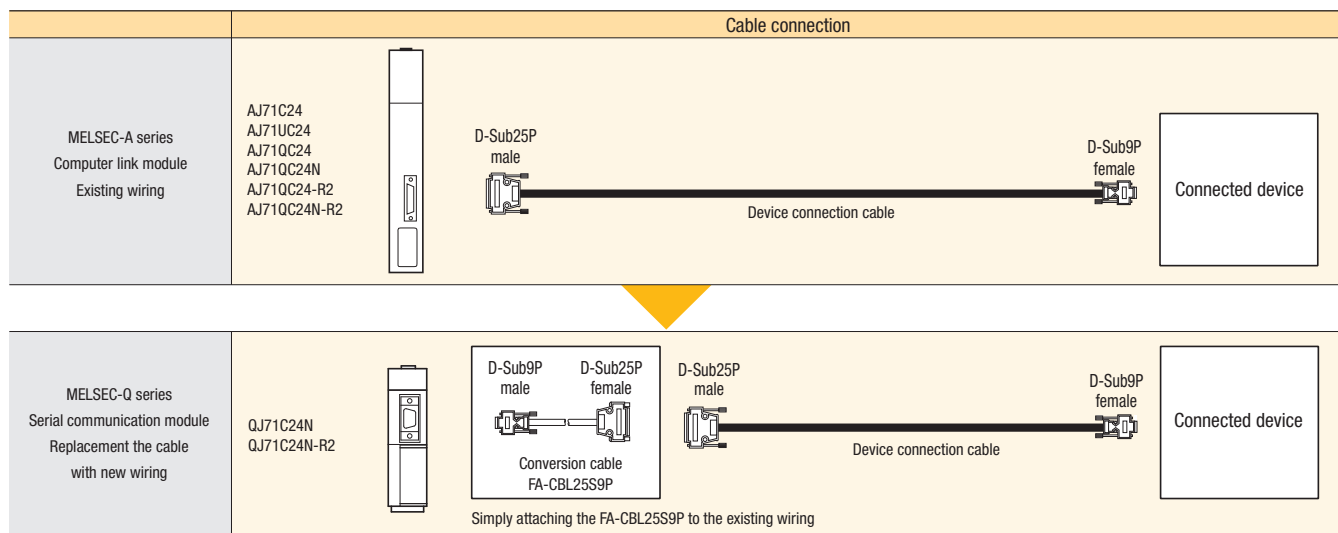


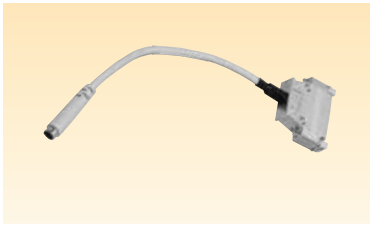
Connection diagram

| D-Sub9P female/Male | D-Sub25P female |
|---------------------|-----------------|
| Pin number 1 | Pin number 8 |
| 2 | 3 |
| 3 | 2 |
| 4 | 20 |
| 5 | 7 |
| 6 | 6 |
| 7 | 4 |
| 8 | 5 |
| 9 | 22 |
| FG | FG |

Replacement

The FA-CBL25S9P can be used for replacing the MELSEC-A series computer link module with the MELSEC-Q series serial communication module.





Conversion cable (Mini DIN6P to D-Sub25P)

FA-CBL25S6P

- A mini DIN6P connector of a MELSEC-Q/L CPU module can be converted to a D-Sub25P connector, which can be connected to an optical transducer.

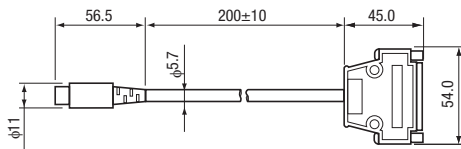
Specifications

| Item | Specifications |
|----------------------|------------------------------------------------------------------------------------|
| Cable outer diameter | 5.7mm |
| Connector | CPU module side: mini DIN6P male, D-Sub25P female (millimeter screw metal fitting) |
| Weight | Approx. 80g |

Note 1: To prevent disconnection of MELSEC-Q/L CPU module side connector, a Mitsubishi Electric Q6HLD-R2 holder (holder combination B+D) can be used.
*: The holder cannot be used for all MELSEC-Q CPU modules. Refer to the manuals published by Mitsubishi Electric.

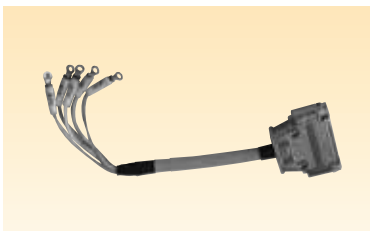
External dimensions

(Unit: mm)



Connection diagram

| Mini DIN6P male | D-Sub25P female |
|-----------------|-----------------|
| Pin number | Pin number |
| 1 | 3 |
| 2 | 2 |
| 3 | 7 |
| 4 | 11 |
| 5 | 5 |
| 6 | 20 |
| FG | FG |



Conversion cable (M3 round solderless terminal to D-Sub25P)

FA-CBL25S5T02

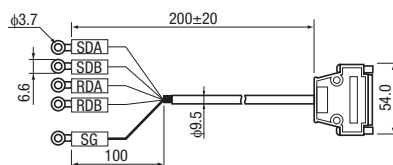
- RS-485 screw terminals for a QJ71C24N module can be converted to a D-Sub25P connector, which can be connected to an optical transducer.

Specifications

| Item | Specifications |
|----------------------|-----------------------------------------------------------------------------------------------------------------------|
| Cable outer diameter | 9.5mm |
| Connector | Module side: M3 round solderless terminals, optical transducer side: D-Sub25P female (millimeter screw metal fitting) |
| Weight | Approx. 90g |

External dimensions

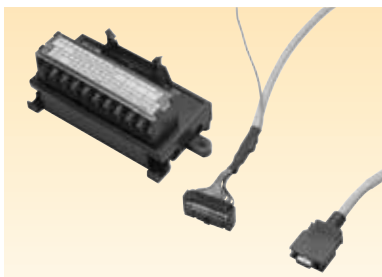
(Unit: mm)



Connection diagram

| Round solderless terminal | D-Sub25P female |
|---------------------------|-----------------|
| Signal name | Pin number |
| SDA | 3 |
| SDB | 16 |
| RDA | 2 |
| RDB | 15 |
| | 4 |
| | 5 |
| | 17 |
| | 18 |
| SG | 7 |
| | 20 |
| | 21 |

Cable for HMI (GOT)



**RS-485 connector for GT16 model and junction terminal block with cable
FA-LTBGTR4CBL****

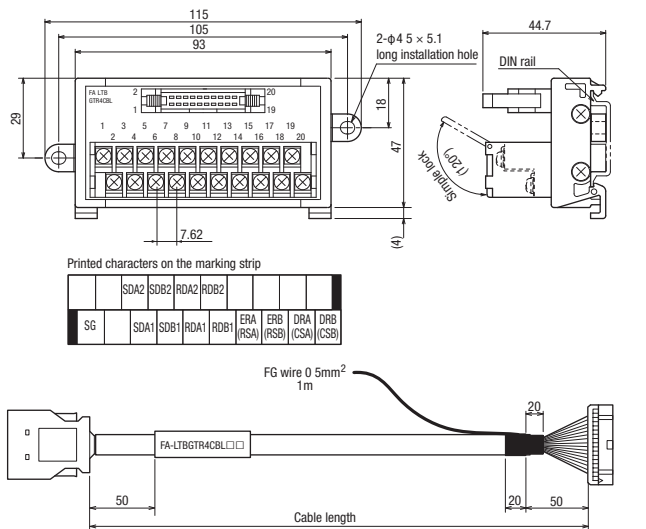
- RS-485 multidrop connection is inexpensively available for GT16 model.
- The marking strip can reduce wiring mistakes.
- Connection using a terminal block can reduce cost and time for wiring, as cables with a connector need not be fabricated.
- The product consists of a terminal block and a cable.

Product specifications

| Item | Model | | |
|------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------|
| | FA-LTBGTR4CBL05 | FA-LTBGTR4CBL10 | FA-LTBGTR4CBL20 |
| Cable length | 0.5m | 1.0m | 2.0m |
| Terminal block | Terminal screw | M3 screws, number of terminals: 20P, 7.62mm pitch | |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N·cm (5.2 to 7.6kgf·cm) | |
| Installation method | Screw | M4 × 0.7mm × 8mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground) | | |
| Weight | Approx. 180g | Approx. 200g | Approx. 240g |

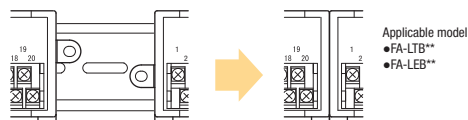
*1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

External dimensions



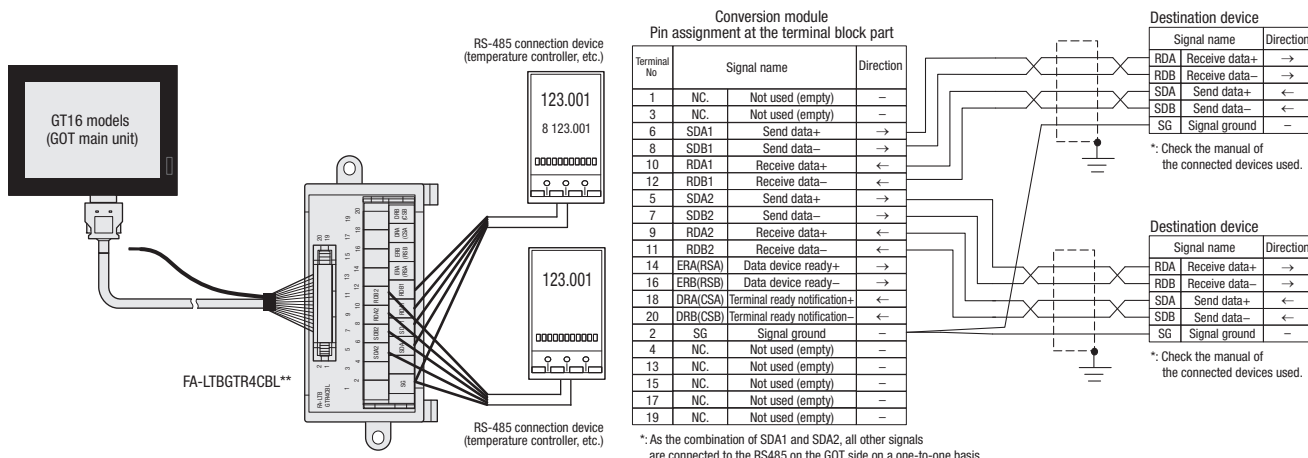
Notes for module installation

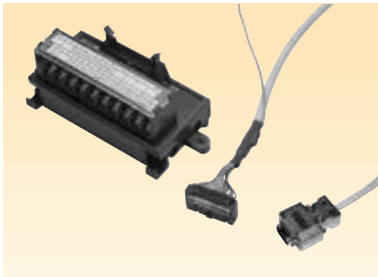
When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



Example of use

The following shows an example of a system and connection. For connection with each device, refer to the GOT1000 Series Connection Manual published by Mitsubishi Electric.





RS-485 connector for GT27 and GT25 models and junction terminal block with cable FA-LTBGT2R4CBL**

- RS-485 multidrop connection is inexpensively available for GT27 and GT25 models.
- The marking strip can reduce wiring mistakes.
- Connection using a terminal block can reduce cost and time for wiring, as cables with a connector need not be fabricated.
- The product consists of a terminal block and a cable.

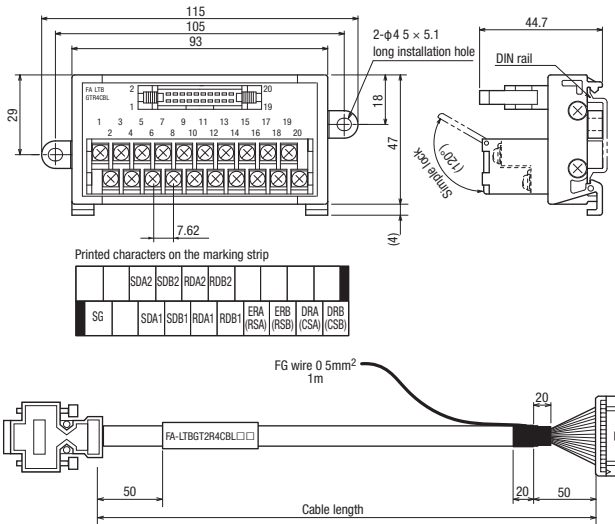
Product specifications

| Item | Model | | |
|------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------|
| | FA-LTBGT2R4CBL05 | FA-LTBGT2R4CBL10 | FA-LTBGT2R4CBL20 |
| Cable length | 0.5m | 1m | 2m |
| Terminal block | Terminal screw | M3 screws, number of terminals: 20P, 7.62mm pitch | |
| | Applicable wire, tightening torque | 0.3 to 2mm ² (with solderless terminal used), 50 to 75N·cm (5.2 to 7.6kgf·cm) | |
| Installation method | Screw | M4 × 0.7mm × 8mm or more, tightening torque: 78 to 118N·cm (8 to 12kgf·cm) | |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | |
| Withstand voltage, insulation resistance | 500VAC for 1 minute, 10MΩ or more (between all DC external terminals and ground) | | |
| Weight | Approx. 180g | Approx. 200g | Approx. 240g |

*1: When connecting cables to the module, push the cable connector until it is locked. Failure to do so may cause poor contact.

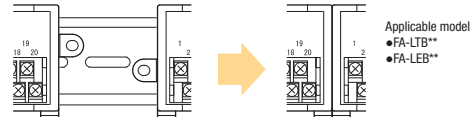
External dimensions

(Unit: mm)



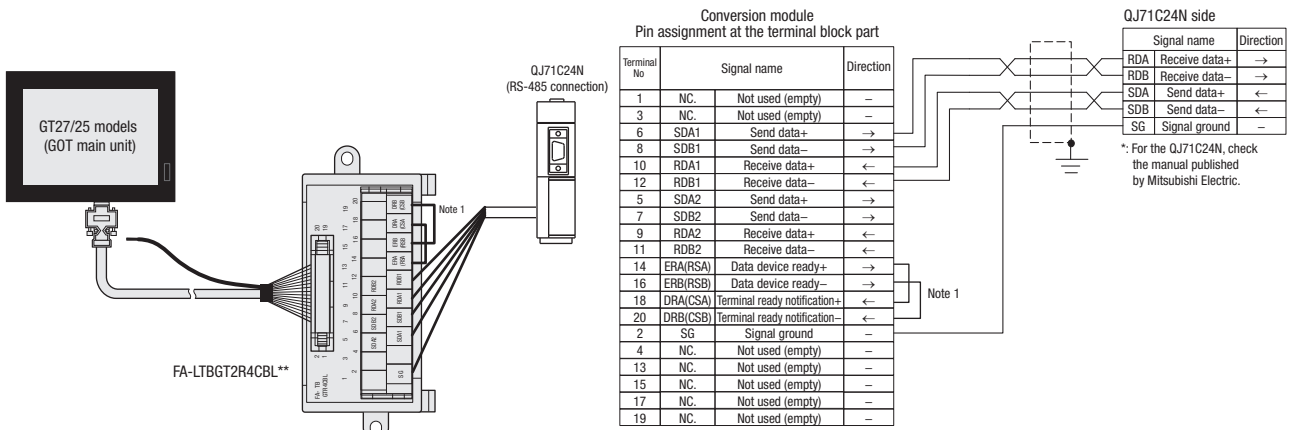
Notes for module installation

When the modules with the screw mounting holes on the both side are mounted on the DIN rail, they can be contacted each other as shown below.



Example of use

The following shows a connection example of the QJ71C24N (RS-485) using the junction terminal block. For connection with each device, refer to the GOT2000 Series Connection Manual published by Mitsubishi Electric.



Note 1: Connect between No.14 and No.18 terminals and between No.16 and No.20 terminals.

Time and wire saving devices

For servo systems

For servo systems

INDEX

Selection chart

| | |
|----------------------------------------------------------------------|-------|
| Junction terminal blocks/connection cables for servo amplifiers | P.340 |
| Junction terminal blocks/connection cables for Simple Motion modules | P.340 |
| Connection cables between positioning module and servo amplifier | P.341 |

Servo amplifier junction terminal block

| | |
|----------------|-------|
| Features | P.342 |
| Model list | P.348 |
| Specifications | P.349 |

Selection chart

Junction terminal blocks/connection cables for servo amplifiers

MELSERVO-J5/J4 series

| Supported model | Servo amplifier junction terminal block | | No. of control axes | Connection cable | |
|-----------------|-------------------------------------------------------------|-----------------------------------------------------------------|---------------------|------------------|---------------------------------------|
| J5 series | MR-J5-G(-RJ) | FLS/RLS/DOG signal-specialized network amplifier terminal block | DG2SV2TB | 1 | DG4SV2CB**(-P01) DG4SV2CB**H(-P01) |
| | | Network amplifier junction terminal block | DG2SV3TB | 1 | DG4SV2CB** |
| | MR-J5-G | Junction terminal block for servo motors with brakes | DG2BK1TB | 1 | DG4SV2CB** |
| | | | DG2BK1TB-D | | |
| | MR-J5W2-G | FLS/RLS/DOG signal-specialized network amplifier terminal block | DG2SV2TB2 | 2 | DG4SV3CB**(-P01) DG4SV3CB**H(-P01) |
| | MR-J5W3-G | | DG2SV2TB3 | 3 | |
| MR-J5-A(-RJ) | General-purpose interface amplifier junction terminal block | DG2SV1TB | 1 | DG4SV1CB** | |
| J4 series | MR-J4-B(-RJ) | FLS/RLS/DOG signal-specialized network amplifier terminal block | DG2SV2TB | 1 | DG4SV2CB**(-P01) DG4SV2CB**H(-P01) |
| | | Junction terminal block for servo motors with brakes | DG2BK1TB | 1 | DG4SV2CB** |
| | | | DG2BK1TB-D | | |
| | Network amplifier junction terminal block | DG2SV3TB | 1 | DG4SV2CB** | |
| | MR-J4W2-B MR-J4W2-0303B6 | FLS/RLS/DOG signal-specialized network amplifier terminal block | DG2SV2TB2 | 2 | DG4SV3CB**(-P01) DG4SV3CB**H(-P01) |
| | MR-J4W3-B | | DG2SV2TB3 | 3 | |
| | MR-J4-A(-RJ) MR-J4-03A6(-RJ) MR-J4- _DU_A(-RJ) | General-purpose interface amplifier junction terminal block | DG2SV1TB | 1 | DG4SV1CB** |
| | MR-J4-GF(-RJ) | FLS/RLS/DOG signal-specialized network amplifier terminal block | DG2SV2TB | 1 | DG4SV2CB**(-P01) DG4SV2CB**H(-P01) |
| | | Network amplifier junction terminal block | DG2SV3TB | 1 | DG4SV2CB** |
| | MR-J4-GF | Junction terminal block for servo motors with brakes | DG2BK1TB | 1 | DG4SV2CB** |
| DG2BK1TB-D | | | | | |

Junction terminal blocks/connection cables for Simple Motion modules

MELSEC iQ-R series <Simple Motion module>

| Positioning module model | Connection cable between positioning module and junction terminal block | Junction terminal block for network positioning module | Connection cable between junction terminal block and servo amplifier | Servo amplifier or other devices |
|-------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------|
| RD77MS2 RD77MS4 RD77MS8 RD77MS16 | FA-CBL**Q7 | FA-LTBQ75M | — | MR-J4-B series |

MELSEC-Q series <Simple Motion module/network positioning module>

| Positioning module model | Connection cable between positioning module and junction terminal block | Junction terminal block for network positioning module | Connection cable between junction terminal block and servo amplifier | Servo amplifier or other devices |
|-------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------|----------------------------------|
| QD77MS2 QD77MS4 QD77MS16 | FA-CBL**Q7 | FA-LTBQ75M | — | MR-J4-B series |
| QD75M1 QD75M2 QD75M4 QD75MH1 QD75MH2 QD75MH4 | | | | |

Connection cables between positioning module and servo amplifier

MELSEC iQ-R series <Positioning module>

| Positioning module model | Connection cable between positioning module and servo amplifier | Servo amplifier or other devices |
|--------------------------|-----------------------------------------------------------------|----------------------------------|
| RD75D2 RD75D4 | FA-CBLQ75M2J3 | MR-J5-A series MR-J4-A series |
| RD75P2 RD75P4 | FA-CBLQ75PM2J3 | |

MELSEC-Q series <Positioning module>

| Positioning module model | Connection cable between positioning module and servo amplifier | Servo amplifier or other devices |
|----------------------------------------|-----------------------------------------------------------------|----------------------------------|
| QD75D1 QD75D1N | FA-CBLQ75M2J3-1 | MR-J5-A series MR-J4-A series |
| QD75D2 QD75D2N QD75D4 QD75D4N | FA-CBLQ75M2J3 FA-CBLQ75M2J3-P | |
| QD75P1 QD75P1N | FA-CBLQ75PM2J3-1 | |
| QD75P2 QD75P2N QD75P4 QD75P4N | FA-CBLQ75PM2J3 | |

MELSEC-L series <Positioning module>

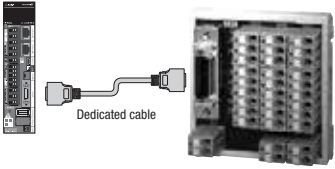
| Positioning module model | Connection cable between positioning module and servo amplifier | Servo amplifier or other devices |
|--------------------------|-----------------------------------------------------------------|----------------------------------|
| LD75D1 | FA-CBLQ75M2J3-1 | MR-J5-A series MR-J4-A series |
| LD75P1 | FA-CBLQ75PM2J3-1 | |
| LD75D2 LD75D4 | FA-CBLQ75M2J3 FA-CBLQ75M2J3-P | |
| LD75P2 LD75P4 | FA-CBLQ75PM2J3 | |

Servo amplifier junction terminal block

A servo amplifier relays the signal in the connection method that matches an application.

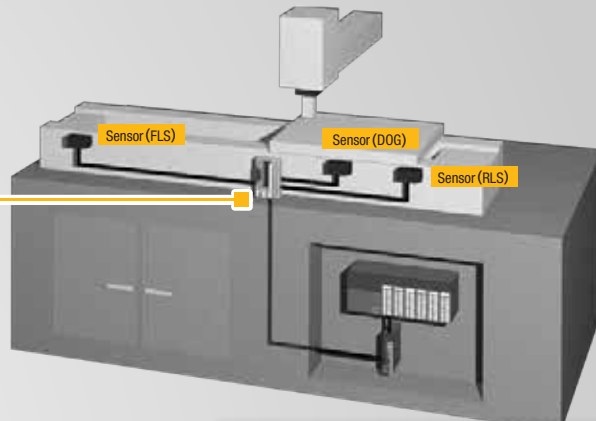
Easy to wire stroke limit and proximity dog signals

- MR-J5-G
- MR-J5W-G
- MR-J4-B
- MR-J4-GF
- MR-J4W-B




Dedicated cable

FLS/RLS/DOG signal-specialized network amplifier terminal block



Easy to wire external signals thanks to spring clamp terminals

- MR-J5-A
- MR-J4-A
- SSONET-compatible hydraulic control unit

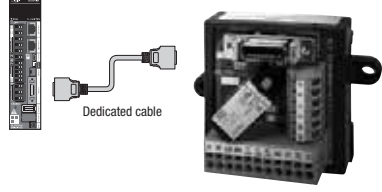


Dedicated cable

General-purpose interface amplifier junction terminal block

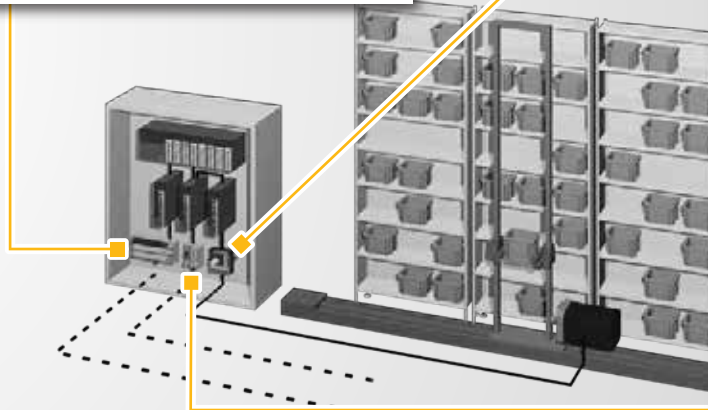
Saving space of brake circuits for servo motors with brakes

- MR-J5-G
- MR-J4-B
- MR-J4-GF



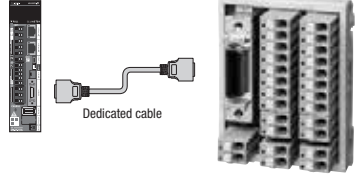
Dedicated cable

Junction terminal block for servo motors with brakes



Easy to wire external signals thanks to spring clamp terminals

- MR-J5-G
- MR-J4-B
- MR-J4-GF



Dedicated cable

Network amplifier junction terminal block

P.343 Simple wiring
A servo amplifier and a junction terminal block can be easily connected using the dedicated cable. Using a dedicated cable reduces wiring time and ensures reliable connections.

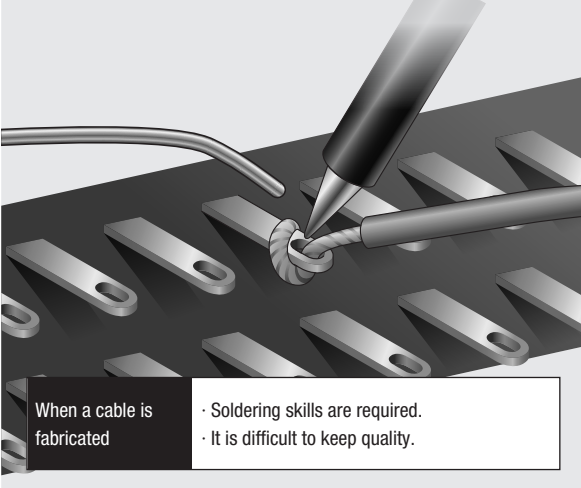
P.343 Power supply branching with spring clamp terminals
A transition wiring for the power supply is supported by using the common terminal for branch wiring.

P.344 Optimal selection according to the application
Optimal selection of a junction terminal block according to the application realizes space-saving, wiring work saving, and productivity improvement.

Simple wiring

A servo amplifier and a junction terminal block can be easily wired using the dedicated cable. Using a dedicated cable reduces the work to fabricate cables with connectors and ensures stable connections.

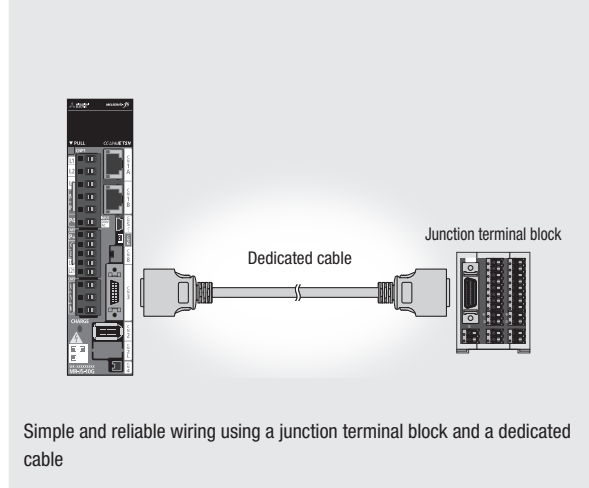
Before



When a cable is fabricated

- Soldering skills are required.
- It is difficult to keep quality.

After

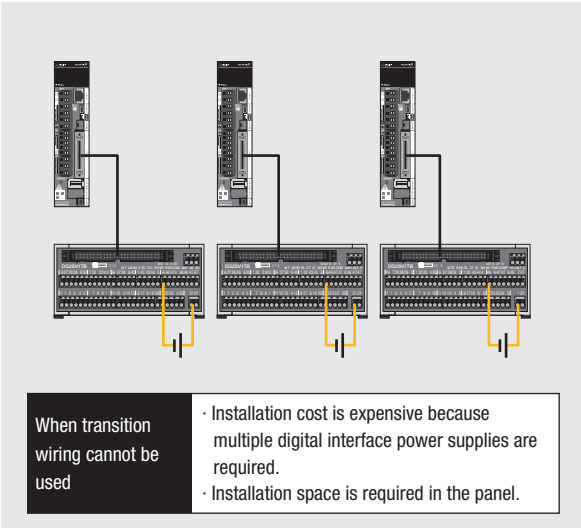


Simple and reliable wiring using a junction terminal block and a dedicated cable

Power supply branching with spring clamp terminals

A power supply terminal for branch wiring is provided. The transition wiring of the power supply for digital interface is available when connected with a servo amplifier so that the number of power supplies for digital interface is minimized and the installation space and cost are saved.

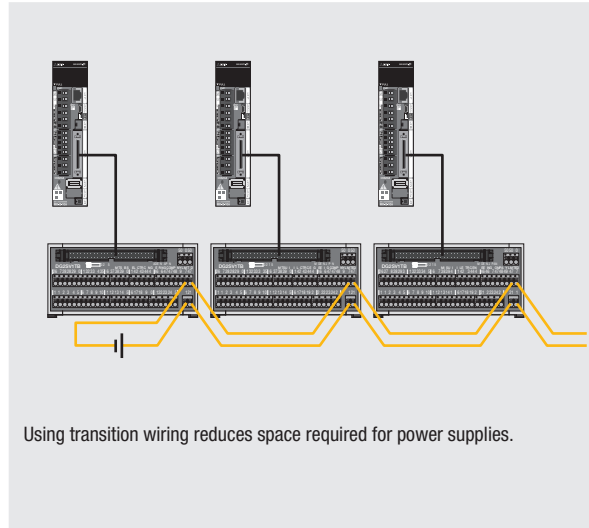
Before



When transition wiring cannot be used

- Installation cost is expensive because multiple digital interface power supplies are required.
- Installation space is required in the panel.

After



Using transition wiring reduces space required for power supplies.

Optimal selection according to the application

Optimal selection of a junction terminal block according to the application realizes space-saving, wiring work saving, and productivity improvement.

FLS/RLS/DOG signal-specialized network amplifier terminal block

| | |
|---------|----------|
| MR-J5-G | MR-J5W-G |
| MR-J4-B | MR-J4-GF |
| | MR-J4W-B |

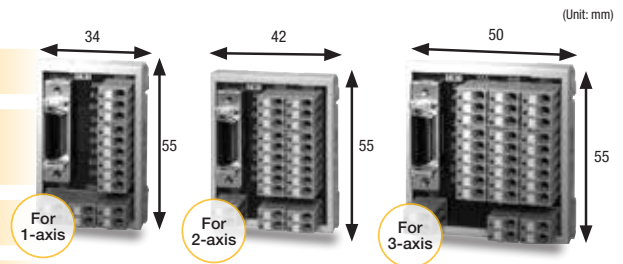
DG2SV2TB/ DG2SV2TB2/ DG2SV2TB3
(for 1-axis) (for 2-axis) (for 3-axis)

Easy to wire stroke limit and proximity dog signals

Power supply branch is available up to 6A of the terminal power supply by using transition wiring.

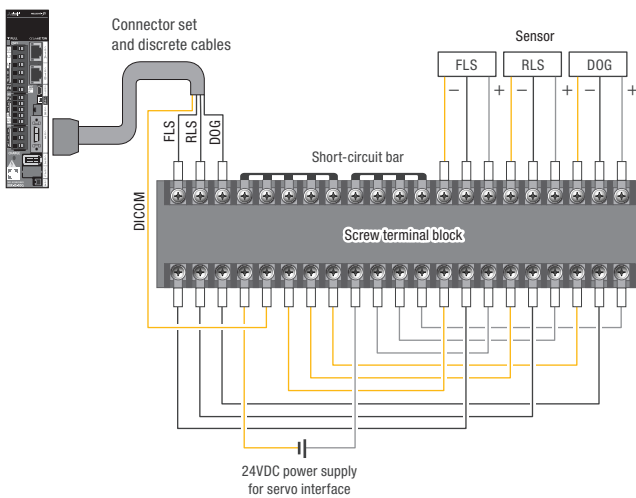
Signal name markings prevent erroneous wiring.

Using a long length, high flex life cable allows installation in the mechanical section or on movable parts.



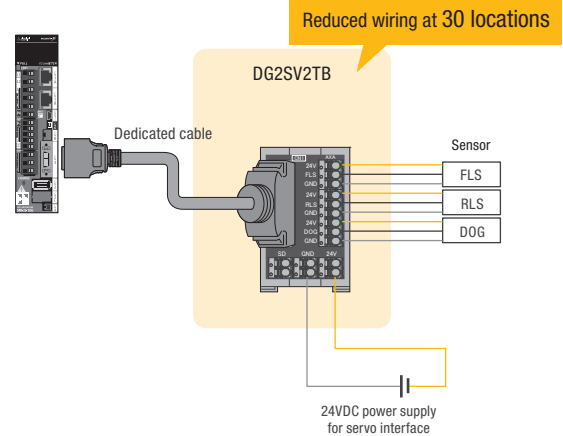
Before

Screw tightening for 42 terminals

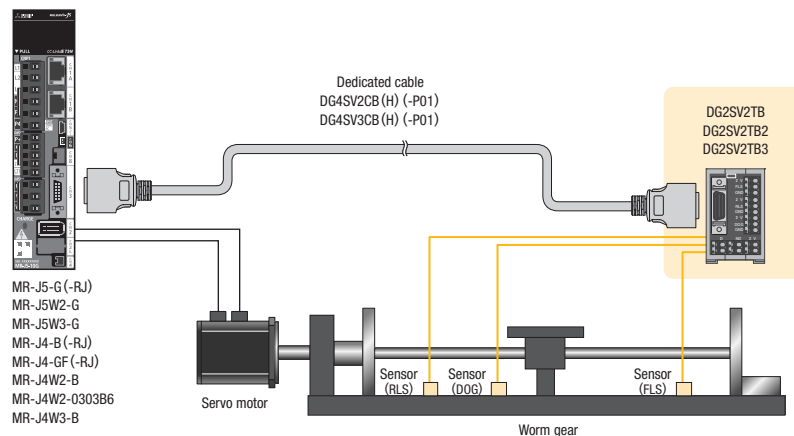


After

Push-in connection for 12 terminals (Retightening not required)



Connection diagram

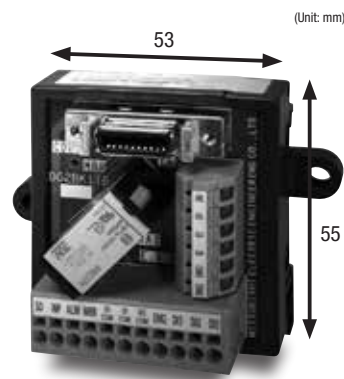


Junction terminal block for servo motors with brakes

| | |
|---------|----------|
| MR-J5-G | MR-J5-B |
| MR-J4-B | MR-J4-GF |

DG2BK1TB(-D) *: (-D): Models for DIN rail installation

- A brake sequence circuit (Mitsubishi Electric recommended) is built in.
- Space savings of up to 50% compared to the conventional system!
- Signal name markings prevent erroneous wiring.

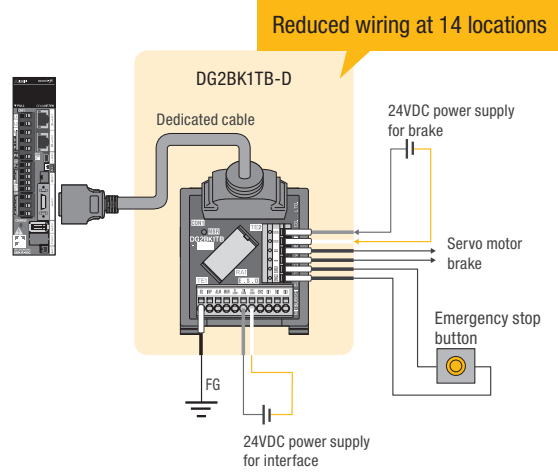
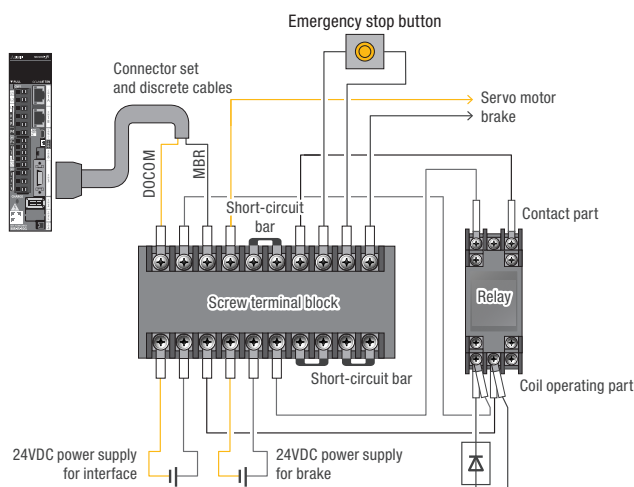


Before

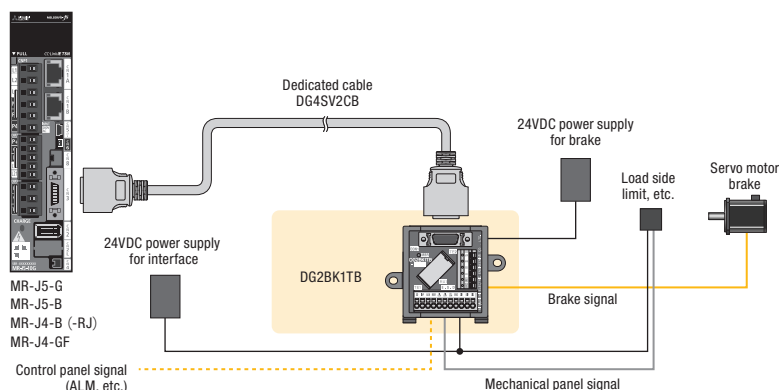
After

Screw tightening for 24 terminals

Push-in connection for 10 terminals (Retightening not required)



Connection diagram



Network amplifier junction terminal block

MR-J5-G

MR-J4-B

MR-J4-GF

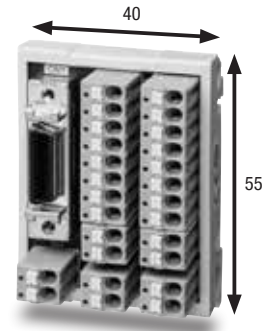
DG2SV3TB

(Unit: mm)

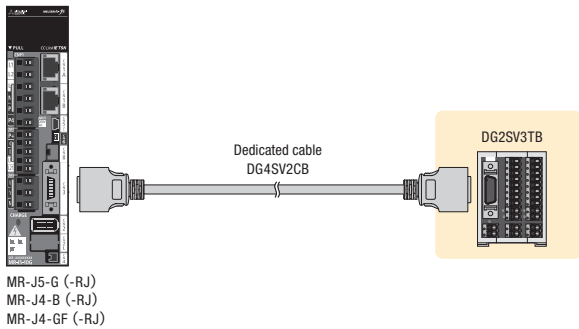
Simple wiring for a cable with the dedicated connector

Easy to wire thanks to spring clamp terminals

Power supply branch is available up to 6A of the terminal power supply by using transition wiring.



Connection diagram



General-purpose interface amplifier junction terminal block

MR-J5-A

MR-J4-A

SSCNET-compatible hydraulic control unit

DG2SV1TB

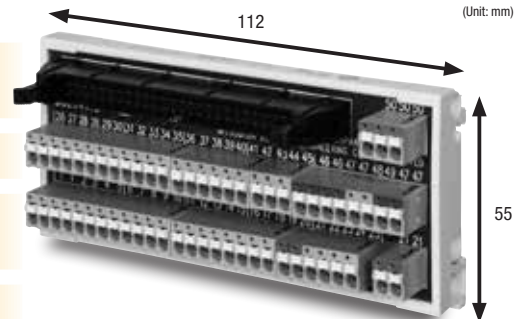
(Unit: mm)

The installation space is reduced by about 40% compared to that of the screw type.

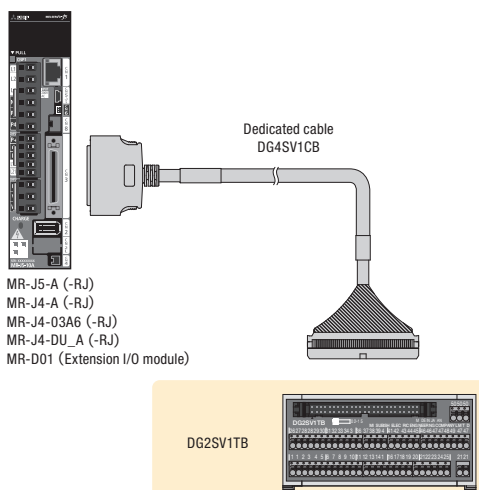
Easy to wire thanks to spring clamp terminals

Power supply branch is available up to four terminal power supplies by using transition wiring.

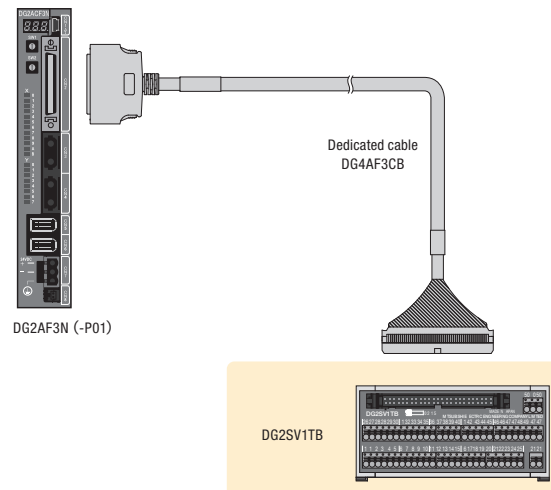
Our SSCNET-compatible hydraulic control unit is also available.



Connection diagram (general-purpose interface amplifier)



Connection diagram (SSCNET-compatible hydraulic control unit)

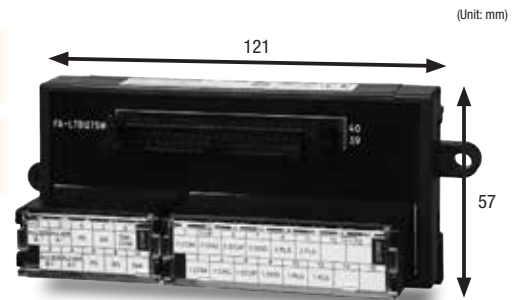


Junction terminal block for network positioning module

FA-LTBQ75M

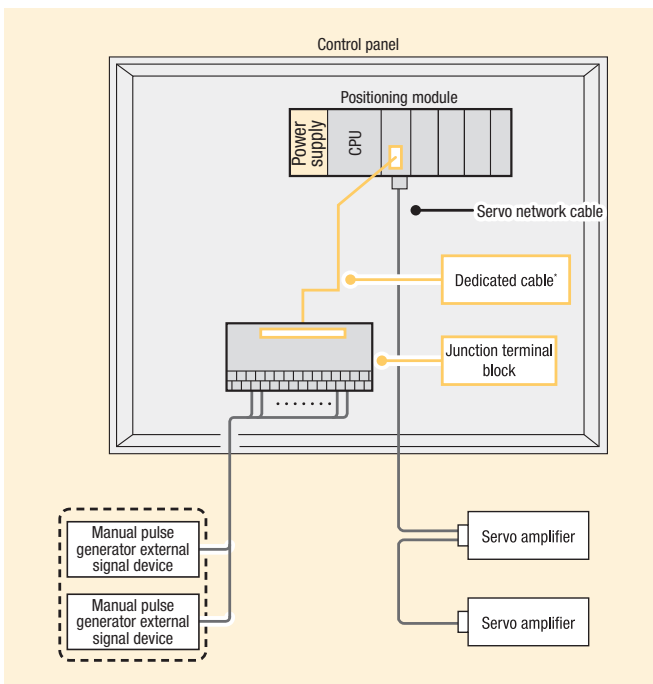
Simple wiring with the positioning module using the dedicated cable

Positioning signals are converted into terminal block outputs, enabling easy wiring of devices.



Junction terminal block/dedicated cable for MELSEC series network positioning module

Refer to P.205 and P.214.



*: Connection cable between the positioning module and the junction terminal block for network positioning module

● FA-CBL**Q7

Model list

FLS/RLS/DOG signal-specialized network amplifier terminal blocks

| No. of points | Connection method | No. of control axes | Model | Refer to |
|---------------|------------------------------------------------------|---------------------|-----------|----------|
| 15 | Dedicated for FLS/RLS/DOG signals, spring clamp type | 1 | DG2SV2TB | P.349 |
| 24 | Dedicated for FLS/RLS/DOG signals, spring clamp type | 2 | DG2SV2TB2 | P.349 |
| 33 | Dedicated for FLS/RLS/DOG signals, spring clamp type | 3 | DG2SV2TB3 | P.349 |

Junction terminal blocks for servo motors with brakes

| No. of points | Connection method | No. of control axes | Model | Refer to |
|---------------|------------------------------------------------------------------------------------------------------|---------------------|------------|----------|
| 15 | For servo motors with brakes, spring clamp type, sink/source shared type | 1 | DG2BK1TB | P.354 |
| | For servo motors with brakes, spring clamp type, sink/source shared type, DIN rail installation only | | DG2BK1TB-D | P.354 |

Network amplifier junction terminal block

| No. of points | Connection method | No. of control axes | Model | Refer to |
|---------------|-------------------------------------------------------------------------------|---------------------|----------|----------|
| 26 | For network-based servo amplifier, spring clamp type, sink/source shared type | 1 | DG2SV3TB | P.356 |

General-purpose interface amplifier junction terminal block

| No. of points | Connection method | No. of control axes | Model | Refer to |
|---------------|-------------------------------------------------------------------------------------------|---------------------|----------|----------|
| 60 | For general-purpose interface servo amplifier, spring clamp type, sink/source shared type | 1 | DG2SV1TB | P.358 |

Junction terminal block for network-connectable positioning modules

| No. of points | Connection method | No. of control axes | Model | Refer to |
|---------------|------------------------------------------|-------------------------------------------------|------------|----------|
| 40 | For positioning modules, screw (M3) type | 2 (Use 2 terminal blocks to control 4 axes.) | FA-LTBQ75M | P.205 |

Connection cables

| Connected to | Specifications | No. of control axes | Cable length | Model | |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------|------------------|-----------------|------------------|
| Servo amplifier | For network amplifiers | 1 | 0.5m | DG4SV2CB05 | |
| | | | 1m | DG4SV2CB10 | |
| | | | 5m | DG4SV2CB50 | |
| | For network amplifiers, long bending life | 1 | 5m | DG4SV2CB50H | |
| | | | 10m | DG4SV2CB100H | |
| | | | 0.5m | DG4SV3CB05 | |
| | For FLS/RLS/DOG signal terminal blocks, for sink | 2-axis/3-axis servo amplifier | 1m | DG4SV3CB10 | |
| | | | 5m | DG4SV3CB50 | |
| | | | 0.5m | DG4SV2CB05-P01 | |
| | For FLS/RLS/DOG signal terminal blocks, for source | 1 | 1m | DG4SV2CB10-P01 | |
| | | | 5m | DG4SV2CB50-P01 | |
| | | | 0.5m | DG4SV3CB05-P01 | |
| | | 2-axis/3-axis servo amplifier | 1m | DG4SV3CB10-P01 | |
| | | | 5m | DG4SV3CB50-P01 | |
| 0.5m | | | DG4SV3CB50H | | |
| For FLS/RLS/DOG signal terminal blocks, for sink, long bending life | 2-axis/3-axis servo amplifier | 10m | DG4SV3CB100H | | |
| | | 5m | DG4SV2CB50H-P01 | | |
| For FLS/RLS/DOG signal terminal blocks, for source, long bending life | 1 | 10m | DG4SV2CB100H-P01 | | |
| | | 5m | DG4SV3CB50H-P01 | | |
| | | 10m | DG4SV3CB100H-P01 | | |
| For general-purpose interface amplifiers | 1 | 0.5m | DG4SV1CB05 | | |
| | | 1m | DG4SV1CB10 | | |
| SSCNET-compatible hydraulic control unit | For the junction terminal block for SSCNET-compatible hydraulic control units | 1 | 0.5m | DG4AF3CB05 | |
| | | | 1m | DG4AF3CB10 | |
| Positioning module | For the junction terminal block between positioning modules and network-connectable positioning modules | 2 | 0.5m | FA-CBL05Q7 | |
| | | | 1m | FA-CBL10Q7 | |
| | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J3 | |
| | | | 2m | FA-CBLQ75M2J3-P | |
| | For connecting positioning modules and servo amplifiers (MR-J5-A/J4-A series) | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75M2J3-1 |
| | | | | 2m | FA-CBLQ75PM2J3-1 |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75PM2J3 |

Specifications



FLS/RLS/DOG signal-specialized network amplifier terminal block

DG2SV2TB DG2SV2TB2 DG2SV2TB3

- Easy to wire stroke limit and proximity dog signals
- The terminal blocks are designed specifically for the FLS, RLS, and DOG signals, downsizing the installation area.
- The sensor lead wires can be directly connected to the terminal block installed near a mechanical section.
- Using a spring clamp terminal block removes the need for tightening screws periodically, thus problems such as loose screws and the loosening of screws due to vibration are eliminated.
- When using multiple axes, transition wiring between terminal blocks for interface power supplies is available 6A maximum.
- Using a long length, high flex life cable allows installation in the mechanical section or on movable parts.

Product specifications

(1) General specifications

| Item | | Specifications |
|----------------------|-----------|-----------------------------------------------------------------------------------|
| Ambient temperature | Operation | 0°C to 55°C (non-freezing) |
| | Storage | -20°C to 65°C (non-freezing) |
| Ambient humidity | Operation | 5%RH to 90%RH (non-condensing) |
| | Storage | |
| Ambience | | Indoors (no direct sunlight), no corrosive gas, inflammable gas, oil mist or dust |
| Altitude | | 2000m or less above sea level |
| Vibration resistance | | 5.9m/s ² , 10Hz to 55Hz (X, Y, and Z directions) |

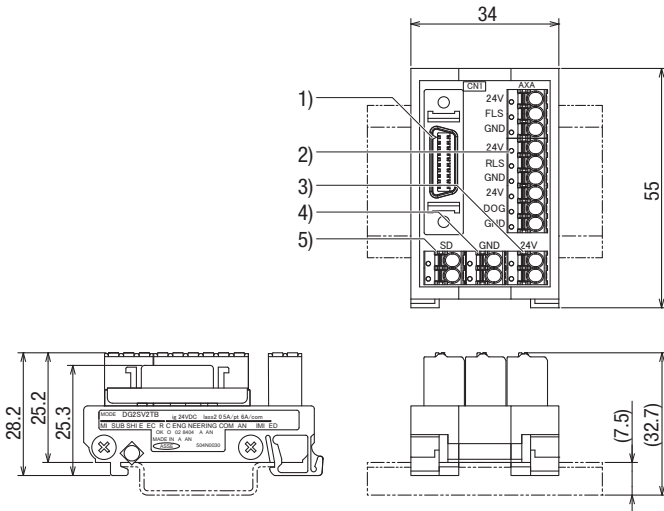
(2) Performance specifications

| Item | | Performance specifications | | |
|----------------------------------|-------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------------------|
| | | DG2SV2TB | DG2SV2TB2 | DG2SV2TB3 |
| Connected servo amplifier | | Mitsubishi Electric 1-axis servo amplifier MR-J5-G(-RJ), MR-J4-B(-RJ), MR-J4-GF(-RJ) | Mitsubishi Electric 2-axis servo amplifier MR-J5W2-G, MR-J4W2-B, MR-J4W2-0303B6 | Mitsubishi Electric 3-axis servo amplifier MR-J5W3-G, MR-J4W3-B |
| Connection cable | Sink wire | Standard | DG4SV2CB** | DG4SV3CB** |
| | | Long bending life | DG4SV2CB**H | DG4SV3CB**H |
| | Source wire | Standard | DG4SV2CB**-P01 | DG4SV3CB**-P01 |
| | | Long bending life | DG4SV2CB**H-P01 | DG4SV3CB**H-P01 |
| External power supply | | Voltage: 24VDC±10% | | |
| | | Maximum operating current: Signal: 0.5A, Common line: 6A | | |
| Terminal block section | | No. of terminals: 15 points, number of cables per terminal: 1 | 24 points, number of cables per terminal: 1 | 33 points, number of cables per terminal: 1 |
| | | Applicable wire: 0.2 to 1.5mm ² (24 to 16AWG), sheath: φ2.8mm or less | | |
| | | Wire strip length: 8 to 9mm (Maximum sheath outside diameter: φ2.8mm or less) | | |
| Compliance with global standards | | UL standard: UL61800-5-1 | | |
| Module installation | | DIN rail: Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) | | |
| Weight | | Approx. 35g | Approx. 40g | Approx. 45g |

External dimensions

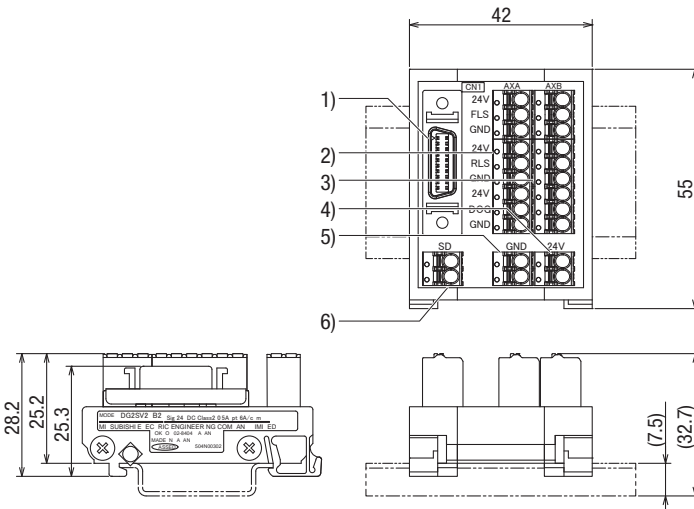
■ DG2SV2TB

Unit: mm



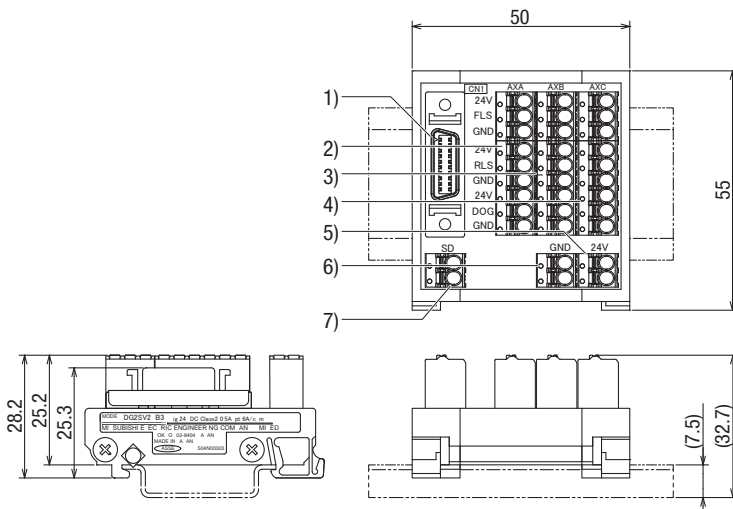
| No. | Name | Function |
|-----|--------------------------------------------------------|-----------------------------------------------------------|
| 1) | Servo amplifier interface connector (CN1) | Connector for CN3 of a servo amplifier |
| 2) | Terminal block for the FLS, RLS, and DOG signals (AXA) | Terminal block for the FLS, RLS, and DOG sensor signals |
| 3) | 24VDC power supply terminal block (24V) | 24VDC power supply |
| 4) | GND terminal block (GND) | GND |
| 5) | SD terminal block (SD) | For connecting the external conductor of a shielded cable |

■ DG2SV2TB2



| No. | Name | Function |
|-----|----------------------------------------------------------|--------------------------------------------------------------------|
| 1) | Servo amplifier interface connector (CN1) | Connector for CN3 of a servo amplifier |
| 2) | A-axis connector for the FLS, RLS, and DOG signals (AXA) | Terminal block for the FLS, RLS, and DOG sensor signals for A-axis |
| 3) | B-axis connector for the FLS, RLS, and DOG signals (AXB) | Terminal block for the FLS, RLS, and DOG sensor signals for B-axis |
| 4) | 24VDC power supply terminal block (24V) | 24VDC power supply |
| 5) | GND terminal block (GND) | GND |
| 6) | SD terminal block (SD) | For connecting the external conductor of a shielded cable |

■ DG2SV2TB3



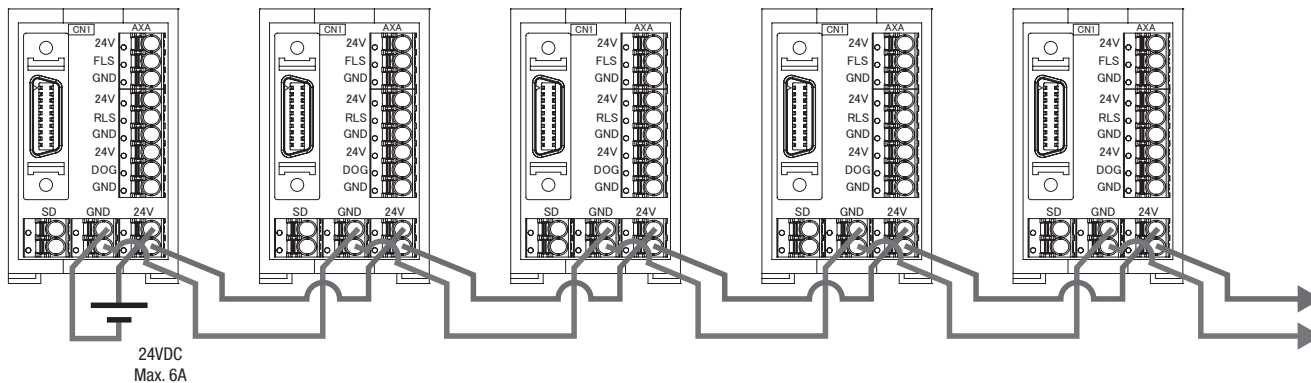
| No. | Name | Function |
|-----|----------------------------------------------------------|--------------------------------------------------------------------|
| 1) | Servo amplifier interface connector (CN1) | Connector for CN3 of a servo amplifier |
| 2) | A-axis connector for the FLS, RLS, and DOG signals (AXA) | Terminal block for the FLS, RLS, and DOG sensor signals for A-axis |
| 3) | B-axis connector for the FLS, RLS, and DOG signals (AXB) | Terminal block for the FLS, RLS, and DOG sensor signals for B-axis |
| 4) | C-axis connector for the FLS, RLS, and DOG signals (AXC) | Terminal block for the FLS, RLS, and DOG sensor signals for C-axis |
| 5) | 24VDC power supply terminal block (24V) | 24VDC power supply |
| 6) | GND terminal block (GND) | GND |
| 7) | SD terminal block (SD) | For connecting the external conductor of a shielded cable |

Connection diagram

■ DG2SV2TB

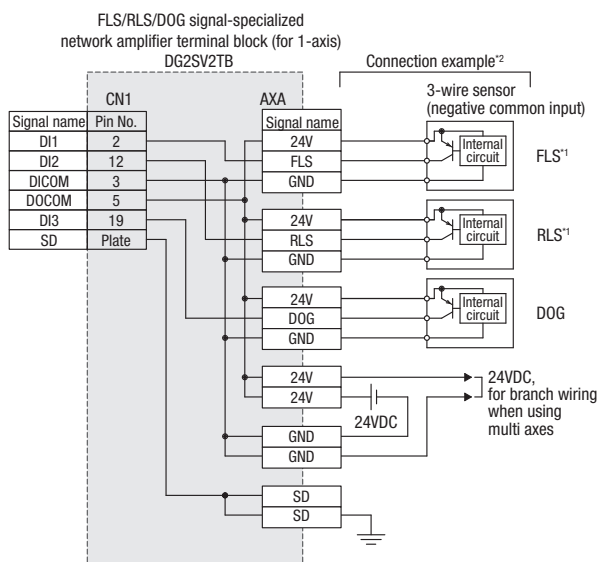
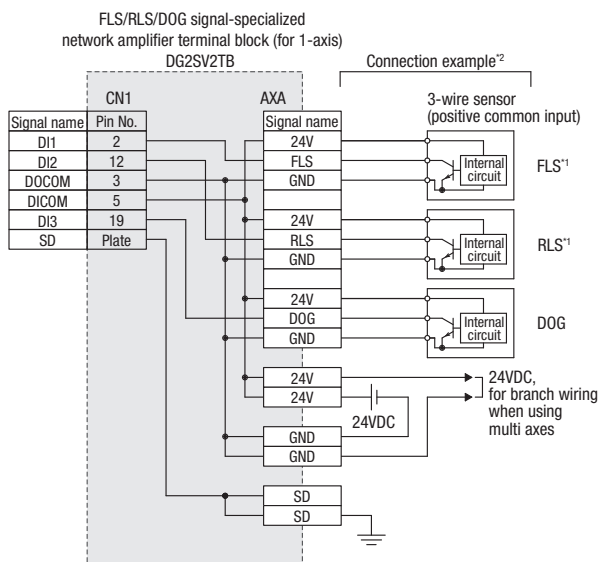
Branch wiring for digital interface power supply

Up to 6A of servo amplifier digital interface power supply is possible to be branched.
 Target servo amplifier: MR-J5-G(-RJ), MR-J4-B(-RJ), MR-J4-GF(-RJ)



■ For sink input wiring

■ For source input wiring



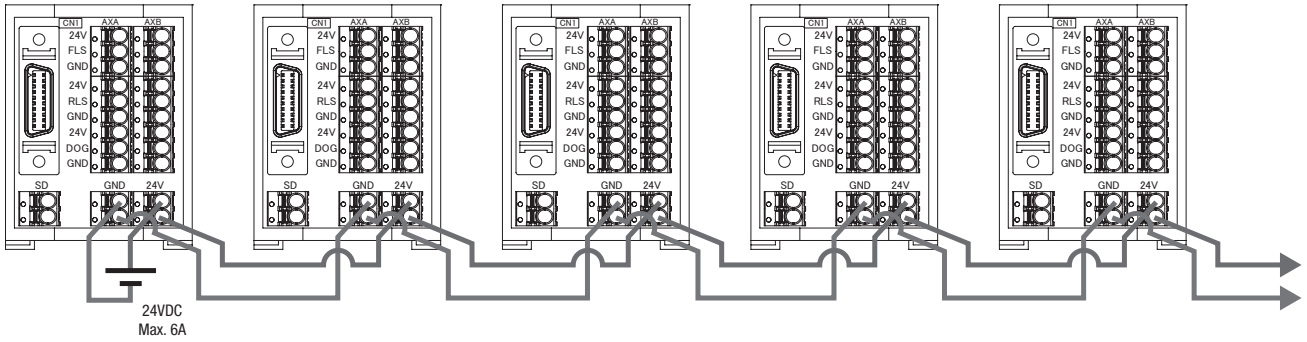
*1: When connecting MR-J4- GF(-RJ), use signals as follows: FLS as LSP and RLS as LSN.
 *2: Always refer to each servo amplifier instruction manual and servo motor instruction manual to carry out wiring.

■ DG2SV2TB2

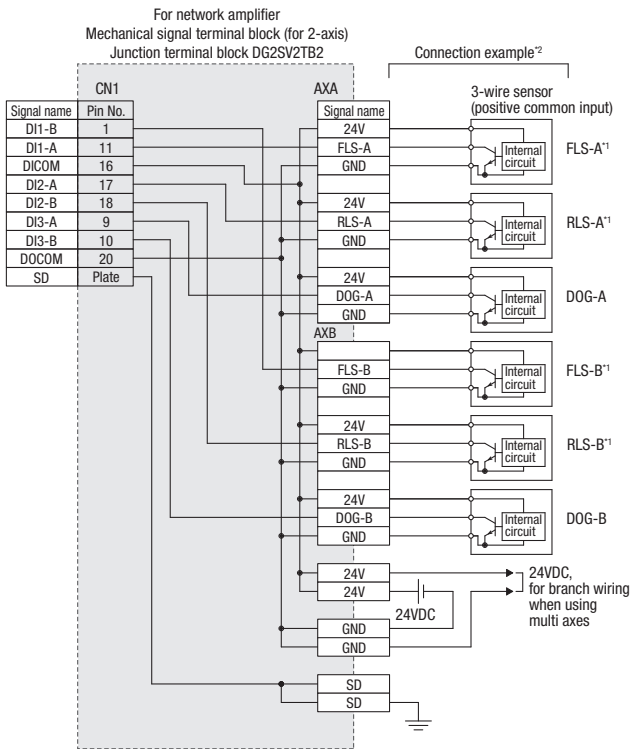
Branch wiring for digital interface power supply

Up to 6A of servo amplifier digital interface power supply is possible to be branched.

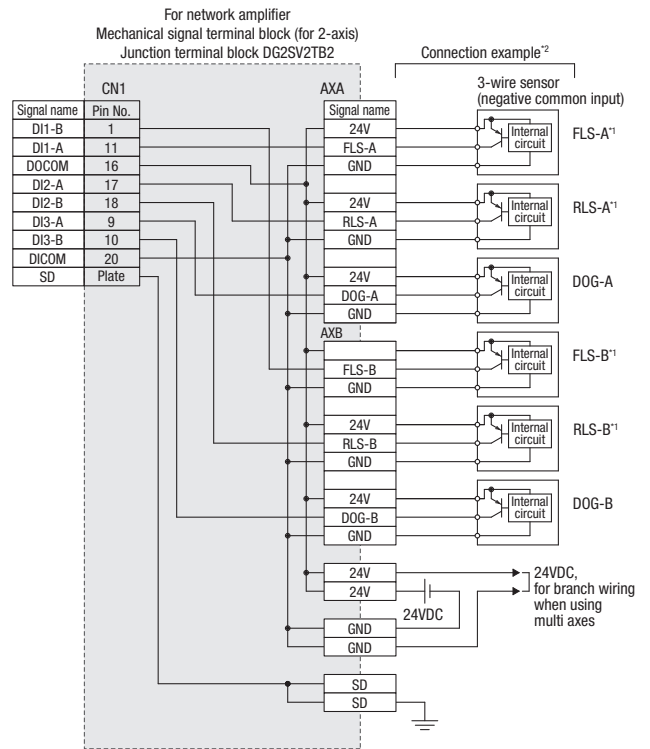
Target servo amplifier: MR-J5W2-G, MR-J4W2-B, MR-J4W2-0303B6



■ For sink input wiring



■ For source input wiring



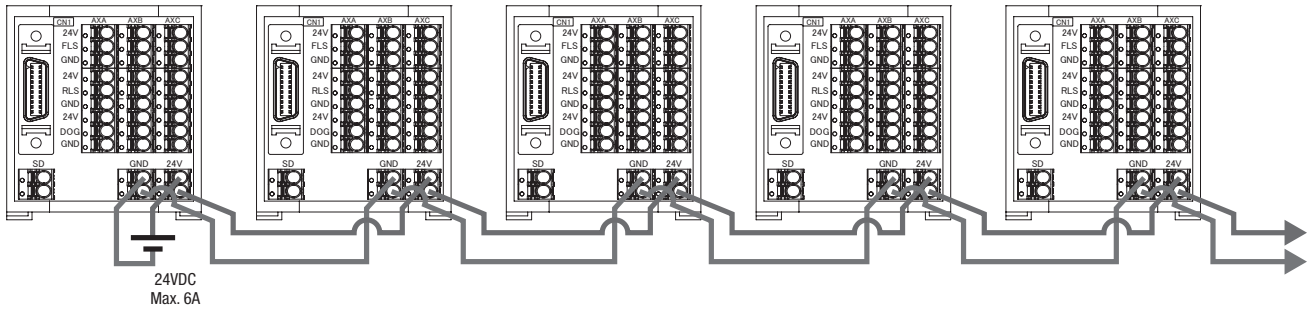
*1: When connecting MR-J4-GF-(RJ), use signals as follows: FLS as LSP and RLS as LSN.

*2: Always refer to each servo amplifier instruction manual and servo motor instruction manual to carry out wiring.

■ DG2SV2TB3

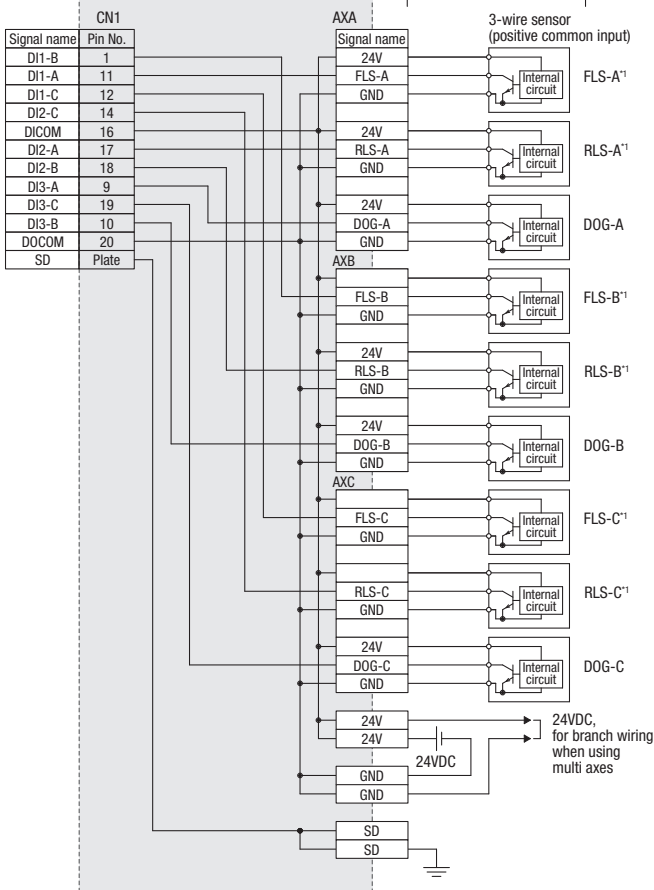
Branch wiring for digital interface power supply

Up to 6A of servo amplifier digital interface power supply is possible to be branched.
 Target servo amplifier: MR-J5W3-G, MR-J4W3-B



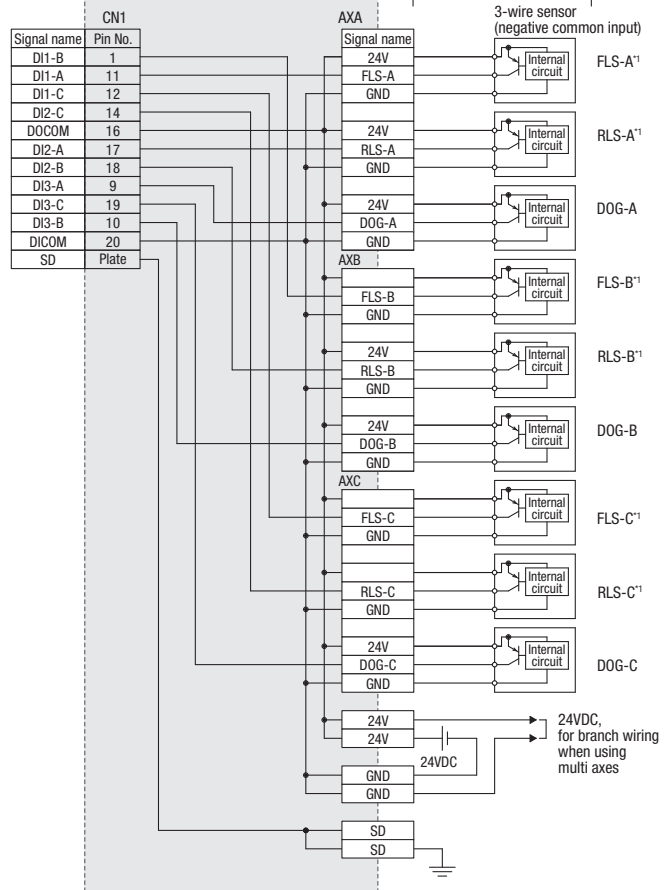
■ For sink input wiring

For network amplifier
 Mechanical signal terminal block (for 3-axis)
 Junction terminal block DG2SV2TB3



■ For source input wiring

For network amplifier
 Mechanical signal terminal block (for 3-axis)
 Junction terminal block DG2SV2TB3



*1: When connecting MR-J4- _GF (-RJ), use signals as follows: FLS as LSP and RLS as LSN.

*2: Always refer to each servo amplifier instruction manual and servo motor instruction manual to carry out wiring.



Junction terminal block for servo motors with brakes

DG2BK1TB DG2BK1TB-D

- Easily build a brake sequence circuit recommended for the Mitsubishi Electric servo amplifier.
- The junction terminal block for servo motors with brakes reduces the brake sequence circuit installation area. Compared to conventional units, the installation area is 33.5% smaller for screw mounting and 53% smaller for DIN rail mounting.
- When mounting multiple junction terminal blocks onto a DIN rail, neighboring junction terminal blocks can be mounted side-by-side.
- Fewer wires in the control panel leads to the reduction of wiring work.
- The operation status of brake contact output relays can be checked with the LED display.
- Using a spring clamp terminal block removes the need for tightening screws periodically, thus problems such as loose screws and the loosening of screws due to vibration are eliminated.

Product specifications

(1) General specifications

| Item | | Specifications |
|----------------------|-----------|-----------------------------------------------------------------------------------|
| Ambient temperature | Operation | 0°C to 55°C (non-freezing) |
| | Storage | -20°C to 65°C (non-freezing) |
| Ambient humidity | Operation | 90% RH or less (non-condensing) |
| | Storage | |
| Ambience | | Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust |
| Altitude | | 1000m or less above sea level |
| Vibration resistance | | 5.9m/s ² , 10Hz to 55Hz (X, Y, and Z directions) |

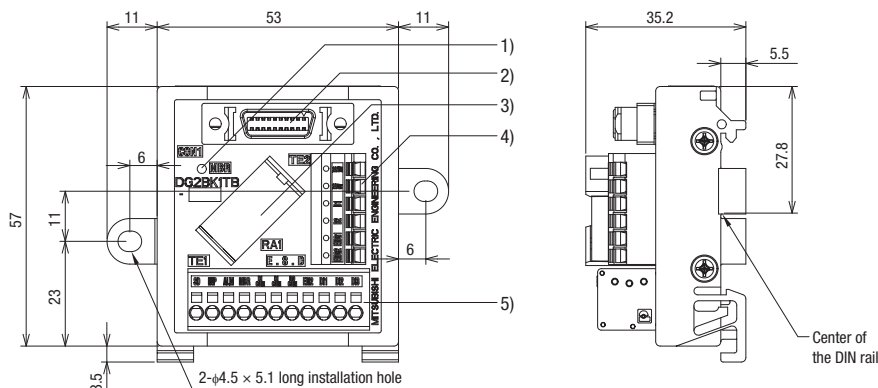
(2) Performance specifications

| Item | | Performance specifications |
|-----------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connected servo amplifier | | MR-J5-G/B, MR-J4-B(-R/J), MR-J4-GF |
| Compatible servo motor capacity | | 0.05kW to 22kW |
| Servo amplifier interface connector | | MDR 20P connector |
| External signal junction terminal block | Terminal section | Number of terminals: 11, 3.5mm pitch, number of cables per terminal: 1 |
| | Applicable wire | Solid wire, stranded wire: 0.2mm ² to 1.5mm ² , 24 to 16AWG Applicable solderless terminal: AI 0.5-10WH, AI 0.75-10GY (PHOENIX CONTACT GmbH & Co. KG) (Recommended tool: CRIMPFOX6) Applicable solderless terminal: BT 0.75-11 (NICHIFU Co., Ltd.) (Recommended tool: NH69) |
| Brake output terminal block | Terminal section | Number of terminals: 6, 3.81mm pitch, number of cables per terminal: 1 |
| | Applicable wire | Solid wire, stranded wire: 0.2mm ² to 1.5mm ² , 24 to 16AWG Applicable solderless terminal: AI 0.5-10WH, AI 0.75-10GY (PHOENIX CONTACT GmbH & Co. KG) (Recommended tool: CRIMPFOX6) Applicable solderless terminal: BT 0.75-11 (NICHIFU Co., Ltd.) (Recommended tool: NH69) |
| Module installation | Screw | M4 × 0.7mm × 10mm or more, tightening torque: 78 to 118N·cm |
| | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| External power supply | Power supply for servo amplifier interface | Voltage: 24VDC, -5% to +10% Current capacity: 0.3A (max.) |
| | Power supply for electromagnetic brakes | Voltage: 24VDC.0/-10% Current capacity: 1.43A (max) (depending on motor used) |
| Relay | Response time | OFF → ON |
| | | ON → OFF |
| Compliance with global standards | | UL61800-5-1 |
| External dimensions (mm) | | 57 (H) × 75 (W) × 35.2 (D) (DIN rail installation 53 (W)) |
| Weight (g) | | Approx. 57 (for DIN rail installation 56) |

External dimensions

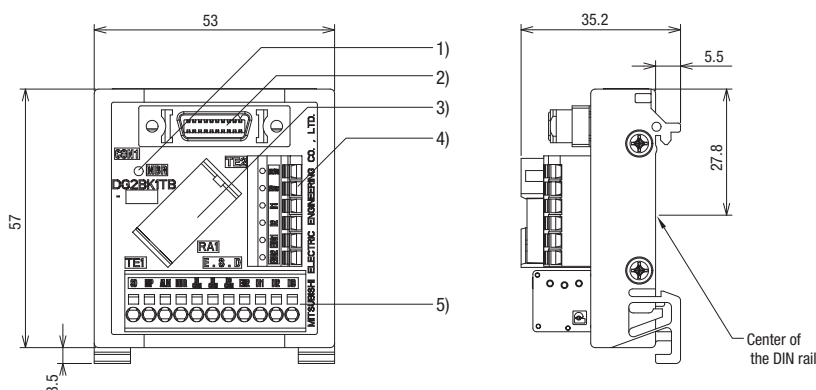
■ DG2BK1TB

Unit: mm

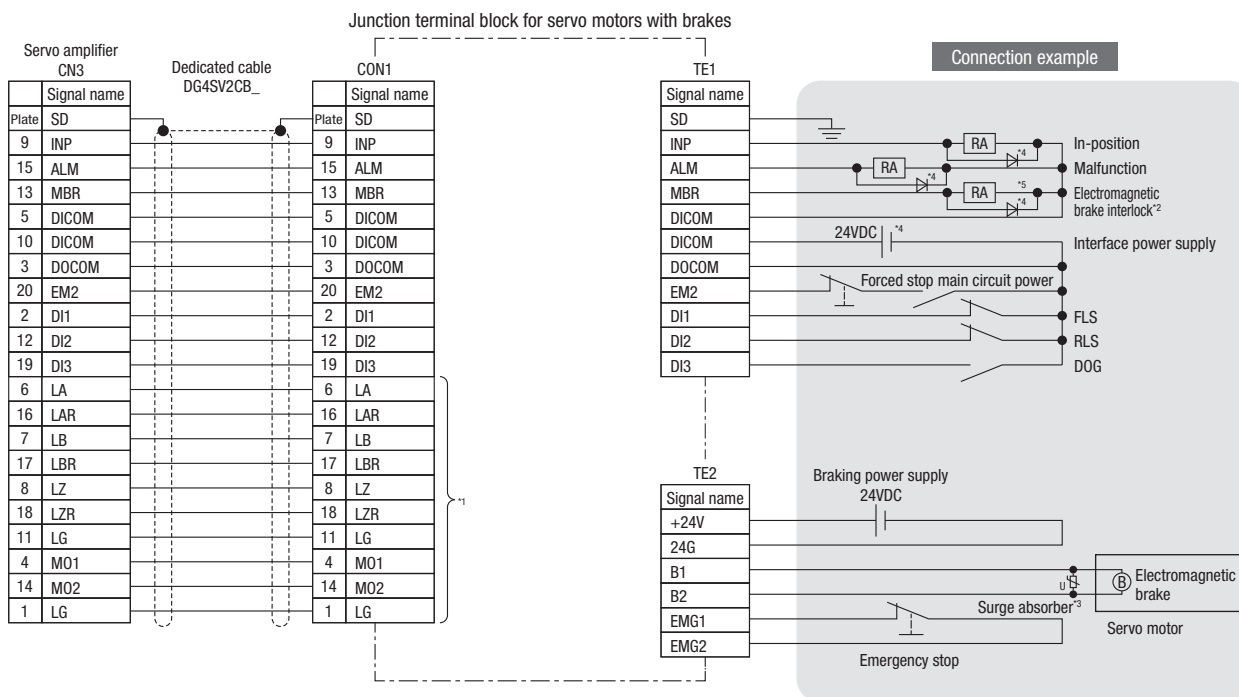


| No. | Name | Function |
|-----|-----------------------------------------|------------------|
| 1) | MBR signal relay operation display LED | LED display: MBR |
| 2) | Servo amplifier interface connector | CON1 |
| 3) | MBR signal relay | MBR |
| 4) | Brake output terminal block | TE2 |
| 5) | External signal junction terminal block | TE1 |

■ DG2BK1TB-D



Connection diagram



*1: This junction terminal block cannot be used when an LA, LB, LZ, MO1, and MO2 signals from the CN3 connector of the servo amplifier is used.
 *2: When the electromagnetic brake interlock signal is input to a controller such as a programmable controller, prepare a separate electromagnetic brake interlock circuit at TE1 MBR.
 *3: For selecting the surge absorber for the electromagnetic brake, refer to the "Servo Motor Instruction Manual (Vol. 3)".
 *4: The diagram shows an example of externally connecting the sink type. For the source type, the polarities of the interface power supply and surge absorbing diode are reversed.
 *5: When an external relay for the electromagnetic brake interlock is connected to the MBR signal of the terminal block TE1, select a relay which includes a built-in relay coil (rated excitation current: 12.5mA) and has a current for LED (3mA) to satisfy the specifications of a servo amplifier. Using the relay outside of the digital output interface specification limits of the servo amplifier may cause a malfunction.

For servo systems

Servo amplifier junction terminal block



Network amplifier junction terminal block

DG2SV3TB

- Cable with the dedicated connector is possible to wire easily.
- With the adoption of the spring clamp type terminal block, the footprint reduces about 40% smaller than the screw type terminal block.
- Using a spring clamp terminal block removes the need for tightening screws periodically, thus problems such as loose screws and the loosening of screws due to vibration are eliminated.
- When using multiple axes, transition wiring between terminal blocks for interface power supplies is available 6A maximum.

Product specifications

(1) General specifications

| Item | | Specifications |
|----------------------|-----------|-----------------------------------------------------------------------------------|
| Ambient temperature | Operation | 0°C to 55°C (non-freezing) |
| | Storage | -20°C to 65°C (non-freezing) |
| Ambient humidity | Operation | 5%RH to 90%RH (non-condensing) |
| | Storage | |
| Ambience | | Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust |
| Altitude | | 2000m or less above sea level |
| Vibration resistance | | 5.9m/s ² , 10Hz to 55Hz (X, Y, and Z directions) |

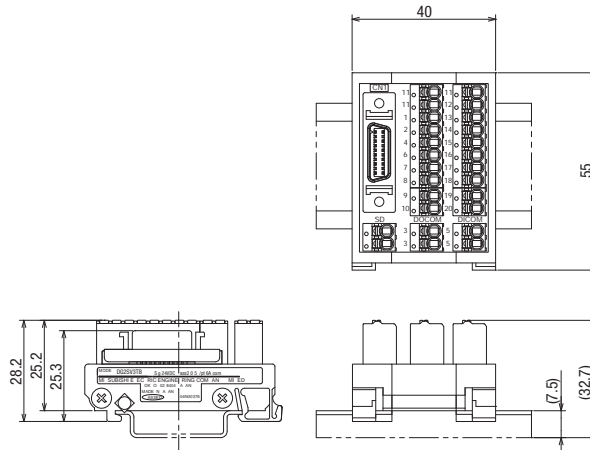
(2) Performance specifications

| Item | | Model |
|----------------------------------|---------------------------|------------------------------------------------------------------------------------------------------|
| | | DG2SV3TB |
| External power supply | Voltage | 24VDC±10% |
| | Maximum operating current | Signal: 0.5A, Common line: 6A |
| Terminal block section | No. of terminals | 26 points, number of cables per terminal: 1 |
| | Applicable wire | Solid wire, twisted wire: 0.2mm ² to 1.5mm ² (24 to 16AWG) film φ2.8mm or less |
| | Wire strip length | 8 to 9mm (Maximum sheath outside diameter: φ2.8mm or less) |
| Compliance with global standards | UL standard | UL61800-5-1 |
| Module installation | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | | Approx. 40g |

External dimensions

■ DG2SV3TB

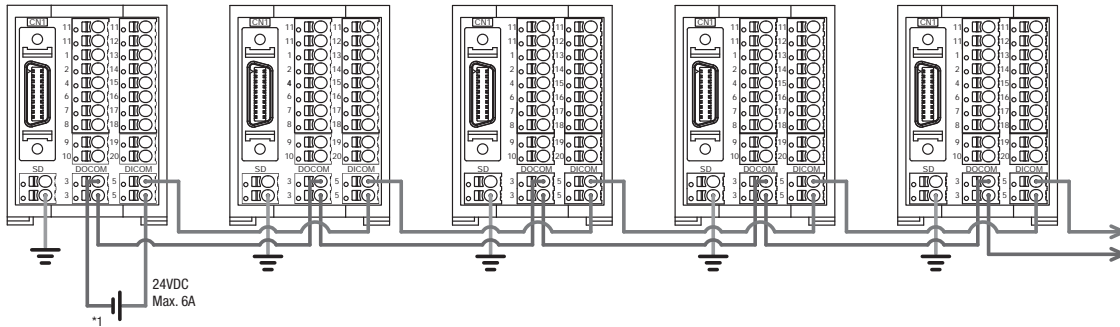
Unit: mm



Connection example

Branch wiring for digital interface power supply

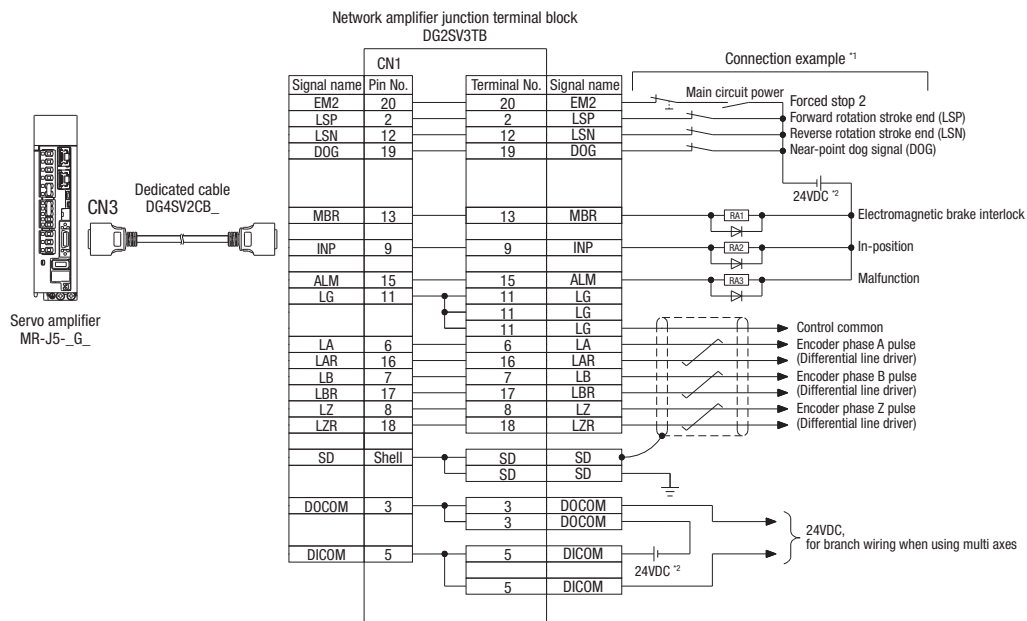
Up to 6A of servo amplifier digital interface power supply is possible to be branched.
Target servo amplifier: MR-J5-G(-RJ), MR-J4-B(-RJ), MR-J4-GF(-RJ)



*1: This diagram shows a sink I/O interface. For the source I/O interface, connect the polarity in reverse.

When connecting MR-J5- _G_

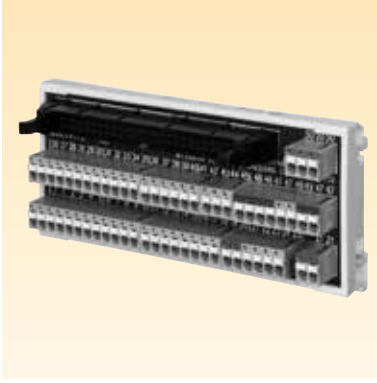
■ For sink I/O interface



*1: Always refer to each servo amplifier instruction manual and servo motor instruction manual to carry out wiring.

*2: The diagram of the 24VDC power supply is divided between input signals and output signals for convenience. However, they can be configured by one.

For source output interface and connection with servo amplifier other than MR-J5- _G_ , refer to the Junction Terminal Block for B-Type Model DG2SV3TB User's Manual (Detailed) for the network amplifier.



General-purpose interface amplifier junction terminal block

DG2SV1TB

- With the adoption of the spring clamp type terminal block, the footprint reduces about 40% smaller than the screw type terminal block.
- Cable with the dedicated connector is possible to wire easily.
- Using a spring clamp terminal block removes the need for tightening screws periodically, thus problems such as loose screws and the loosening of screws due to vibration are eliminated.
- When using multiple axes, transition wiring between terminal blocks for interface power supplies is available up to four terminal power supplies.
- Our SSCNET-compatible hydraulic control unit is also available.

Product specifications

(1) General specifications

| Item | | Specifications |
|----------------------|-----------|-----------------------------------------------------------------------------------|
| Ambient temperature | Operation | 0°C to 55°C (non-freezing) |
| | Storage | -20°C to 65°C (non-freezing) |
| Ambient humidity | Operation | 90% RH or less (non-condensing) |
| | Storage | |
| Ambience | | Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust |
| Altitude | | 2000m or less above sea level |
| Vibration resistance | | 5.9m/s ² , 10Hz to 55Hz (X, Y, and Z directions) |

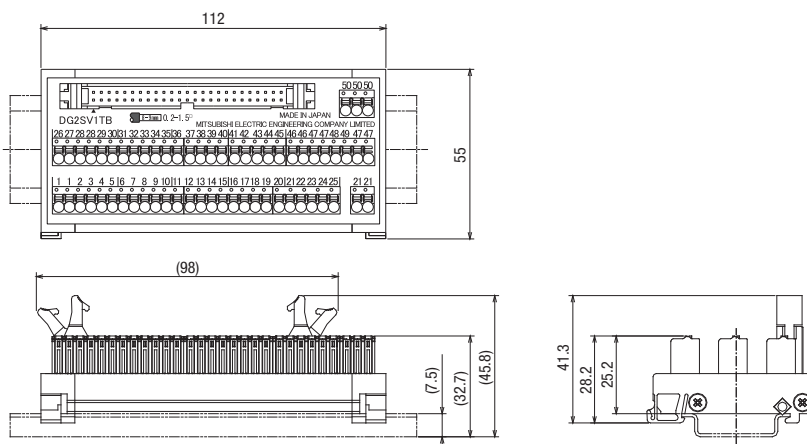
(2) Performance specifications

| Item | | Model |
|----------------------------------|-------------------|-------------------------------------------------------------------|
| | | DG2SV1TB |
| External power supply | Voltage | 24VDC±10% |
| | Current capacity | 1A (max) |
| Terminal block section | No. of terminals | 60 points, number of cables per terminal: 1 |
| | Applicable wire | 0.2 to 1.5mm ² (24 to 16AWG), sheath: φ2.8mm or less |
| | Wire strip length | 8 to 9mm (Maximum sheath outside diameter: φ2.8mm or less) |
| Compliance with global standards | UL standard | UL61800-5-1 |
| Module installation | DIN rail | Applicable DIN rail: TH35-7.5Fe, TH35-7.5Al (IEC 60715 compliant) |
| Weight | | Approx. 80g |

External dimensions

■ DG2SV1TB

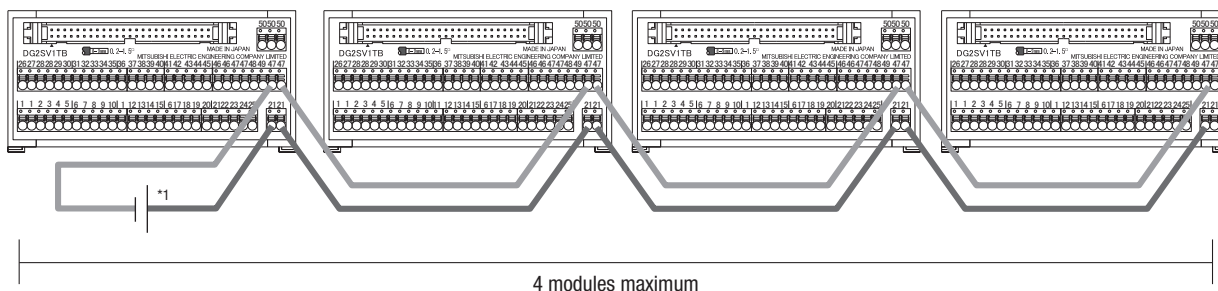
Unit: mm



Connection example

Branch wiring for digital interface power supply

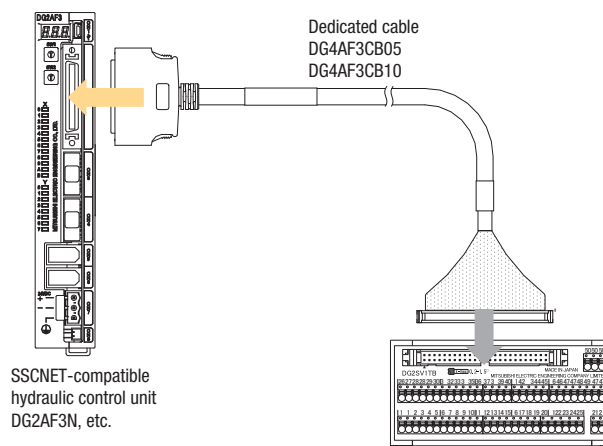
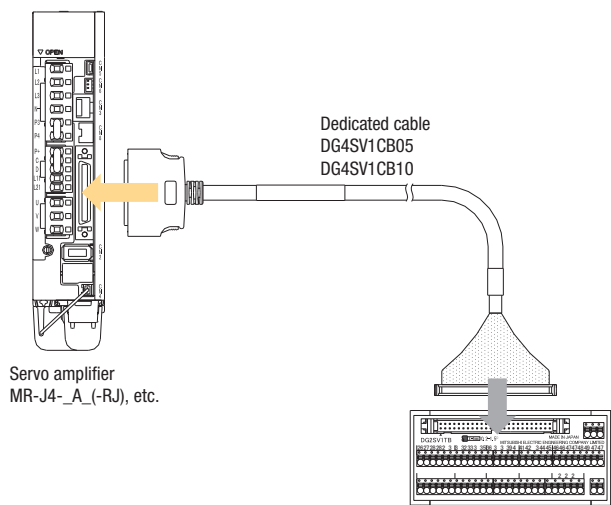
Up to four power supply for digital interface can be branched when connected with a servo amplifier.
 Target servo amplifier: MR-J5-A(-RJ), MR-J4-A(-RJ), MR-J4-03A6(-RJ), MR-J4-DU_A(-RJ)



*1: This diagram shows a sink I/O interface. For the source I/O interface, connect the polarity in reverse.

When connected with the servo amplifier

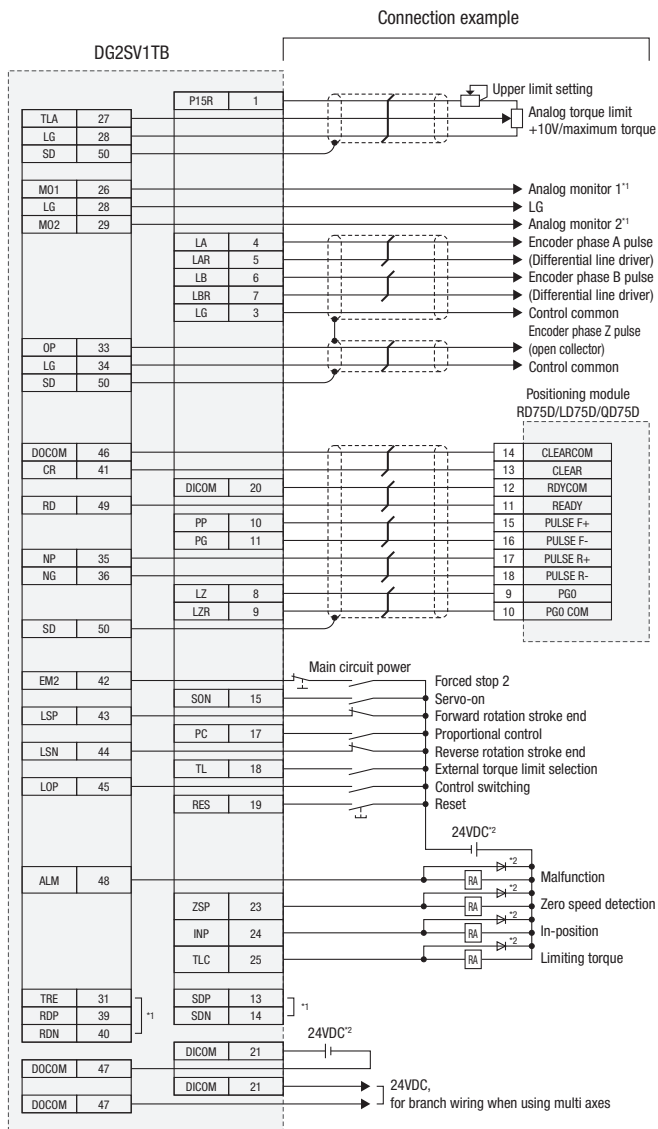
When connected with the SSCNET-compatible hydraulic control unit



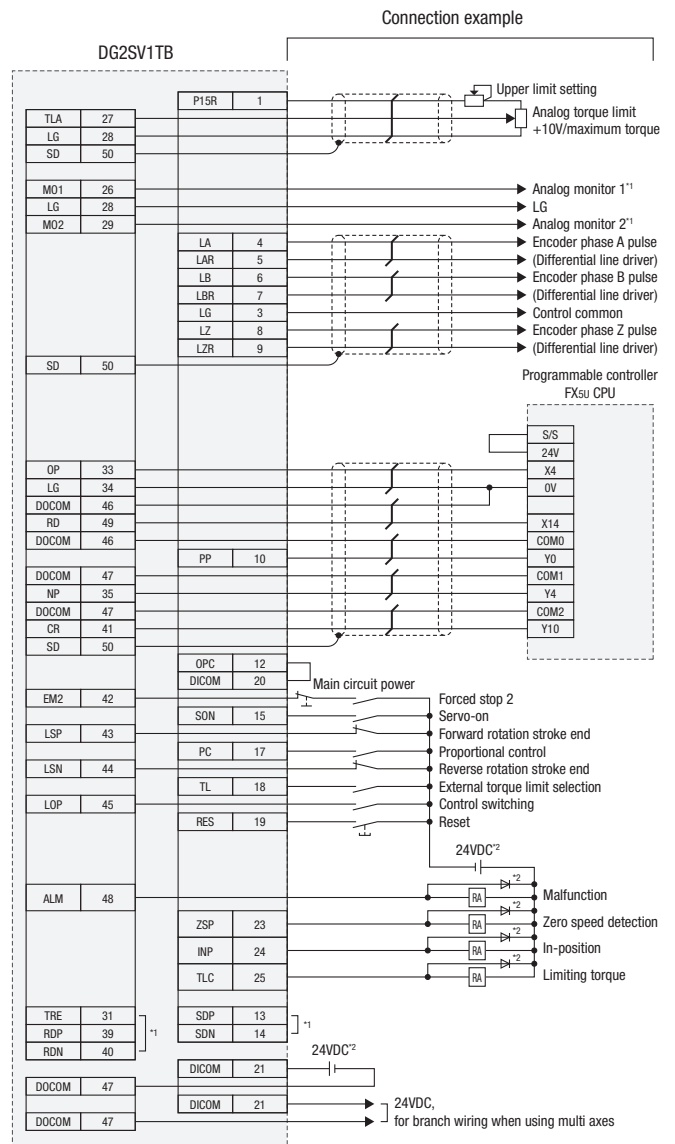
When connected with the MR-J4- A (-RJ), MR-J4-03A6(-RJ), MR-J4- DU A (-RJ)

■ Position control mode (for sink I/O interface)

(1) Differential line driver type



(2) Open-collector type

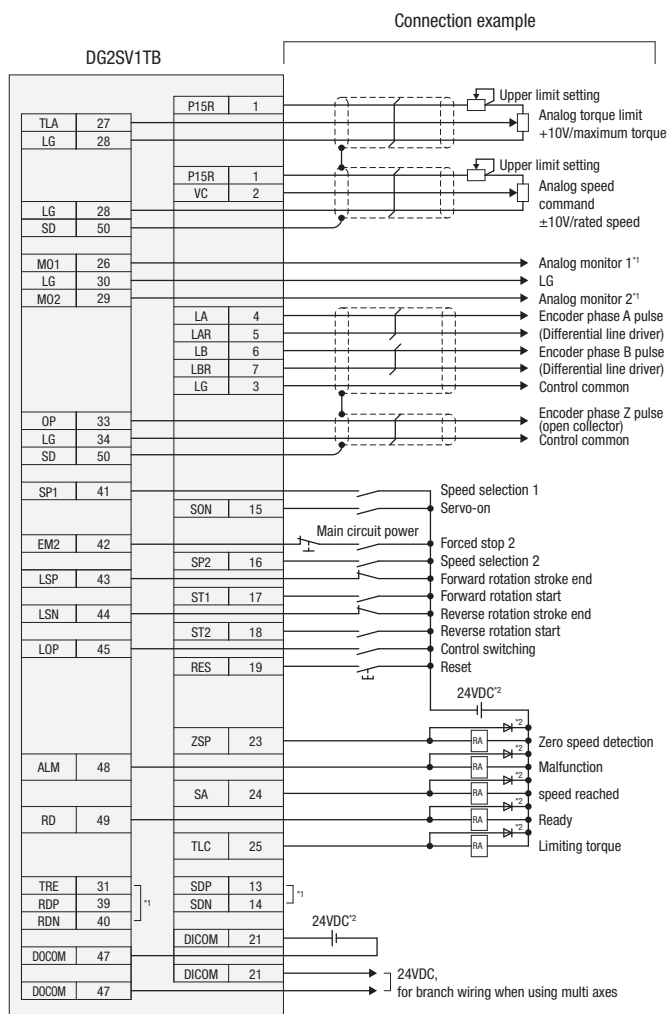


*1: MR-J4-03A6(-RJ) only

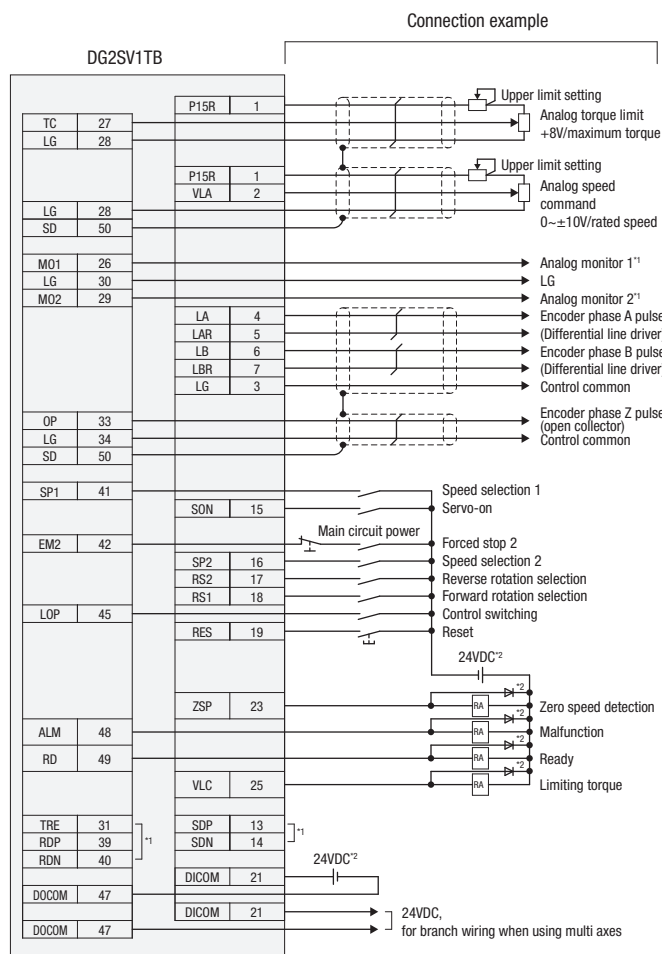
*2: The diagram of the 24VDC power supply is divided between input signals and output signals. However, they can be configured by one. The above diagram shows a sink I/O interface. For the source I/O interface, connect the polarity of the interface power supply and surge absorbing diode in reverse.

*: Always refer to each servo amplifier instruction manual and servo motor instruction manual to carry out wiring.

■ Position control mode (for sink I/O interface)



■ Torque control mode (for sink I/O interface)



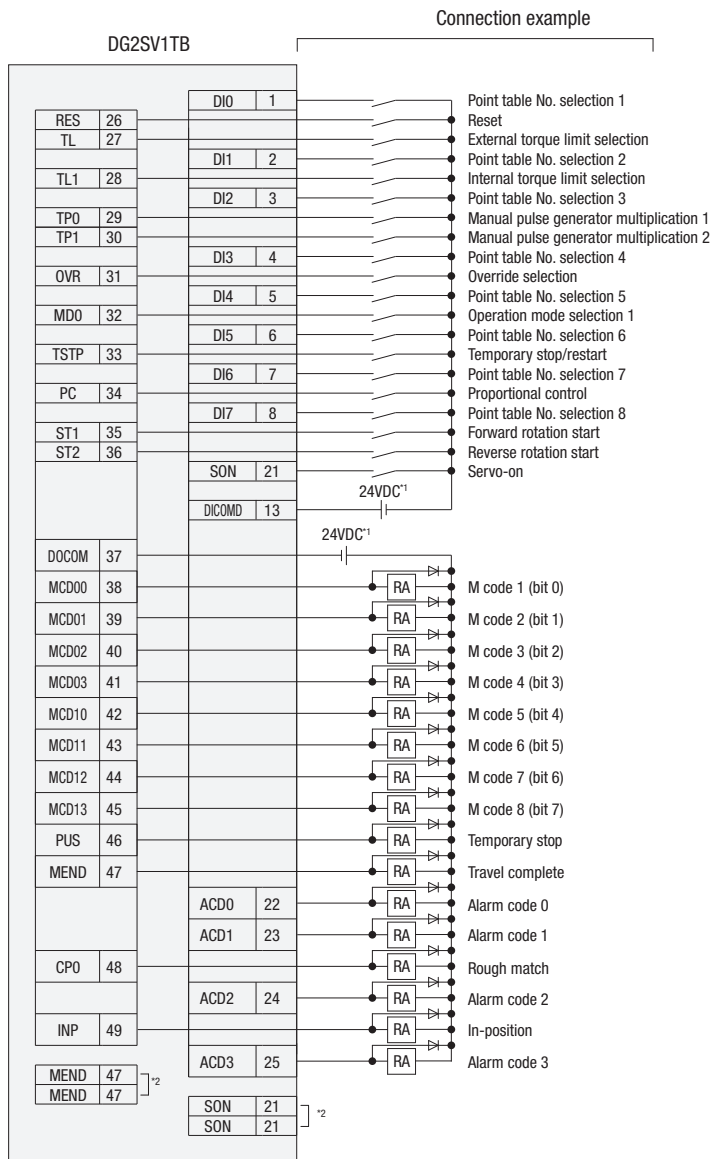
*1: MR-J4-03A6(-RJ) only

*2: The diagram of the 24VDC power supply is divided between input signals and output signals. However, they can be configured by one. The above diagram shows a sink I/O interface. For the source I/O interface, connect the polarity of the interface power supply and surge absorbing diode in reverse.

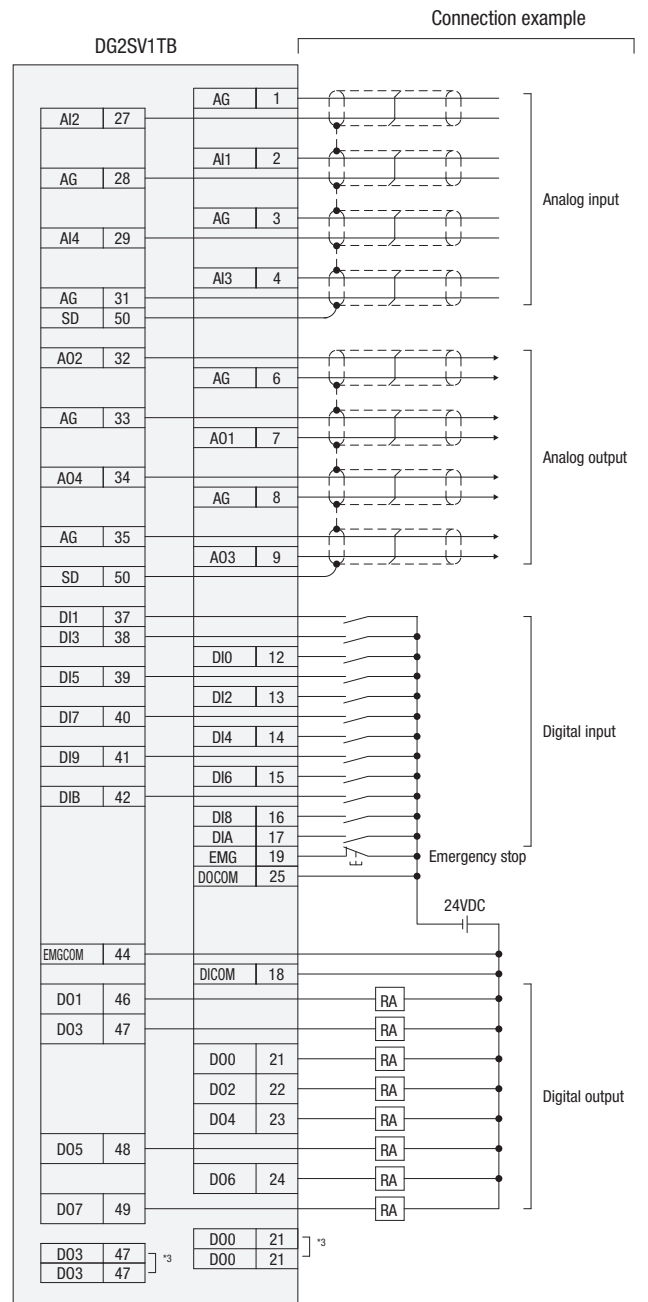
*: Always refer to each servo amplifier instruction manual and servo motor instruction manual to carry out wiring.

■ When connected with the MR-D01

(1) Point table method (for sink I/O interface)



■ When connected with the DG2AF3N/DG2AF3N-P01 (for sink I/O interface)



*1: The diagram of the 24VDC power supply is divided between input signals and output signals. However, they can be configured by one. The above diagram shows a sink I/O interface. For the source I/O interface, connect the polarity of the interface power supply and surge absorbing diode in reverse.

*2: When connected with the MR-D01, branch connection of power supply for digital I/F is not available.

*: Always refer to each servo amplifier instruction manual and servo motor instruction manual to carry out wiring.

*3: When SSCNET hydraulic control unit is used, branch connection of power supply for digital I/F is not available. The above diagram shows a sink I/O interface. For the source I/O interface, connect the polarity of the interface power supply and surge absorbing diode in reverse.

*: For actual wiring, be sure to refer to the user's manual (hardware) and user's manual (detail) respectively.

Time and wire saving devices

Common elements

Common elements

INDEX

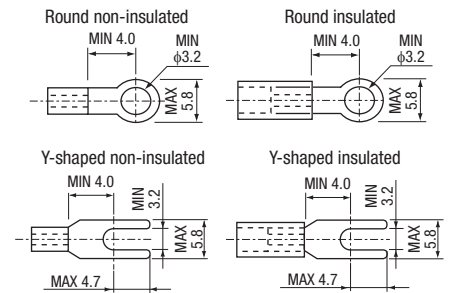
| | |
|---------------------|-------|
| Solderless terminal | P.366 |
| Product list | P.368 |
| Warranty | P.388 |

M3-screw 7mm pitch applicable solderless terminal

● Recommended solderless terminal

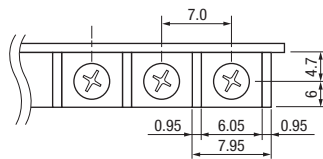
| Type | | R type | | Y type | |
|--------------------------------|----------------------------|--------------------------|----------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer | Applicable wire size | Non-insulated terminal | Insulated terminal | Non-insulated terminal | Insulated terminal |
| NICHIFU Co., Ltd. NTM | 0.3 to 1.25mm ² | R1.25-3N R1.25-3.5N | TMEV1.25-3 TMEV1.25-3N TMEV1.25-3.5N TG ₁ 1.25-3N TG ₁ 1.25-3.5N | 1.25Y-3 1.25Y-3N 1.25Y-3.5 | TMEV1.25Y-3 TMEV1.25Y-3K TMEV1.25Y-3.5 TMEV1.25Y-3.5K TG ₁ 1.25Y-3 TG ₁ 1.25Y-3N TG ₁ 1.25Y-3.5 |
| J.S.T.MFG.CO.,LTD JST | 0.3 to 1.25mm ² | 1.25-MS3 | V1.25-MS3 | 1.25-B3A 1.25-C3A 1.25-C3.5A | V1.25-B3A |
| Nippon Tanshi Co., Ltd. NTK | 0.3 to 1.25mm ² | R1.25-3ML R1.25-3.5SL | RAV1.25-3ML RAP1.25-3ML | VD1.25-3L VD1.25-3.5SS | VDAV1.25-3L VDAV1.25-3.5SS |

● Solderless terminal dimensions (Unit: mm)



● Terminal block shape

(Unit: mm)



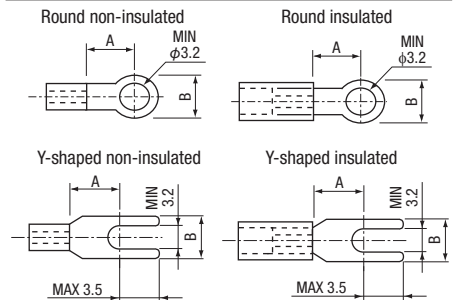
M3-screw 7.62mm pitch applicable solderless terminal

● Recommended solderless terminal

The M3 screw terminal block has an applicable wire size of 0.5 to 1.25mm², however, is connectable to 0.3 to 2mm² wires with use of a solderless terminal.

| Type | | R type | | Y type | |
|--------------------------------|----------------------------|--------------------------|------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Manufacturer | Applicable wire size | Non-insulated terminal | Insulated terminal | Non-insulated terminal | Insulated terminal |
| NICHIFU Co., Ltd. NTM | 0.3 to 1.25mm ² | R1.25-3N R1.25-3.5N | TG ₁ 1.25-3N TG ₁ 1.25-3.5N | 1.25Y-3 1.25Y-3N 1.25Y-3L ¹ 1.25Y-3.5 | TG ₁ 1.25Y-3 TG ₁ 1.25Y-3N TG ₁ 1.25Y-3L ¹ TG ₁ 1.25Y-3.5 |
| | 1.25 to 2.0mm ² | R2-3N | TG ₂ 2-3N | 2Y-3 2Y-3.5S | TG ₂ 2Y-3 TG ₂ 2Y-3.5S |
| J.S.T.MFG.CO.,LTD JST | 0.3 to 1.25mm ² | 1.25-MS3 | V1.25-MS3 | 1.25-B3A 1.25-C3A 1.25 to N3A ¹ 1.25-C3.5A | V1.25-B3A V1.25-N3A ¹ |
| | 1.25 to 2.0mm ² | 2-MS3 | V2-MS3 | 2-N3A 2-M3A ¹ | V2-N3A |
| Nippon Tanshi Co., Ltd. NTK | 0.3 to 1.25mm ² | R1.25-3ML R1.25-3.5SL | RAV1.25-3ML RAP1.25-3ML | VD1.25-3L VD1.25-3.5SS VD1.25-3.5S ¹ | VDAV1.25-3L VDAV1.25-3.5SS VDAV1.25-3.5S ¹ |
| | 1.25 to 2.0mm ² | R2-3SL | RAV2-3SL RAP2-3SL | VD2-3S VD2-3.5SS VD2-3.5S ¹ | VDAV2-3.5SS VDAV2-3.5S ¹ |

● Solderless terminal dimensions (Unit: mm)

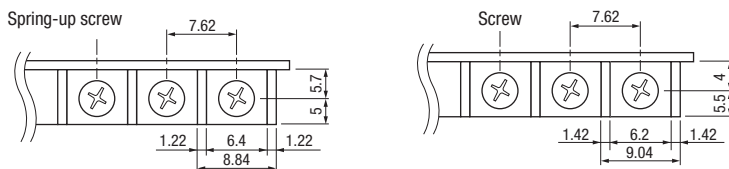


| Solderless terminal dimensions | | |
|--------------------------------|---------|---------|
| | A | B |
| Spring-up screw | MIN 5.0 | MAX 6.3 |
| Screw | MIN 5.5 | MAX 6.1 |

*1: Recommended solderless terminal for spring-up screws only. They do not apply with the screw.

● Terminal block shape

(Unit: mm)



M3.5-screw 8mm pitch applicable solderless terminal

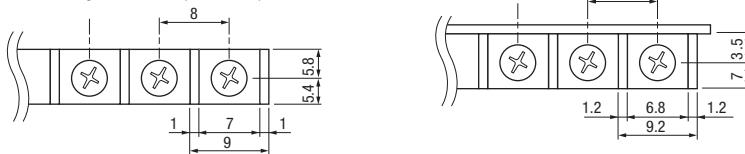
Recommended solderless terminal

| Type | | R type | | Y type | |
|--------------------------------|----------------------------|------------------------|----------------------|------------------------|-----------------------|
| Manufacturer | Applicable wire size | Non-insulated terminal | Insulated terminal | Non-insulated terminal | Insulated terminal |
| NICHIFU Co., Ltd. NTM | 0.3 to 1.25mm ² | R1.25-3.5 | TG \times 1.25-3.5 | 1.25Y-3.5 | TG \times 1.25Y-3.5 |
| | 1.25 to 2.0mm ² | R2-3.5 | TG \times 2-3.5 | 2Y-3.5 | TG \times 2Y-3.5 |
| J.S.T.MFG.CO.,LTD JST | 0.3 to 1.25mm ² | R1.25-3.5 | V1.25-M3 | 1.25-YS3A | V1.25-YS3A |
| | 1.25 to 2.0mm ² | R2-3.5 | V2-M3 | 2-YS3A | V2-YS3A |
| Nippon Tanshi Co., Ltd. NTK | 0.3 to 1.25mm ² | R1.25-3.5 | RAV1.25-3.5 | VD1.25-3.5S | VDAV1.25-3.5S |
| | 1.25 to 2.0mm ² | R2-3.5 | RAV2-3.5 | VD2-3.5S | VDAV2-3.5S |

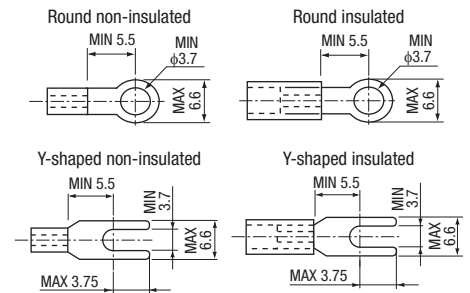
Terminal block shape

(Unit: mm)

Screw holding mechanism (FA-TB1L**)



Solderless terminal dimensions (Unit: mm)



Applicable ferrules for spring clamp terminal blocks

Applicable ferrules and crimping tools

| Manufacturer | Type | Recommended ferrule | Crimping tool |
|-----------------------------------|-------------------------------------------|----------------------------|---------------------|
| | Applicable wire size | | |
| WAGO Kontakttechnik GmbH & Co. KG | 0.08 to 0.34mm ² /28 to 22AWG | 216-302 | 206-220 |
| | 0.34mm ² /24 and 22AWG | 216-302 | 206-204 206-1204 |
| | 0.5mm ² /22 and 20AWG | 216-201 | |
| | 0.75mm ² /20 and 18AWG | 216-202 | |
| PHOENIX CONTACT GmbH & Co. KG | 0.25mm ² /20AWG* ¹ | AI 0,25-8 YE* ¹ | CRIMPFOX 6 |
| | 0.34mm ² /22AWG | AI 0,34-8 TQ | |
| | 0.5mm ² /20AWG | AI 0,5-8 WH | |
| | 0.75mm ² /18AWG | AI 0,75-8 GY | |
| NICHIFU Co., Ltd. | 0.3 to 0.75mm ² * ² | BT0.75-11* ² | NH69 |

*1: This ferrule can be used only for the digital signal converter (terminal block), FA1-TH**20S1E.

*2: This ferrule can be used only for the junction terminal blocks for servo motors with brakes, DG2BK1TB and DG2BK1TB-D.

<Standard> Please check the conforming standards of the products used together. ○: Compliant, △: Material certificate, ×: Not compliant, -: N/A

Junction terminal blocks for programmable controllers

Junction terminal blocks for DC I/O modules

Spring clamp terminal block ▶ P.120

| No. of points | Connection method | Model | Standard | | | |
|---------------|---------------------------------------------|---------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 32 | Spring clamp (1-wire type), horizontal type | FA1-TE1S32XY | ○ | ○ | ○ | - |
| 32 | Spring clamp (1-wire type), vertical type | FA1-TESV32XY | ○ | ○ | ○ | - |
| 16 | Spring clamp (1-wire type), vertical type | FA1-TE1SV16XY | ○ | ○ | ○ | - |
| 38 | Spring clamp, vertical type | FA1-TESV38COM | ○ | ○ | ○ | - |

Spring clamp terminal block conversion adapter ▶ P.120

| No. of points | Connection method | Model | Standard | | | |
|---------------|--------------------------------------------------------------------|------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 40 | Spring clamp, programmable controller module front connection type | FA1-TE40PA | ○ | ○ | ○ | - |

Screw terminal type ▶ P.120

| No. of points | Connection method | Model | Standard | | | |
|-----------------------|----------------------------------------------------------------------------------|---------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 32 | M3-screw (1-wire type) | FA-TB32XY | ○ | ○ | ○ | - |
| | M3-screw (1-wire type, 16-point input/output, for remote I/O module) | FA-TB16X16Y | × | × | ○ | - |
| | M3-screw, small type (1-wire type) | FA-TBS32XY | ○ | ○ | ○ | - |
| | M3-screw (1-wire type, with LED indication, sink type) | FA-TB32XYL | ○ | ○ | ○ | - |
| | M3-screw (1-wire type, with LED indication, source type) | FA-TB32XYH | ○ | ○ | ○ | - |
| | M3-screw (1-wire type, for iQ-F input signals) | FA-FXTB32X | × | ○ | ○ | - |
| | M3-screw (1-wire type, for iQ-F output signals) | FA-FXTB32Y | × | ○ | ○ | - |
| | M3-screw (1-wire type, 16-point input/output, for iQ-F I/O signals) | FA-FXTB16X16Y | × | ○ | ○ | - |
| | M3-screw (2-wire type, 0V common) | FA-TB32XYN3 | ○ | ○ | ○ | - |
| | M3-screw (2-wire type, 24V common) | FA-TB32XYP3 | ○ | ○ | ○ | - |
| 16 | M3.5-screw (1-wire type, 24V common, 1-level type) | FA-TB1L32XY | ○ | ○ | ○ | - |
| | M3-screw (1-wire type) | FA-TB16XY | ○ | ○ | ○ | - |
| | M3-screw (1-wire type, for iQ-F I/O signals) | FA-FXTB16XY | × | ○ | ○ | - |
| | M3-screw (3-wire type, 16 points/8 (24V) common points + 8 (0V) common points) | FA-TB16XYPN | ○ | ○ | ○ | - |
| | M3-screw (3-wire type, 16 points/16 (24V) common points + 16 (0V) common points) | FA-TB16XYPN3 | ○ | ○ | ○ | - |
| | M3.5-screw (2-wire type, 0V common, 1-level type) | FA-TB1L16XYN | ○ | ○ | ○ | - |
| 16 (distributed type) | M3.5-screw (2-wire type, 24V common, 1-level type) | FA-TB1L16XYP | ○ | ○ | ○ | - |
| | M3-screw (3-wire type, 0 to F) | FA-TB16XY1 | ○ | ○ | ○ | - |
| | M3-screw (2-wire type, 0V common, 0 to F) | FA-TB16XY1N | ○ | ○ | ○ | - |
| | M3-screw (3-wire type, 10 to 1F) | FA-TB16XY2 | ○ | ○ | ○ | - |
| | M3-screw (2-wire type, 0V common, 10 to 1F) | FA-TB16XY2N | ○ | ○ | ○ | - |
| 8 (distributed type) | M3-screw (3-wire type, 0 to 7) | FA-TB8XY1 | ○ | ○ | ○ | - |
| | M3-screw (3-wire type, 8 to F) | FA-TB8XY2 | ○ | ○ | ○ | - |
| | M3-screw (3-wire type, 10 to 17) | FA-TB8XY3 | ○ | ○ | ○ | - |
| | M3-screw (3-wire type, 18 to 1F) | FA-TB8XY4 | ○ | ○ | ○ | - |
| 40 | M3-screw, small type | FA-TBS40P | ○ | ○ | ○ | - |
| 20 | M3 screw | FA-LTB20P | × | × | ○ | - |

e-CON, one-touch connector type ▶ P.120

| No. of points | Connection method | Model | Standard | | | |
|-----------------------|-----------------------------------------------------|---------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 32 | e-CON (3-wire type) | FA-LEB32XY | ○ | ○ | ○ | - |
| | e-CON compatible (3-wire type, 3-pole connector) | FA-LEB32XY-3 | ○ | ○ | ○ | - |
| | e-CON compatible (3-wire type, 3-pole connector) | FA-LEB32XY-3A | ○ | ○ | ○ | - |
| 16 | e-CON (3-wire type) | FA-LEB16XY | ○ | ○ | ○ | - |
| | e-CON (3-wire type, for DIN rail installation only) | FA-LEB16XY-D | ○ | ○ | ○ | - |
| 16 (distributed type) | One-touch connector (3-wire type, 0 to F) | FA-CB16XY1 | × | ○ | ○ | - |
| | One-touch connector (3-wire type, 10 to 1F) | FA-CB16XY2 | × | ○ | ○ | - |
| 8 (distributed type) | One-touch connector (3-wire type, 0 to 7) | FA-CB8XY1 | × | ○ | ○ | - |
| | One-touch connector (3-wire type, 8 to F) | FA-CB8XY2 | × | ○ | ○ | - |
| | One-touch connector (3-wire type, 10 to 17) | FA-CB8XY3 | × | ○ | ○ | - |
| | One-touch connector (3-wire type, 18 to 1F) | FA-CB8XY4 | × | ○ | ○ | - |

For AC/DC I/O modules

Screw terminal type ▶ P.120

| No. of points | Connection method | Model | Standard | | | |
|---------------|-----------------------------------------|--------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 18 | M3-screw, 1-wire type | FA-TB18XY | × | × | ○ | -- |
| | M3-screw, 1-wire type | FA-TB161AC | × | × | ○ | -- |
| 16 | M3-screw, 2-wire type | FA-TB161ACC1 | × | × | ○ | -- |
| | M3-screw, 2-wire type | FA-TB161ACC2 | × | × | ○ | -- |
| | M3-screw, 2-wire type (8 points/common) | FA-TB162ACC | × | × | ○ | -- |

Relay module ▶ P.121

| No. of points | Connection method | Model | Standard | | | |
|---------------|-------------------|-----------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 20 | M3 screw | FA-CTB20P | × | × | ○ | -- |

Connection cables ▶ P.121 to P.123

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | |
|---------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------|-------------------------------|---------------|---------------------|----------|----|------|----|
| | | | | | | UL | CE | RoHS | KC |
| MELSEC iQ-R series | For sink/source | Spring clamp terminal block | MIL 20P | 1m | FA1-CB1L10EM1F18 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB1L20EM1F18 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB1L30EM1F18 | △ | -- | ○ | -- |
| | For sink/source | Spring clamp terminal block | MIL 20P × 2 | 1m | FA1-CB1L10EM2F34 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB1L20EM2F34 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB1L30EM2F34 | △ | -- | ○ | -- |
| MELSEC iQ-R/ MELSEC iQ-F series remote I/O module | For sink/source, cross sectional area 0.3mm ² , allowable current 4A | Spring clamp terminal block | Discrete cable, 18P | 1m | FA1-CB3L03SQ10E1F18 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB3L03SQ20E1F18 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB3L03SQ30E1F18 | △ | -- | ○ | -- |
| | For sink/source, cross sectional area 0.75mm ² , allowable current 8A | Spring clamp terminal block | Discrete cable, 18P | 1m | FA1-CB3L07SQ10E1F18 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB3L07SQ20E1F18 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB3L07SQ30E1F18 | △ | -- | ○ | -- |
| | For sink/source, cross sectional area 0.3mm ² , allowable current 4A | Spring clamp terminal block | Discrete cable, 34P | 1m | FA1-CB3L03SQ10E1F34 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB3L03SQ20E1F34 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB3L03SQ30E1F34 | △ | -- | ○ | -- |
| | For sink/source, cross sectional area 0.75mm ² , allowable current 8A | Spring clamp terminal block | Discrete cable, 34P | 1m | FA1-CB3L07SQ10E1F34 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB3L07SQ20E1F34 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB3L07SQ30E1F34 | △ | -- | ○ | -- |
| | For sink/source, cross sectional area 0.3mm ² , allowable current 4A | Spring clamp terminal block | Discrete cable, 40P | 1m | FA1-CB3L03SQ10E1F40 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB3L03SQ20E1F40 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB3L03SQ30E1F40 | △ | -- | ○ | -- |
| | For sink/source, cross sectional area 0.75mm ² , allowable current 8A | Spring clamp terminal block | Discrete cable, 40P | 1m | FA1-CB3L07SQ10E1F40 | △ | -- | ○ | -- |
| | | | | 2m | FA1-CB3L07SQ20E1F40 | △ | -- | ○ | -- |
| | | | | 3m | FA1-CB3L07SQ30E1F40 | △ | -- | ○ | -- |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | For sink/source | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMV | △ | -- | ○ | -- |
| | | | | 1m | FA-CBL10FMV | △ | -- | ○ | -- |
| | | | | 2m | FA-CBL20FMV | △ | -- | ○ | -- |
| | | | | 3m | FA-CBL30FMV | △ | -- | ○ | -- |
| | | | | 5m | FA-CBL50FMV | △ | -- | ○ | -- |
| | | | | 8m | FA-CBL80FMV | △ | -- | ○ | -- |
| | | | | 10m | FA-CBL100FMV | △ | -- | ○ | -- |
| | | | | 15m | FA-CBL150FMV | △ | -- | ○ | -- |
| | | | | 20m | FA-CBL200FMV | △ | -- | ○ | -- |
| | For negative common input | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMVE | △ | -- | ○ | -- |
| | | | | 1m | FA-CBL10FMVE | △ | -- | ○ | -- |
| | | | | 2m | FA-CBL20FMVE | △ | -- | ○ | -- |
| | For negative common input | D-Sub37P | MIL 40P | 0.5m | FA-CBL05DMFX | △ | -- | ○ | -- |
| | | | | 1m | FA-CBL10DMFX | △ | -- | ○ | -- |
| | | | | 2m | FA-CBL20DMFX | △ | -- | ○ | -- |
| 3m | | | | FA-CBL30DMFX | △ | -- | ○ | -- | |
| 5m | | | | FA-CBL50DMFX | △ | -- | ○ | -- | |
| 10m | | | | FA-CBL100DMFX | △ | -- | ○ | -- | |
| For source output | D-Sub37P | MIL 40P | 0.5m | FA-CBL05DMFY | △ | -- | ○ | -- | |
| | | | 1m | FA-CBL10DMFY | △ | -- | ○ | -- | |
| | | | 2m | FA-CBL20DMFY | △ | -- | ○ | -- | |
| | | | 3m | FA-CBL30DMFY | △ | -- | ○ | -- | |
| | | | 5m | FA-CBL50DMFY | △ | -- | ○ | -- | |
| | | | 10m | FA-CBL100DMFY | △ | -- | ○ | -- | |
| For sink/source, branching on relay module | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2V | △ | -- | ○ | -- | |
| | | | 1m | FA-CBL10FM2V | △ | -- | ○ | -- | |
| | | | 1.5m | FA-CBL15FM2V | △ | -- | ○ | -- | |
| | | | 2m | FA-CBL20FM2V | △ | -- | ○ | -- | |
| | | | 3m | FA-CBL30FM2V | △ | -- | ○ | -- | |
| | | | 5m | FA-CBL50FM2V | △ | -- | ○ | -- | |

<Standard> Please check the conforming standards of the products used together. ○: Compliant, Δ: Material certificate, ×: Not compliant, -: N/A

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | |
|---------------------------------------------|-------------------------------------------------------|----------------------------------------|-------------------------------|-----------------------|--------------------|----------|-----------|------|----|
| | | | | | | UL | CE | RoHS | KC |
| MELSEC iQ-R/ MELSEC-Q series | For sink/source, branching on programmable controller | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2LV | Δ | - | ○ | - |
| | | | | 1m | FA-CBL10FM2LV | Δ | - | ○ | - |
| | | | | 2m | FA-CBL20FM2LV | Δ | - | ○ | - |
| | | | | 3m | FA-CBL30FM2LV | Δ | - | ○ | - |
| | | | | 5m | FA-CBL50FM2LV | Δ | - | ○ | - |
| | 10m | FA-CBL100FM2LV | Δ | - | ○ | - | | | |
| | For source output, branching on relay module | D-Sub37P | MIL 20P × 2 | 2m | FA-CBL20DM2FY | Δ | - | ○ | - |
| | For AC/DC I/O modules | Screw terminal block | 20P | 0.5m | FA-CBL05TD | Δ | - | ○ | - |
| | | | | 0.7m | FA-CBL07TD | Δ | - | ○ | - |
| | | | | 1m | FA-CBL10TD | Δ | - | ○ | - |
| | | | | 1.5m | FA-CBL15TD | Δ | - | ○ | - |
| | | | | 2m | FA-CBL20TD | Δ | - | ○ | - |
| | | | | 2.5m | FA-CBL25TD | Δ | - | ○ | - |
| | | | | 3m | FA-CBL30TD | Δ | - | ○ | - |
| | | | | Discrete cable | 20P | 2m | FA-CBL20D | Δ | - |
| MELSEC iQ-R/ MELSEC-Q series | Sink/source shared type | Screw terminal block | MIL 20P | 0.6m | FA-CBL06TMV20 | Δ | - | ○ | - |
| | | | | 1m | FA-CBL10TMV20 | Δ | - | ○ | - |
| | | | | 2m | FA-CBL20TMV20 | Δ | - | ○ | - |
| | | | | 3m | FA-CBL30TMV20 | Δ | - | ○ | - |
| MELSEC iQ-F series | For sink input/output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB1L10EM1F18 | Δ | - | ○ | - |
| | | | | 2m | FA2-CB1L20EM1F18 | Δ | - | ○ | - |
| | | | | 3m | FA2-CB1L30EM1F18 | Δ | - | ○ | - |
| | For source input/output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB1L10EM1F18E | Δ | - | ○ | - |
| | | | | 2m | FA2-CB1L20EM1F18E | Δ | - | ○ | - |
| | | | | 3m | FA2-CB1L30EM1F18E | Δ | - | ○ | - |
| MELSEC iQ-F/ MELSEC-F series | For sink | MIL 20P | MIL 20P | 0.6m | FA-FXCBL06MMH20 | Δ | - | ○ | - |
| | | | | 1m | FA-FXCBL10MMH20 | Δ | - | ○ | - |
| | | | | 1.5m | FA-FXCBL15MMH20 | Δ | - | ○ | - |
| | | | | 2m | FA-FXCBL20MMH20 | Δ | - | ○ | - |
| | | | | 3m | FA-FXCBL30MMH20 | Δ | - | ○ | - |
| | For source | MIL 20P | MIL 20P | 0.6m | FA2-CB1L06MM1H20E | Δ | - | ○ | - |
| | | | | 1m | FA2-CB1L10MM1H20E | Δ | - | ○ | - |
| | | | | 1.5m | FA2-CB1L15MM1H20E | Δ | - | ○ | - |
| | | | | 2m | FA2-CB1L20MM1H20E | Δ | - | ○ | - |
| | | | | 3m | FA2-CB1L30MM1H20E | Δ | - | ○ | - |
| | For sink, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20 | Δ | - | ○ | - |
| | | | | 2m | FA2-CB1LT20MM1H20 | Δ | - | ○ | - |
| | | | | 3m | FA2-CB1LT30MM1H20 | Δ | - | ○ | - |
| | For source, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20E | Δ | - | ○ | - |
| | | | | 2m | FA2-CB1LT20MM1H20E | Δ | - | ○ | - |
| | | | | 3m | FA2-CB1LT30MM1H20E | Δ | - | ○ | - |
| | Sink/source shared type | MIL 20P × 2 | MIL 40P | 0.6m | FA-FXCBL06MM2H | Δ | - | ○ | - |
| | | | | 1m | FA-FXCBL10MM2H | Δ | - | ○ | - |
| | | | | 1.5m | FA-FXCBL15MM2H | Δ | - | ○ | - |
| | | | | 2m | FA-FXCBL20MM2H | Δ | - | ○ | - |
| | | | | 3m | FA-FXCBL30MM2H | Δ | - | ○ | - |
| | Sink/source shared type, withstanding -20°C | MIL 20P × 2 | MIL 40P | 1m | FA2-CB1LT10MM2H | Δ | - | ○ | - |
| | | | | 2m | FA2-CB1LT20MM2H | Δ | - | ○ | - |
| | | | | 3m | FA2-CB1LT30MM2H | Δ | - | ○ | - |
| Sink/source shared type | MIL 20P × 2 | MIL 40P | 0.6m | FA-FXCBL06MM2H16X16Y | Δ | - | ○ | - | |
| | | | 1m | FA-FXCBL10MM2H16X16Y | Δ | - | ○ | - | |
| | | | 1.5m | FA-FXCBL15MM2H16X16Y | Δ | - | ○ | - | |
| | | | 2m | FA-FXCBL20MM2H16X16Y | Δ | - | ○ | - | |
| | | | 3m | FA-FXCBL30MM2H16X16Y | Δ | - | ○ | - | |
| Sink/source shared type, withstanding -20°C | MIL 20P × 2 | MIL 40P | 1m | FA2-CB1LT10MM2H16X16Y | Δ | - | ○ | - | |
| | | | 2m | FA2-CB1LT20MM2H16X16Y | Δ | - | ○ | - | |
| | | | 3m | FA2-CB1LT30MM2H16X16Y | Δ | - | ○ | - | |
| MELSEC-L series | For connecting junction terminal block | FCN 40P | MIL 20P × 2 | 1m | FA-SCBL10FM2LV-LB | Δ | - | ○ | - |
| CC-Link IE TSN | For input | Spring clamp terminal block | MIL 20P | 1m | FA3-CB1L10EM1F18X | Δ | - | ○ | - |
| | | | | 2m | FA3-CB1L20EM1F18X | Δ | - | ○ | - |
| | | | | 3m | FA3-CB1L30EM1F18X | Δ | - | ○ | - |
| | For output | Spring clamp terminal block | MIL 20P | 1m | FA3-CB1L10EM1F18Y | Δ | - | ○ | - |
| | | | | 2m | FA3-CB1L20EM1F18Y | Δ | - | ○ | - |
| | | | | 3m | FA3-CB1L30EM1F18Y | Δ | - | ○ | - |
| CC-Link IE TSN CC-Link IE Field Basic | For input | Spring clamp terminal block | MIL 20P × 2 | 1m | FA3-CB1L10EM2F34X | Δ | - | ○ | - |
| | | | | 2m | FA3-CB1L20EM2F34X | Δ | - | ○ | - |
| | | | | 3m | FA3-CB1L30EM2F34X | Δ | - | ○ | - |
| | For output | Spring clamp terminal block | MIL 20P × 2 | 1m | FA3-CB1L10EM2F34Y | Δ | - | ○ | - |
| | | | | 2m | FA3-CB1L20EM2F34Y | Δ | - | ○ | - |
| | | | | 3m | FA3-CB1L30EM2F34Y | Δ | - | ○ | - |

<Standard> Please check the conforming standards of the products used together. ○: Compliant, △: Material certificate, ×: Not compliant, -: N/A

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | | | |
|----------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------|-------------------------------|----------------|----------------|----------|---------------|------|----|---|---|
| | | | | | | UL | CE | RoHS | KC | | |
| CC-Link IE Field CC-Link | For sink | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMH | △ | - | ○ | - | | |
| | | | | 1m | FA-CBL10FMH | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20FMH | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30FMH | △ | - | ○ | - | | |
| | | | | 5m | FA-CBL50FMH | △ | - | ○ | - | | |
| | For sink, flat cable | FCN 40P | MIL 40P | 0.5m | FA-FCBL05FMH | △ | - | ○ | - | | |
| | | | | 1m | FA-FCBL10FMH | △ | - | ○ | - | | |
| | | | | 2m | FA-FCBL20FMH | △ | - | ○ | - | | |
| | | | | 3m | FA-FCBL30FMH | △ | - | ○ | - | | |
| | For sink, branching on relay module | FCN 40P | MIL 20P × 2 | 0.3m | FA-CBL03FM2H | △ | - | ○ | - | | |
| | | | | 1m | FA-CBL10FM2H | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20FM2H | △ | - | ○ | - | | |
| | For sink, branching on programmable controller | FCN 40P | MIL 20P × 2 | 1m | FA-CBL10FM2LH | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20FM2LH | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30FM2LH | △ | - | ○ | - | | |
| | | | | 5m | FA-CBL50FM2LH | △ | - | ○ | - | | |
| CC-Link/LT | For sink | MIL 20P | MIL 20P | 0.6m | FA-CBL06MMH20 | △ | - | ○ | - | | |
| | | | | 1m | FA-CBL10MMH20 | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20MMH20 | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30MMH20 | △ | - | ○ | - | | |
| | | | | 5m | FA-CBL50MMH20 | △ | - | ○ | - | | |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series CC-Link IE Field CC-Link | For connecting distributed type modules | MIL 40P | MIL 40P | 0.5m | FA-CBL05MMH | △ | - | ○ | - | | |
| | | | | 1m | FA-CBL10MMH | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20MMH | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30MMH | △ | - | ○ | - | | |
| | | | | 5m | FA-CBL50MMH | △ | - | ○ | - | | |
| | | | | 8m | FA-CBL80MMH | △ | - | ○ | - | | |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | For FA-TBS40P connection | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMV-M | △ | - | ○ | - | | |
| | | | | 1m | FA-CBL10FMV-M | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20FMV-M | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30FMV-M | △ | - | ○ | - | | |
| | | | | 5m | FA-CBL50FMV-M | △ | - | ○ | - | | |
| CC-Link | For FA-TBS40P connection | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMH-M | △ | - | ○ | - | | |
| General-purpose programmable controllers | For FA-LTB20P connection | Discrete cable | MIL 20P | 0.6m | FA-CBL06M20 | △ | - | ○ | - | | |
| | | | | 1m | FA-CBL10M20 | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20M20 | △ | - | ○ | - | | |
| | | Y terminal | MIL 20P | 1m | FA-CBL10YM20 | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20YM20 | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30YM20 | △ | - | ○ | - | | |
| | FCN 40P | Discrete cable | FCN 40P | 2m | FA-CBL20FV | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30FV | △ | - | ○ | - | | |
| | | | | 5m | FA-CBL50FV | △ | - | ○ | - | | |
| | | | | 8m | FA-CBL80FV | △ | - | ○ | - | | |
| | | | | Discrete cable | FCN 40P | 1m | FA-BCBL10FFBL | △ | - | ○ | - |
| | | | | | | 2m | FA-BCBL20FFBL | △ | - | ○ | - |
| | | 3m | FA-BCBL30FFBL | | | △ | - | ○ | - | | |
| | | Discrete cable with Y-shaped solderless terminals | FCN 40P | 1m | FA-BCBL10FFBLY | △ | - | ○ | - | | |
| | | | | 2m | FA-BCBL20FFBLY | △ | - | ○ | - | | |
| | | | | 3m | FA-BCBL30FFBLY | △ | - | ○ | - | | |
| | | Discrete cable with round solderless terminals | FCN 40P | 1m | FA-BCBL10FFBLR | △ | - | ○ | - | | |
| | | | | 2m | FA-BCBL20FFBLR | △ | - | ○ | - | | |
| 3m | FA-BCBL30FFBLR | | | △ | - | ○ | - | | | | |
| D-Sub37P | Discrete cable | FCN 40P | MIL 40P | 3m | FA-BCBL30DFBL | △ | - | ○ | - | | |
| PLCs manufactured by OMRON | For FA-TBS40P connection | FCN 40P | MIL 40P | 0.5m | FA-CBL05MMH-R | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20MMH-R | △ | - | ○ | - | | |
| PLCs manufactured by Fuji Electric FA Components & Systems and Yokogawa Electric | For FA-TBS40P connection | FCN 40P | MIL 40P | 0.5m | FA-CBL05FMH-FY | △ | - | ○ | - | | |
| | | | | 1m | FA-CBL10FMH-FY | △ | - | ○ | - | | |
| | | | | 2m | FA-CBL20FMH-FY | △ | - | ○ | - | | |
| | | | | 3m | FA-CBL30FMH-FY | △ | - | ○ | - | | |
| | | | | 5m | FA-CBL50FMH-FY | △ | - | ○ | - | | |

Protective cover ▶ P.123

| Specifications | Model | Standard | | | |
|---------------------------------------------------------------------|---------------|----------|----|------|----|
| | | UL | CE | RoHS | KC |
| MIL 40P connector cover for distributed type modules (quantity: 10) | FA-CAP40MIL10 | × | - | ○ | - |

Junction terminal blocks for analog modules

Screw terminal type ▶ P.124

| No. of points | Connection method | Model | Standard | | | |
|---------------|------------------------------------------------------------------------------------------------|---------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 40 | M3-screw, for isolated analog modules (R60AD8/16-G, Q68AD-G), small type | FA1-TBS40ADGN | ○ | ○ | ○ | - |
| | M3-screw, for isolated analog modules (R60AD8/16-G, Q68AD-G) | FA-LTB40ADGN | ○ | ○ | ○ | - |
| | M3-screw, for isolated analog modules (Q66AD-DG), small type | FA1-TBS40ADDG | ○ | ○ | ○ | - |
| | M3-screw, for isolated analog modules (Q66AD-DG) | FA-LTB40ADDG | ○ | × | ○ | - |
| | M3-screw, for isolated analog modules (R60DA8/16-G, Q66DA-G), small type | FA1-TBS40DAG | ○ | ○ | ○ | - |
| | M3-screw, for isolated analog modules (R60DA8/16-G, Q66DA-G) | FA-LTB40DAG | ○ | ○ | ○ | - |
| 20 | M3-screw, for analog modules | FA-LTB20P | × | × | ○ | - |
| - | Conversion from screw type to 20P connector type, for analog modules | FA-Q6TCA | × | ○ | ○ | - |
| 40 | M3-screw, for isolated thermocouple input modules, without cold junction compensation resistor | FA-LTB40TDG | ○ | ○ | ○ | - |
| 20 | M3-screw, for thermocouple input modules, with cold junction compensation resistor | FA-TB20TD | ○ | ○ | ○ | - |
| 40 | M3-screw, for RTD input modules | FA-LTB40RD3G | ○ | ○ | ○ | - |
| 20 | M3-screw, for temperature control modules | FA-TB20TC | ○ | ○ | ○ | - |

Connection cables ▶ P.124

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | | | | | | |
|---------------------------------|-----------------------------|-----------------------------------------|---------------------------------|----------------------|------------------|--------------------------------|----------------------|---------------|------|---------------|---|---|---|---|
| | | | | | | UL | CE | RoHS | KC | | | | | |
| MELSEC iQ-R series | For isolated analog modules | FCN 40P | MIL 40P | 0.5m | FA1-CBL05R60DA8G | △ | - | ○ | - | | | | | |
| | | | | 1m | FA1-CBL10R60DA8G | △ | - | ○ | - | | | | | |
| | | | | 2m | FA1-CBL20R60DA8G | △ | - | ○ | - | | | | | |
| | | | | 3m | FA1-CBL30R60DA8G | △ | - | ○ | - | | | | | |
| | | | | 0.5m | FA-CBL05Q68ADGN | △ | - | ○ | - | | | | | |
| | | | | 1m | FA-CBL10Q68ADGN | △ | - | ○ | - | | | | | |
| | | | | 2m | FA-CBL20Q68ADGN | △ | - | ○ | - | | | | | |
| | | | | 3m | FA-CBL30Q68ADGN | △ | - | ○ | - | | | | | |
| | | | | 0.5m | FA-CBL05Q66ADDG | △ | - | ○ | - | | | | | |
| | | | | 1m | FA-CBL10Q66ADDG | △ | - | ○ | - | | | | | |
| | | | | 2m | FA-CBL20Q66ADDG | △ | - | ○ | - | | | | | |
| | | | | 3m | FA-CBL30Q66ADDG | △ | - | ○ | - | | | | | |
| MELSEC iQ-R/ MELSEC-Q series | For analog modules | Screw terminal block | MIL 20P | 0.5m | FA-CBL05Q68ADT | △ | - | ○ | - | | | | | |
| | | | | 2m | FA-CBL20Q68ADT | △ | - | ○ | - | | | | | |
| | | | | 3m | FA-CBL30Q68ADT | △ | - | ○ | - | | | | | |
| | | | | 2m | FA-CBL20Q64ADT | △ | - | ○ | - | | | | | |
| | | | | 3m | FA-CBL30Q64ADT | △ | - | ○ | - | | | | | |
| | | | | 0.5m | FA-CBL05Q68DAT | △ | - | ○ | - | | | | | |
| | | | | 2m | FA-CBL20Q68DAT | △ | - | ○ | - | | | | | |
| | | | | 3m | FA-CBL30Q68DAT | △ | - | ○ | - | | | | | |
| | | | | 2m | FA-CBL20Q64DAT | △ | - | ○ | - | | | | | |
| | | | | 3m | FA-CBL30Q64DAT | △ | - | ○ | - | | | | | |
| | | | | 2m | FA-CBL20Q68ADA | △ | - | ○ | - | | | | | |
| | | | | 0.5m | FA-CBL05Q68DAA | △ | - | ○ | - | | | | | |
| | | 2m | FA-CBL20Q68DAA | △ | - | ○ | - | | | | | | | |
| | | For isolated thermocouple input modules | MIL 40P | MIL 40P | 0.5m | FA-CBL05Q68TDG | △ | - | ○ | - | | | | |
| | | | | | 1m | FA-CBL10Q68TDG | △ | - | ○ | - | | | | |
| | | | | | 2m | FA-CBL20Q68TDG | △ | - | ○ | - | | | | |
| | | | | | 3m | FA-CBL30Q68TDG | △ | - | ○ | - | | | | |
| | | | | | MELSEC-Q series | For thermocouple input modules | Screw terminal block | 20P connector | 1.5m | FA-CBLQ64TD15 | △ | - | ○ | - |
| | | | | | | | | | 2m | FA-CBLQ64TD20 | △ | - | ○ | - |
| | | 3m | FA-CBLQ64TD30 | △ | | | | | - | ○ | - | | | |
| | | MELSEC iQ-R/ MELSEC-Q series | For RTD input modules | MIL 40P | MIL 40P | 0.5m | FA-CBL05Q68RD3G | △ | - | ○ | - | | | |
| | | | | | | 1m | FA-CBL10Q68RD3G | △ | - | ○ | - | | | |
| | | | | | | 2m | FA-CBL20Q68RD3G | △ | - | ○ | - | | | |
| | | MELSEC-Q series | For temperature control modules | Screw terminal block | 20P connector | 0.5m | FA-CBLQ64TC05 | △ | - | ○ | - | | | |
| 1m | FA-CBLQ64TC10 | | | | | △ | - | ○ | - | | | | | |
| 2m | FA-CBLQ64TC20 | | | | | △ | - | ○ | - | | | | | |

Analog shielded cable with ferrules ▶ P.124

| Connected to | Specifications | Cable length | Model | Standard | | | |
|--------------------------------------------------------------------------|-----------------------------------------|--------------|------------------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| MELSEC iQ-R/ MELSEC iQ-F series CC-Link IE TSN CC-Link IE Field | Analog shielded cable with ferrules, 2P | 1m | FA1-CB2L10S1B2-4 | △ | - | ○ | - |
| | | 2m | FA1-CB2L20S1B2-4 | △ | - | ○ | - |
| | | 3m | FA1-CB2L30S1B2-4 | △ | - | ○ | - |

Junction terminal blocks for high-speed counter modules

Screw terminal type ▶ P.125

| No. of points | Connection method | Model | Standard | | | |
|---------------|-----------------------------------------------|------------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 40 | M3-screw, for multi-channels, for 5V signals | FA-LTB40D63P6V5 | ○ | ○ | ○ | - |
| | M3-screw, for multi-channels, for 12V signals | FA-LTB40D63P6V12 | ○ | ○ | ○ | - |
| | M3-screw, for multi-channels, for 24V signals | FA-LTB40D63P6V24 | ○ | ○ | ○ | - |

Connection cables ▶ P.125

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | |
|----------------------------------------------|--------------------------------|----------------------------------------|-------------------------------|--------------|----------------|----------|----|------|----|
| | | | | | | UL | CE | RoHS | KC |
| MELSEC-Q series | For multi-channels | MIL 40P | MIL 40P | 0.5m | FA-CBL05QD63P6 | △ | - | ○ | - |
| | | | | 1m | FA-CBL10QD63P6 | △ | - | ○ | - |
| | | | | 1.5m | FA-CBL15QD63P6 | △ | - | ○ | - |
| | | | | 2m | FA-CBL20QD63P6 | △ | - | ○ | - |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | For high-speed counter modules | MIL 40P | MIL 40P | 0.5m | FA-SCBL05FMV-M | △ | - | ○ | - |
| | | | | 1m | FA-SCBL10FMV-M | △ | - | ○ | - |
| | | | | 1.5m | FA-SCBL15FMV-M | △ | - | ○ | - |
| | | | | 2m | FA-SCBL20FMV-M | △ | - | ○ | - |

Junction terminal blocks for positioning modules

Screw terminal type ▶ P.125

| Connected to | Connection method | Model | Standard | | | |
|----------------------------------------------|------------------------------------------------------------------------|-------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | Between positioning module and servo amplifier | FA-LTBQ75DP | ○ | ○ | ○ | - |
| MELSEC-L series | For positioning modules | FA-LTBQ75M | ○ | ○ | ○ | - |
| MELSEC-L series | For the built-in I/O function (positioning function) of the CPU module | FA-PT1LBD | ○ | ○ | ○ | × |

Connection cables ▶ P.125

| Connected to | Specifications | No. of control axes | Cable length | Model | Standard | | | | |
|-------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|--------------|-------------------|-----------------------------|----|------|----|---|
| | | | | | UL | CE | RoHS | KC | |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | Between positioning module and junction terminal block | 2 | 0.5m | FA-CBL05Q7 | △ | - | ○ | - | |
| | | 2 | 1m | FA-CBL10Q7 | △ | - | ○ | - | |
| | Between servo amplifier and junction terminal block | For differential drivers | 2 | 1m | FA-CBLQ7DM1J3 | △ | - | ○ | - |
| | | For transistor outputs | 2 | 1m | FA-CBLQ7PM1J3 | △ | - | ○ | - |
| | | For general-purpose stepping motors and servo amplifiers | 2 | 1m | FA-CBLQ7DG1 | △ | - | ○ | - |
| MR-J5-A MR-J4-A MR-J3-A | Between pulse train positioning module and servo amplifier | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J3 | △ | - | ○ | - |
| | | With manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J3-P | △ | - | ○ | - |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75M2J3-1 | △ | - | ○ | - |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75PM2J3 | △ | - | ○ | - |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75PM2J3-1 | △ | - | ○ | - |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J2 | △ | - | ○ | - |
| MR-J2-A MR-J2S-A MR-J2-03A5 | Between pulse train positioning module and servo amplifier | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J2-P | △ | - | ○ | - |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75M2J2-1 | △ | - | ○ | - |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75PM2J2 | △ | - | ○ | - |
| | | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75PM2J2-1 | △ | - | ○ | - |
| Σ-II/Σ-IIPULS series | Between pulse train positioning module and servo amplifier | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75Y2ΣII [†] | △ | - | ○ | - |
| Σ-III series Σ-V series | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75Y2E3 | △ | - | ○ | - |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75G2 | △ | - | ○ | - |
| | | With manual pulse generator cable | 2 | 2m | FA-CBLQ75G2-P | △ | - | ○ | - |
| General-purpose stepping motor, servo amplifier | Between pulse train positioning module and servo amplifier | Without manual pulse generator cable | 1 | 2m | FA-CBLQ75G2-1 | △ | - | ○ | - |
| | | With manual pulse generator cable | 1 | 2m | FA-CBLQ75G2-1P | △ | - | ○ | - |
| | | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75G2-1P | △ | - | ○ | - |
| MR-J5-A MR-J4-A MR-J3-A | Between CC-Link positioning module and servo amplifier | With manual pulse generator cable | - | 2m | FA-CBLA75M2J3-P | △ | - | ○ | - |
| | | | - | 2m | FA-CBLA75M2J2-P | △ | - | ○ | - |
| MR-J2-A MR-J2S-A MR-J2-03A5 | Between CC-Link positioning module and servo amplifier | With manual pulse generator cable | - | 2m | FA-CBLA75G2D-P | △ | - | ○ | - |
| | | | - | 2m | FA-CBLA75G2P-P | △ | - | ○ | - |
| General-purpose stepping motor, servo amplifier | Between CC-Link positioning module and servo amplifier | With manual pulse generator cable | - | 2m | FA-CBLA75G2D-P | △ | - | ○ | - |
| | | | - | 2m | FA-CBLA75G2P-P | △ | - | ○ | - |
| MELSEC-L series | Between built-in I/O of CPU module and junction terminal block | 2 | 1m | FA-SCBL10FM2LV-LB | △ | - | ○ | - | |

*1: For purchase, the model will be FA-CBLQ75Y2E2.

Digital signal converters (terminal modules)

Digital signal converters for input ▶ P.218

| Control method | Connection method | Module | | Model | Standard | | | | |
|---------------------------------------------------|------------------------------------------|---------------------|--------------------------|--------------|----------------------|----|------|----|---|
| | | Replacement (Shape) | Mixing | | UL | CE | RoHS | KC | |
| Installation base unit (module selectable type) | 4 points, independent | Spring clamp | Possible (function type) | Possible | FA1-TH4X2SC20S1E | ○ | ○ | ○ | - |
| | 8 points, independent | | Possible (function type) | Possible | FA1-TH8X2SC20S1E | ○ | ○ | ○ | - |
| Module pre-mounted type unit (24VDC, N/O contact) | 4 points, independent (positive common) | Spring clamp | Possible (slim type) | 1) | FA1-TH4X24RA1L20S1E | ○ | ○ | ○ | * |
| | 4 points, independent (negative common) | | Possible (slim type) | 1) | FA1-TH4X24RA1H20S1E | ○ | ○ | ○ | * |
| | 8 points, independent (positive common) | | Possible (slim type) | 1) | FA1-TH8X24RA1L20S1E | ○ | ○ | ○ | * |
| | 8 points, independent (negative common) | | Possible (slim type) | 1) | FA1-TH8X24RA1H20S1E | ○ | ○ | ○ | * |
| | 16 points, independent (positive common) | | Possible (slim type) | 1) | FA1-TH16X24RA1H20S1E | ○ | ○ | ○ | - |
| | 16 points, independent (negative common) | | Possible (slim type) | 1) | FA1-TH16X24RA1L20S1E | ○ | ○ | ○ | - |
| | 16 points, independent | Screw (M3) | Possible (slim type) | 1) | FA-TH16XRA20S | ○ | ○ | ○ | - |
| Module built-in type unit (24VDC) | 16 points/common, 2-wire type | Screw (M3) | Not possible | Not possible | FA-TH16X24D31 | ○ | ○ | ○ | - |
| | | Screw (M3.5) | Not possible | Not possible | FA-TH16X24D31L | ○ | ○ | ○ | - |
| Module built-in type unit (48VDC) | 16 points/common, 2-wire type | Screw (M3.5) | Not possible | Not possible | FA-TH16X48D31L | ○ | ○ | ○ | - |
| Module built-in type unit (100VDC) | 16 points/common, 2-wire type | Screw (M3.5) | Not possible | Not possible | FA-TH16X100D31L | ○ | ○ | ○ | - |
| Module built-in type unit (100VAC) | 16 points/common, 2-wire type | Screw (M3) | Not possible | Not possible | FA-TH16X100A31 | ○ | ○ | ○ | - |
| | | Screw (M3.5) | Not possible | Not possible | FA-TH16X100A31L | ○ | ○ | ○ | - |
| Module built-in type unit (200VAC) | 16 points/common, 2-wire type | Screw (M3) | Not possible | Not possible | FA-TH16X200A31 | ○ | ○ | ○ | - |
| | | Screw (M3.5) | Not possible | Not possible | FA-TH16X200A31L | ○ | ○ | ○ | - |

- 1): Only N/O contact and N/C contact modules can be mixed.
 2): Only N/O contact, N/C contact, triac, transistor, and signal pass-through modules can be mixed.
 3): Only N/O contact, N/C contact, triac, and transistor modules can be mixed.

Digital signal converters for output ▶ P.218 to P.219

| Control method | Connection method | Module | | Model | Standard | | | | |
|--------------------------------------------------|---------------------------------|----------------------|----------------------|-----------------|---------------------|----|------|----|---|
| | | Replacement (Shape) | Mixing | | UL | CE | RoHS | KC | |
| Installation base unit (module selectable type) | 4 points, independent (sink) | Spring clamp | Possible (slim type) | 2) | FA1-TH4Y2SC20S1E | ○ | ○ | ○ | * |
| | 8 points, independent (sink) | | Possible (slim type) | 2) | FA1-TH8Y2SC20S1E | ○ | ○ | ○ | * |
| | 4 points, independent (source) | | Possible (slim type) | 2) | FA1-TH1E4Y2SC20S1E | ○ | ○ | ○ | * |
| | 8 points, independent (source) | | Possible (slim type) | 2) | FA1-TH1E8Y2SC20S1E | ○ | ○ | ○ | * |
| | 16 points, independent (sink) | | Possible (slim type) | 2) | FA1-TH16Y2SC20S1E | ○ | ○ | ○ | × |
| | 16 points, independent (source) | | Possible (slim type) | 3) | FA1-TH1E16Y2SC20S1E | ○ | ○ | ○ | × |
| Module pre-mounted type unit (N/O contact relay) | 16 points, independent (sink) | Spring clamp | Possible (slim type) | 2) | FA1-TH16Y2RA20S1E | ○ | ○ | ○ | × |
| | 16 points, independent (source) | | Possible (slim type) | 3) | FA1-TH1E16Y2RA20S1E | ○ | ○ | ○ | × |
| | 16 points, independent (sink) | Screw (M3) | Not possible | Not possible | FA-TH16YRA20 | ○ | ○ | ○ | × |
| | | | Not possible | Not possible | FA-FXTH16YRA20 | × | ○ | ○ | × |
| | | | Possible (slim type) | 2) | FA-TH16YRA20S | ○ | ○ | ○ | × |
| | | | Possible (slim type) | 2) | FA-FXTH16YRA20S | × | ○ | ○ | × |
| | 16 points, independent (source) | Screw (M3.5) | Possible (slim type) | 2) | FA-TH16YRA20SL | ○ | ○ | ○ | × |
| | | | Possible (slim type) | 3) | FA1-TH1E16Y2RA20S | ○ | ○ | ○ | × |
| | | | Not possible | Not possible | FA-TH16YRA11 | ○ | ○ | ○ | × |
| | | | Possible (slim type) | Not possible | FA-TH16YRA11S | ○ | ○ | ○ | × |
| 16 points/common, 1-wire type | Screw (M3) | Possible (slim type) | Not possible | FA-FXTH16YRA11S | × | ○ | ○ | × | |
| | | Not possible | Not possible | FA-TH16YRA21 | × | ○ | ○ | × | |
| | | Possible (slim type) | Not possible | FA-TH16YRA21S | × | ○ | ○ | × | |
| | | Not possible | Not possible | FA-TH16YRA21S | × | ○ | ○ | × | |
| Module pre-mounted type unit (N/C contact relay) | 16 points, independent | Screw (M3.5) | Possible (slim type) | 2) | FA-TH16YRAB20SL | ○ | ○ | ○ | × |
| Module pre-mounted type unit (C/O contact relay) | 16 points, independent | Screw (M3) | Possible (slim type) | Not possible | FA-TH16YRAC20S | ○ | ○ | ○ | × |

<Standard> Please check the conforming standards of the products used together. ○: Compliant, △: Material certificate, ×: Not compliant, --: N/A

| Control method | Connection method | Module | | Model | Standard | | | |
|-------------------------------------------|-------------------|----------------------|--------------|---------------------|----------|----|------|----|
| | | Replacement (Shape) | Mixing | | UL | CE | RoHS | KC |
| Module pre-mounted type unit (triac) | Spring clamp | Possible (slim type) | 2) | FA1-TH16Y1SR20S1E | × | ○ | ○ | × |
| | | | 3) | FA1-TH1E16Y1SR20S1E | × | ○ | ○ | × |
| | Screw (M3) | Possible (slim type) | 2) | FA-TH16YSR20S | × | ○ | ○ | × |
| | | | Not possible | FA-TH16YSR11S | × | ○ | ○ | × |
| | | | Not possible | FA-TH16YSR21S | × | ○ | ○ | × |
| Module pre-mounted type unit (transistor) | Spring clamp | Possible (slim type) | 2) | FA1-TH16Y1TR20S1E | ○ | ○ | ○ | × |
| | | | 3) | FA1-TH1E16Y1TR20S1E | ○ | ○ | ○ | × |
| | Screw (M3) | Possible (slim type) | Not possible | FA-TH16YTL11S | × | ○ | ○ | × |
| | | | Not possible | FA-TH16YTL21S | × | ○ | ○ | × |
| | | | Not possible | FA-TH16YTH11S | × | ○ | ○ | × |
| | | | 2) | FA-TH16YTR20S | × | ○ | ○ | × |
| | | | Not possible | FA-THE16YTH11S | ○ | ○ | ○ | × |
| | | | 3) | FA-THE16YTR20S | ○ | ○ | ○ | × |
| Module built-in type unit (transistor) | Screw (M3) | × | × | FA-TH16Y2TR20 | ○ | ○ | ○ | × |

1): Only N/O contact and N/C contact modules can be mixed.

2): Only N/O contact, N/C contact, triac, transistor, and signal pass-through modules can be mixed.

3): Only N/O contact, N/C contact, triac, and transistor modules can be mixed.

Modules (for replacement/mixing) ▶ P.219

Function type

| Type | Quantity | Model | Standard | | | |
|---------------------------------|----------|----------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 24VDC (relay isolation) | 1 | FA1-TM1X24RA | - | - | ○ | - |
| | 2 | FA1-TM1X24RA-2 | - | - | ○ | - |
| | 4 | FA1-TM1X24RA-4 | - | - | ○ | - |
| 24VDC (photocoupler isolation) | 1 | FA1-TM1X24D | - | - | ○ | - |
| | 2 | FA1-TM1X24D-2 | - | - | ○ | - |
| | 4 | FA1-TM1X24D-4 | - | - | ○ | - |
| 48VDC (photocoupler isolation) | 1 | FA1-TM1X48D | - | - | ○ | - |
| | 2 | FA1-TM1X48D-2 | - | - | ○ | - |
| | 4 | FA1-TM1X48D-4 | - | - | ○ | - |
| 100VDC (photocoupler isolation) | 1 | FA1-TM1X100D | - | - | ○ | - |
| | 2 | FA1-TM1X100D-2 | - | - | ○ | - |
| | 4 | FA1-TM1X100D-4 | - | - | ○ | - |
| 100VAC (photocoupler isolation) | 1 | FA1-TM1X100A | - | - | ○ | - |
| | 2 | FA1-TM1X100A-2 | - | - | ○ | - |
| | 4 | FA1-TM1X100A-4 | - | - | ○ | - |
| 200VAC (photocoupler isolation) | 1 | FA1-TM1X200A | - | - | ○ | - |
| | 2 | FA1-TM1X200A-2 | - | - | ○ | - |
| | 4 | FA1-TM1X200A-4 | - | - | ○ | - |
| Dummy (for dust protection) | 4 | FA1-TM1ND4 | - | - | ○ | - |

Slim type

| Type | Quantity | Model | Standard | | | |
|----------------------------------------------|----------|----------------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| N/O contact relay (24VDC, 100 to 240VAC, 2A) | 2 | FA-NYP24WK2 | - | - | ○ | - |
| | 4 | FA-NYP24WK4 | - | - | ○ | - |
| N/C contact relay (24VDC, 100 to 240VAC, 2A) | 2 | FA-NYBP24WK2 | - | - | ○ | - |
| | 4 | FA-NYBP24WK4 | - | - | ○ | - |
| C/O contact relay (24VDC, 100 to 240VAC, 6A) | 4 | FA-LYCA024VSK4 | - | - | ○ | - |
| Triac (30 to 240VAC, 1A) | 2 | FA-SN24A01FS2 | - | - | ○ | - |
| | 4 | FA-SN24A01FS4 | - | - | ○ | - |
| Transistor (3 to 30VDC, 1A) | 2 | FA-SN24D01H2S2 | - | - | ○ | - |
| | 4 | FA-SN24D01H2S4 | - | - | ○ | - |
| Signal pass-through | 2 | FA-SN00SS2 | - | - | ○ | - |
| | 4 | FA-SN00SS4 | - | - | ○ | - |

Module extraction tools ▶ P.220

| Control method | Model | Standard | | | |
|------------------------------------------------------------------------------|------------|----------|----|------|----|
| | | UL | CE | RoHS | KC |
| Module extraction tool (quantity: 10) | FA-PULL10 | - | - | ○ | - |
| Module extraction tool for C/O contact relay (FA-TH16YRAC20S) (quantity: 10) | FA-PULLW10 | - | - | ○ | - |

Short-circuit bars ▶ P.220

| | Remarks | Model | Standard | | | | |
|-------------------------------|-----------------------------------|----------------------------|----------------|----|------|----|---|
| | | | UL | CE | RoHS | KC | |
| For M3 screw terminal block | Number of poles: 20, quantity: 20 | Without insulating coating | FA-BAR20P-20 | - | - | ○ | - |
| | | With insulating coating | FA-BAR20PG-20 | - | - | ○ | - |
| For M3.5 screw terminal block | Number of poles: 18, quantity: 20 | Without insulating coating | FA-BAR18PL-20 | - | - | ○ | - |
| | | With insulating coating | FA-BAR18PGL-20 | - | - | ○ | - |

Connection cables ▶ P.220

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | | |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------|-------------------------------|--------------------|--------------------|---------------|----|------|----|---|
| | | | | | | UL | CE | RoHS | KC | |
| MELSEC iQ-R/ MELSEC-Q series | Sink, branching on signal converter | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2V | △ | - | ○ | × | |
| | | | | 1m | FA-CBL10FM2V | △ | - | ○ | × | |
| | | | | 1.5m | FA-CBL15FM2V | △ | - | ○ | × | |
| | | | | 2m | FA-CBL20FM2V | △ | - | ○ | × | |
| | | | | 3m | FA-CBL30FM2V | △ | - | ○ | × | |
| | | | | 5m | FA-CBL50FM2V | △ | - | ○ | × | |
| | Sink, branching on programmable controller | FCN 40P | MIL 20P × 2 | 0.6m | FA-CBL06FM2LV | △ | - | ○ | × | |
| | | | | 1m | FA-CBL10FM2LV | △ | - | ○ | × | |
| | | | | 2m | FA-CBL20FM2LV | △ | - | ○ | × | |
| | | | | 3m | FA-CBL30FM2LV | △ | - | ○ | × | |
| | | | | 5m | FA-CBL50FM2LV | △ | - | ○ | × | |
| | Source, branching on signal converter | D-Sub37P | MIL 20P × 2 | 2m | FA-CBL20DM2FY | △ | - | ○ | × | |
| | MELSEC iQ-R/ MELSEC-Q series | - | Terminal block | MIL 20P | 0.6m | FA-CBL06TMV20 | △ | - | ○ | × |
| | | | | | 1m | FA-CBL10TMV20 | △ | - | ○ | × |
| | | | | | 2m | FA-CBL20TMV20 | △ | - | ○ | × |
| 3m | | | | | FA-CBL30TMV20 | △ | - | ○ | × | |
| MELSEC iQ-F/ MELSEC-F series | Sink | MIL 20P | MIL 20P | 0.6m | FA-FXCBL06MMH20 | △ | - | ○ | × | |
| | | | | 1m | FA-FXCBL10MMH20 | △ | - | ○ | × | |
| | | | | 1.5m | FA-FXCBL15MMH20 | △ | - | ○ | × | |
| | | | | 2m | FA-FXCBL20MMH20 | △ | - | ○ | × | |
| | | | | 3m | FA-FXCBL30MMH20 | △ | - | ○ | × | |
| | Source | MIL 20P | MIL 20P | 0.6m | FA2-CB1L06MM1H20E | △ | - | ○ | × | |
| | | | | 1m | FA2-CB1L10MM1H20E | △ | - | ○ | × | |
| | | | | 1.5m | FA2-CB1L15MM1H20E | △ | - | ○ | × | |
| | | | | 2m | FA2-CB1L20MM1H20E | △ | - | ○ | × | |
| | | | | 3m | FA2-CB1L30MM1H20E | △ | - | ○ | × | |
| | Sink, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20 | △ | - | ○ | × | |
| | | | | 2m | FA2-CB1LT20MM1H20 | △ | - | ○ | × | |
| | | | | 3m | FA2-CB1LT30MM1H20 | △ | - | ○ | × | |
| | Source, withstanding -20°C | MIL 20P | MIL 20P | 1m | FA2-CB1LT10MM1H20E | △ | - | ○ | × | |
| | | | | 2m | FA2-CB1LT20MM1H20E | △ | - | ○ | × | |
| 3m | | | | FA2-CB1LT30MM1H20E | △ | - | ○ | × | | |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L/ MELSEC iQ-F series, CC-Link ¹ , non-Mitsubishi PLC | Sink/source shared type | Discrete cable | MIL 20P | 0.6m | FA-CBL06M20 | △ | - | ○ | × | |
| | | | | 1m | FA-CBL10M20 | △ | - | ○ | × | |
| | | | | 2m | FA-CBL20M20 | △ | - | ○ | × | |
| | | Y terminal | MIL 20P | 1m | FA-CBL10YM20 | △ | - | ○ | × | |
| | | | | 2m | FA-CBL20YM20 | △ | - | ○ | × | |
| | | | | 3m | FA-CBL30YM20 | △ | - | ○ | × | |
| CC-Link/LT digital signal converter (terminal module) | - | MIL 20P | MIL 20P | 0.6m | FA-CBL06MMH20 | △ | - | ○ | × | |
| | | | | 1m | FA-CBL10MMH20 | △ | - | ○ | × | |
| | | | | 2m | FA-CBL20MMH20 | △ | - | ○ | × | |
| | | | | 3m | FA-CBL30MMH20 | △ | - | ○ | × | |
| | | | | 5m | FA-CBL50MMH20 | △ | - | ○ | × | |

*: CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, CC-Link

Analog signal converters

Analog signal converters for input ▶ P.288

| | Type | | Model | Standard | | | |
|-----------------------------------------|----------------------------------------------|--------------|-------------------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| Installation base unit | 4-channel, module mixing possible | Spring clamp | FA1-AT1B4X1TE | × | ○ | ○ | × |
| | 4-channel, module mixing possible | Screw (M3) | FA1-AT1B4X1TB | × | ○ | ○ | × |
| | 8-channel, module mixing possible | Screw (M3) | FA-ATB8XTB | ○ | ○ | ○ | × |
| | With connector for adapter | Screw (M3) | FA-ATKB8XTB | ○ | ○ | ○ | × |
| Adapter | Voltage to current conversion adapter | | FA-ATKAA8XM | ○ | ○ | ○ | × |
| Voltage module | 0 to 5V | | FA-ATSVM1XV05 | ○ | ○ | ○ | × |
| | 1 to 5V | | FA-ATSVM1XV15 | ○ | ○ | ○ | × |
| | -10 to 10V | | FA-ATSVM1XV1010 | ○ | ○ | ○ | × |
| Current module | 4 to 20mA | | FA-ATSVM1XA420 | ○ | ○ | ○ | × |
| Distributor module (2-wire transmitter) | 4 to 20mA | | FA-ATSVM1XD | ○ | ○ | ○ | × |
| RTD module | JPt100, -200 to 600°C | | FA-ATSVM1XRJPT | ○ | ○ | ○ | × |
| | Pt100, -200 to 650°C | | FA-ATSVM1XRPT | ○ | ○ | ○ | × |
| | Pt100, 0 to 100°C | | FA-ATSVM1XRPT0010 | ○ | ○ | ○ | × |
| | Pt100, 0 to 200°C | | FA-ATSVM1XRPT0020 | ○ | ○ | ○ | × |
| Thermocouple temperature module | Type B thermocouple, +600 to +1700°C | | FA-ATSVM1XTB | ○ | ○ | ○ | × |
| | Type S thermocouple, 0 to +1600°C | | FA-ATSVM1XTS | ○ | ○ | ○ | × |
| | Type E thermocouple, -200 to +900°C | | FA-ATSVM1XTE | ○ | ○ | ○ | × |
| | Type T thermocouple, -200 to +350°C | | FA-ATSVM1XTT | ○ | ○ | ○ | × |
| | Type R thermocouple, 0 to +1600°C | | FA-ATSVM1XTR | ○ | ○ | ○ | × |
| | Type K thermocouple, -200 to +1200°C | | FA-ATSVM1XTK | ○ | ○ | ○ | × |
| | Type K thermocouple, 0 to 400°C | | FA-ATSVM1XTK0040 | ○ | ○ | ○ | × |
| | Type K thermocouple, 0 to 600°C | | FA-ATSVM1XTK0060 | ○ | ○ | ○ | × |
| | Type K thermocouple, 0 to 800°C | | FA-ATSVM1XTK0080 | ○ | ○ | ○ | × |
| | Type J thermocouple, -40 to +750°C | | FA-ATSVM1XTJ | ○ | ○ | ○ | × |
| Type N thermocouple, -200 to 1250°C | | FA-ATSVM1XTN | ○ | ○ | ○ | × | |
| Pass-through module | Pass-through module for non-isolated signals | | FA-ATFTMX | ○ | ○ | ○ | × |
| Dummy module | For dust protection (quantity: 5) | | FA-ATNDM5 | △ | - | ○ | - |

*: The current is converted to voltage.

Analog signal converters for output ▶ P.288

| | Type | | Model | Standard | | | |
|---------------------------|----------------------------------------------|--------------|-----------------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| Installation base unit | 4-channel, module mixing possible | Spring clamp | FA1-AT1B4Y1TE | × | ○ | ○ | × |
| | 4-channel, module mixing possible | Screw (M3) | FA1-AT1B4Y1TB | × | ○ | ○ | × |
| | 8-channel, module mixing possible | Screw (M3) | FA-ATB8YTB | ○ | ○ | ○ | × |
| Current to voltage module | 0 to 5V | | FA-ATSAM1YV05 | ○ | ○ | ○ | × |
| | 1 to 5V | | FA-ATSAM1YV15 | ○ | ○ | ○ | × |
| | 0 to 10V | | FA-ATSAM1YV010 | ○ | ○ | ○ | × |
| | -10 to 10V | | FA-ATSAM1YV1010 | ○ | ○ | ○ | × |
| Current to current module | 0 to 20mA | | FA-ATSAM1YA020 | ○ | ○ | ○ | × |
| | 4 to 20mA | | FA-ATSAM1YA420 | ○ | ○ | ○ | × |
| Voltage to voltage module | 0 to 5V | | FA-ATSVM1YV05 | ○ | ○ | ○ | × |
| | 1 to 5V | | FA-ATSVM1YV15 | ○ | ○ | ○ | × |
| | 0 to 10V | | FA-ATSVM1YV010 | ○ | ○ | ○ | × |
| | -10 to 10V | | FA-ATSVM1YV1010 | ○ | ○ | ○ | × |
| Voltage to current module | 0 to 20mA | | FA-ATSVM1YA020 | ○ | ○ | ○ | × |
| | 4 to 20mA | | FA-ATSVM1YA420 | ○ | ○ | ○ | × |
| Pass-through module | Pass-through module for non-isolated signals | | FA-ATFTMX | ○ | ○ | ○ | × |
| Dummy module | For dust protection (quantity: 5) | | FA-ATNDM5 | △ | - | ○ | - |

*: The current is converted to voltage.

Connection cables ▶ P.289

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | |
|--------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------|-------------------------------|--------------|-------------------|----------|----|------|----|
| | | | | | | UL | CE | RoHS | KC |
| MELSEC iQ-R/ MELSEC-Q series | 4-channel input | Screw terminal block | MIL 20P | 1m | FA1-CB2L10AT4XV1T | △ | - | ○ | - |
| | | | | 2m | FA1-CB2L20AT4XV1T | △ | - | ○ | - |
| | | | | 3m | FA1-CB2L30AT4XV1T | △ | - | ○ | - |
| | 8-channel input | Screw terminal block | MIL 20P | 1m | FA-CBL10ATQ8XVT | △ | - | ○ | - |
| | | | | 2m | FA-CBL20ATQ8XVT | △ | - | ○ | - |
| | | | | 3m | FA-CBL30ATQ8XVT | △ | - | ○ | - |
| | 4-channel voltage output | Screw terminal block | MIL 20P | 1m | FA1-CB2L10AT4YV1T | △ | - | ○ | - |
| | | | | 2m | FA1-CB2L20AT4YV1T | △ | - | ○ | - |
| | | | | 3m | FA1-CB2L30AT4YV1T | △ | - | ○ | - |
| | 4-channel current output | Screw terminal block | MIL 20P | 1m | FA1-CB2L10AT4YA1T | △ | - | ○ | - |
| | | | | 2m | FA1-CB2L20AT4YA1T | △ | - | ○ | - |
| | | | | 3m | FA1-CB2L30AT4YA1T | △ | - | ○ | - |
| | 8-channel output | Screw terminal block | MIL 20P | 1m | FA-CBL10ATQ8YT | △ | - | ○ | - |
| | | | | 2m | FA-CBL20ATQ8YT | △ | - | ○ | - |
| | | | | 3m | FA-CBL30ATQ8YT | △ | - | ○ | - |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L series | 8-channel input | 20P connector | MIL 20P | 1m | FA-CBL10ATQ8XVA | △ | - | ○ | - |
| | | | | 2m | FA-CBL20ATQ8XVA | △ | - | ○ | - |
| | | | | 3m | FA-CBL30ATQ8XVA | △ | - | ○ | - |
| | 8-channel output | 20P connector | MIL 20P | 1m | FA-CBL10ATQ8YA | △ | - | ○ | - |
| | | | | 2m | FA-CBL20ATQ8YA | △ | - | ○ | - |
| | | | | 3m | FA-CBL30ATQ8YA | △ | - | ○ | - |
| MELSEC iQ-F series | 4-channel input | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT4XV1E | △ | - | ○ | - |
| | | | | 2m | FA2-CB2L20AT4XV1E | △ | - | ○ | - |
| | | | | 3m | FA2-CB2L30AT4XV1E | △ | - | ○ | - |
| | 4-channel voltage output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT4YV1E | △ | - | ○ | - |
| | | | | 2m | FA2-CB2L20AT4YV1E | △ | - | ○ | - |
| | | | | 3m | FA2-CB2L30AT4YV1E | △ | - | ○ | - |
| | 4-channel current output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT4YA1E | △ | - | ○ | - |
| | | | | 2m | FA2-CB2L20AT4YA1E | △ | - | ○ | - |
| | | | | 3m | FA2-CB2L30AT4YA1E | △ | - | ○ | - |
| | 8-channel output | Spring clamp terminal block | MIL 20P | 1m | FA2-CB2L10AT8XV1E | △ | - | ○ | - |
| | | | | 2m | FA2-CB2L20AT8XV1E | △ | - | ○ | - |
| | | | | 3m | FA2-CB2L30AT8XV1E | △ | - | ○ | - |
| CC-Link IE TSN | 4-channel input | Spring clamp terminal block | MIL 20P | 1m | FA3-CB2L10AT4XV1E | △ | - | ○ | - |
| | | | | 2m | FA3-CB2L20AT4XV1E | △ | - | ○ | - |
| | | | | 3m | FA3-CB2L30AT4XV1E | △ | - | ○ | - |
| | 4-channel voltage output | Spring clamp terminal block | MIL 20P | 1m | FA3-CB2L10AT4YV1E | △ | - | ○ | - |
| | | | | 2m | FA3-CB2L20AT4YV1E | △ | - | ○ | - |
| | | | | 3m | FA3-CB2L30AT4YV1E | △ | - | ○ | - |
| | 4-channel current output | Spring clamp terminal block | MIL 20P | 1m | FA3-CB2L10AT4YA1E | △ | - | ○ | - |
| | | | | 2m | FA3-CB2L20AT4YA1E | △ | - | ○ | - |
| | | | | 3m | FA3-CB2L30AT4YA1E | △ | - | ○ | - |
| MELSEC iQ-R/ MELSEC-Q/ MELSEC-L/ MELSEC iQ-F series, CC-Link*, non-Mitsubishi PLC | Input | Discrete cable | MIL 20P | 1m | FA-CBL10ATF | △ | - | ○ | - |
| | | | | 2m | FA-CBL20ATF | △ | - | ○ | - |
| | | | | 3m | FA-CBL30ATF | △ | - | ○ | - |
| | Output | Discrete cable | MIL 20P | 1m | FA-CBL10ATYF | △ | - | ○ | - |
| | | | | 2m | FA-CBL20ATYF | △ | - | ○ | - |
| | | | | 3m | FA-CBL30ATYF | △ | - | ○ | - |
| Analog signal converter (for extension) | 4-channel input | Discrete cable | MIL 20P | 0.5m | FA1-CB2L05AT4EX | △ | - | ○ | - |
| | | | | 1m | FA1-CB2L10AT4EX | △ | - | ○ | - |
| | | | | 2m | FA1-CB2L20AT4EX | △ | - | ○ | - |
| | | | | 3m | FA1-CB2L30AT4EX | △ | - | ○ | - |

*: CC-Link IE TSN, CC-Link IE Field, CC-Link IE Field Basic, CC-Link

Connection cable for extending analog signal converter

| Connected to | Specifications | Programmable controller side connector | Terminal block side connector | Cable length | Model | Standard | | | |
|-----------------------------|-----------------|----------------------------------------|-------------------------------|--------------|-----------------|----------|----|------|----|
| | | | | | | UL | CE | RoHS | KC |
| For M3 screw terminal block | 4-channel input | MIL 20P | MIL 20P | 0.5m | FA1-CB2L05AT4EX | △ | - | ○ | - |
| | | | | 1m | FA1-CB2L10AT4EX | △ | - | ○ | - |
| | | | | 2m | FA1-CB2L20AT4EX | △ | - | ○ | - |
| | | | | 3m | FA1-CB2L30AT4EX | △ | - | ○ | - |

Short-circuit bars ▶ P.289

| Connected to | Specifications | Remarks | Model | Standard | | | |
|-----------------------------|-----------------------------------|----------------------------|---------------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| For M3 screw terminal block | Number of poles: 20, quantity: 20 | Without insulating coating | FA-BAR20P-20 | - | - | ○ | - |
| | | With insulating coating | FA-BAR20PG-20 | - | - | ○ | - |

Conversion adapter ▶ P.289

| No. of points | Remarks | Model | Standard | | | |
|---------------|------------------------------------------------|----------|----------|----|------|----|
| | | | UL | CE | RoHS | KC |
| 18 | Conversion of screw terminals to 20P connector | FA-Q6TCA | - | - | ○ | - |

Small-scale IoT (network interface modules)

Network interface modules ▶ P.320

| Type | Specifications | | Dedicated cable | Model | Standard | | | | |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------|------------------------------------------|------------------|------------------|----|------|----|----|
| | | | | | UL | CE | RoHS | KC | |
| CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) MODBUS/TCP | For digital signal converter | Input type | Included | FA3-TH1M16XC-01C | ○ | ○* | ○ | ○* | |
| | | Output type (sink) | | FA3-TH1M16Y-01C | ○ | ○* | ○ | ○* | |
| | | Output type (source) | | FA3-TH1M16YE-01C | ○ | ○* | ○ | ○* | |
| | | Input type | Not included (Use an optional cable.) | FA3-TH1M16XC | ○ | ○* | ○ | ○* | |
| | | Output type (sink) | | FA3-TH1M16Y | ○ | ○* | ○ | ○* | |
| | | Output type (source) | | FA3-TH1M16YE | ○ | ○* | ○ | ○* | |
| | For analog signal converter | Input type | Included | FA3-AT1M8X-01C | ○ | ○* | ○ | ○* | |
| | | Output type | | FA3-AT1M8Y-01C | ○ | ○* | ○ | ○* | |
| | | Input type | Not included (Use an optional cable.) | FA3-AT1M8X | ○ | ○* | ○ | ○* | |
| | | Output type | | FA3-AT1M8Y | ○ | ○* | ○ | ○* | |
| | CC-Link IE TSN CC-Link IE Field CC-Link IE Field Basic SLMP (standard Ethernet) | For digital signal converter | Input type | Included | FA3-TH1T16XC-01C | ○ | ○* | ○ | ○* |
| | | | Output type (sink) | | FA3-TH1T16Y-01C | ○ | ○* | ○ | ○* |
| Output type (source) | | | FA3-TH1T16YE-01C | | ○ | ○* | ○ | ○* | |
| Input type | | | Not included (Use an optional cable.) | FA3-TH1T16XC | ○ | ○* | ○ | ○* | |
| Output type (sink) | | | | FA3-TH1T16Y | ○ | ○* | ○ | ○* | |
| Output type (source) | | | | FA3-TH1T16YE | ○ | ○* | ○ | ○* | |
| For analog signal converter | | Input type | Included | FA3-AT1T8X-01C | ○ | ○* | ○ | ○* | |
| | | Output type | | FA3-AT1T8Y-01C | ○ | ○* | ○ | ○* | |
| | | Input type | Not included (Use an optional cable.) | FA3-AT1T8X | ○ | ○* | ○ | ○* | |
| | | Output type | | FA3-AT1T8Y | ○ | ○* | ○ | ○* | |
| CC-Link | | For digital signal converter | Input type | Included | FA3-TH1C16XC-01C | ○ | ○* | ○* | ○* |
| | | | Output type (sink) | | FA3-TH1C16Y-01C | ○ | ○* | ○* | ○* |
| | Output type (source) | | FA3-TH1C16YE-01C | | ○ | ○* | ○* | ○* | |
| | Input type | | Not included (Use an optional cable.) | FA3-TH1C16XC | ○ | ○ | ○ | ○ | |
| | Output type (sink) | | | FA3-TH1C16Y | ○ | ○ | ○ | ○ | |
| | Output type (source) | | | FA3-TH1C16YE | ○ | ○ | ○ | ○ | |
| | For analog signal converter | Input type | Included | FA3-AT1C8X-01C | ○ | ○* | ○* | ○* | |
| | | Output type | | FA3-AT1C8Y-01C | ○ | ○* | ○* | ○* | |
| | | Input type | Not included (Use an optional cable.) | FA3-AT1C8X | ○ | ○ | ○ | ○ | |
| | | Output type | | FA3-AT1C8Y | ○ | ○ | ○ | ○ | |

*: Only the module complies with the standard. This standard is not applicable to the included cable.

Cables for network interface modules ▶ P.320

| Connected to | Specifications | Cable length | Model | Standard | | | |
|------------------|--------------------------------------|--------------|------------------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| Signal converter | Extension cable for signal converter | 1m | FA3-CB2L10MM1H20 | △ | - | ○ | - |
| | | 2m | FA3-CB2L20MM1H20 | △ | - | ○ | - |
| | | 3m | FA3-CB2L30MM1H20 | △ | - | ○ | - |

Communication cables and cables for HMIs (GOTs)

Communication converter cables ▶ P.328

| Product | Specifications | RS-232 side connector | RS-422 side connector | Cable length | Model | Standard | | | |
|-----------------------------------|-------------------------------------------------------------|-----------------------|------------------------------------|--------------|---------------|----------|----|------|----|
| | | | | | | UL | CE | RoHS | KC |
| RS-232 to RS-422 conversion cable | For converting RS-232 to RS-422 and extending wiring length | Mini DIN6P male | D-Sub25P female (millimeter screw) | 0.2m | FA-CNV2402CBL | × | - | ○ | × |
| | | | | 0.5m | FA-CNV2405CBL | × | - | ○ | × |

<Standard> Please check the conforming standards of the products used together. ○: Compliant, △: Material certificate, ×: Not compliant, -: N/A

Communication cables ▶ P.328

| Product | Specifications | Computer side connector | CPU (module) side connector | Cable length | Model | Standard | | | |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------|--------------|---------------|----------|----|------|----|
| | | | | | | UL | CE | RoHS | KC |
| RS-422 cable | For using with a communication conversion cable to extend cable length | D-Sub25P female (millimeter screw) | D-Sub25P male (millimeter screw metal fitting) | 20m | FA-CBL20R4 | △ | - | ○ | - |
| | | | | 30m | FA-CBL30R4 | △ | - | ○ | - |
| | | | | 50m | FA-CBL50R4 | △ | - | ○ | - |
| RS-232 cable | For connecting MELSEC-Q/L series CPU module and computer or HMI | D-Sub9P female (inch screw) | Mini DIN6P male | 3m | FA-CBLQC30R2 | △ | - | ○ | - |
| | | | | 5m | FA-CBLQC50R2 | △ | - | ○ | - |
| | | | | 8m | FA-CBLQC80R2 | △ | - | ○ | - |
| | | | | 15m | FA-CBLQC150R2 | △ | - | ○ | - |
| RS-232 cable | For connecting MELSEC-Q/L series CPU module and HMI (with D-Sub25P connector) or other devices | D-Sub25P male (millimeter screw) | Mini DIN6P male | 3m | FA-CBL25P6P30 | △ | - | ○ | - |
| | | | | 5m | FA-CBL25P6P50 | △ | - | ○ | - |
| RS-232 panel-mount extension cable (1.0m) | For connecting to the CPU module without opening the control panel | Mini DIN6P female | Mini DIN6P male | 1m | FA-CBL6S6P10 | △ | - | ○ | - |
| | | | | 3m | FA-CBL6S6P30 | △ | - | ○ | - |
| | | | | 5m | FA-CBL6S6P50 | △ | - | ○ | - |
| RS-232 cable | For connecting computer and computer link/serial communication module or intelligent communication module | D-Sub9P female (inch screw) | D-Sub9P male (millimeter screw) | 3m | FA-CBL9S9P30 | △ | - | ○ | - |
| | | | | 5m | FA-CBL9S9P50 | △ | - | ○ | - |
| | | | | 15m | FA-CBL9S9P150 | △ | - | ○ | - |
| USB cable | For connecting computer | Terminal A | Terminal B | 3m | FA-CBL30USB | △ | - | ○ | - |

Conversion cables ▶ P.328

| Product | Specifications | Optical transducer side connector | Connected device side connector | Cable length | Model | Standard | | | |
|------------------|---------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------|--------------|---------------|----------|----|------|----|
| | | | | | | UL | CE | RoHS | KC |
| Conversion cable | For connecting optical transducer and computer | D-Sub25P female (millimeter screw metal fitting) | D-Sub9P female (inch screw) | 0.2m | FA-CBL25S9S | △ | - | ○ | - |
| | For connecting optical transducer and computer link/serial communication module | D-Sub25P female (millimeter screw metal fitting) | D-Sub9P male (millimeter screw) | 0.2m | FA-CBL25S9P | △ | - | ○ | - |
| | For connecting optical transducer and MELSEC-Q/L CPU module (mini DIN6P) | D-Sub25P female (millimeter screw metal fitting) | Mini DIN6P male | 0.2m | FA-CBL25S6P | △ | - | ○ | - |
| | For connecting optical transducer and the QJ71C24N (RS-485 screw terminal type) | D-Sub25P female (millimeter screw metal fitting) | M3 round solderless terminal | 0.2m | FA-CBL25S5T02 | △ | - | ○ | - |

Cables for HMIs (GOTs) ▶ P.328

| Specifications | Cable length | Model | Standard | | | | |
|---------------------------------------------------------|--------------------------|-------|------------------|----|------|----|---|
| | | | UL | CE | RoHS | KC | |
| RS-485 connector and junction terminal block with cable | For GT16 models | 0.5m | FA-LTBGTR4CBL05 | △ | - | ○ | - |
| | | 1m | FA-LTBGTR4CBL10 | △ | - | ○ | - |
| | | 2m | FA-LTBGTR4CBL20 | △ | - | ○ | - |
| | For GT27 and GT25 models | 0.5m | FA-LTBGT2R4CBL05 | △ | - | ○ | - |
| | | 1m | FA-LTBGT2R4CBL10 | △ | - | ○ | - |
| | | 2m | FA-LTBGT2R4CBL20 | △ | - | ○ | - |

Servo amplifier junction terminal blocks

FLS/RLS/DOG signal-specialized network amplifier terminal blocks ▶ P.348

| No. of points | Connection method | No. of control axes | Model | Standard | | | |
|---------------|------------------------------------------------------|---------------------|-----------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| 15 | Dedicated for FLS/RLS/DOG signals, spring clamp type | 1 | DG2SV2TB | ○ | ○ | ○ | × |
| 24 | Dedicated for FLS/RLS/DOG signals, spring clamp type | 2 | DG2SV2TB2 | ○ | ○ | ○ | × |
| 33 | Dedicated for FLS/RLS/DOG signals, spring clamp type | 3 | DG2SV2TB3 | ○ | ○ | ○ | × |

Junction terminal blocks for servo motors with brakes ▶ P.348

| No. of points | Connection method | No. of control axes | Model | Standard | | | |
|---------------|----------------------------------------------------------------------------------------|---------------------|------------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| 15 | For servo motors with brakes, spring clamp type, sink type | 1 | DG2BK1TB | ○ | ○ | ○ | × |
| | For servo motors with brakes, spring clamp type, sink type, DIN rail installation only | 1 | DG2BK1TB-D | ○ | ○ | ○ | × |

Network amplifier junction terminal block ▶ P.348

| No. of points | Connection method | No. of control axes | Model | Standard | | | |
|---------------|-------------------------------------------------------------------------------|---------------------|----------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| 26 | For network-based servo amplifier, spring clamp type, sink/source shared type | 1 | DG2SV3TB | ○ | ○ | ○ | × |

General-purpose interface amplifier junction terminal block ▶ P.348

| No. of points | Connection method | No. of control axes | Model | Standard | | | |
|---------------|-------------------------------------------------------------------------------------------|---------------------|----------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| 60 | For general-purpose interface servo amplifier, spring clamp type, sink/source shared type | 1 | DG2SV1TB | ○ | ○ | ○ | × |

Junction terminal block for network-connectable positioning modules ▶ P.348

| No. of points | Connection method | No. of control axes | Model | Standard | | | |
|---------------|------------------------------------------|----------------------------------------------|------------|----------|----|------|----|
| | | | | UL | CE | RoHS | KC |
| 40 | For positioning modules, screw (M3) type | 2 (Use 2 terminal blocks to control 4 axes.) | FA-LTBQ75M | ○ | ○ | ○ | -- |

Connection cables ▶ P.348

| Connected to | Specifications | No. of control axes | Cable length | Model | Standard | | | | |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------|------------------|------------------|----|------|----|----|
| | | | | | UL | CE | RoHS | KC | |
| Servo amplifier | For network amplifiers | 1 | 0.5m | DG4SV2CB05 | × | -- | × | × | |
| | | | 1m | DG4SV2CB10 | × | -- | × | × | |
| | 5m | | DG4SV2CB50 | × | -- | × | × | | |
| | 5m | | DG4SV2CB50H | × | -- | × | × | | |
| | 10m | | DG4SV2CB100H | × | -- | × | × | | |
| | For network amplifiers, long bending life | | 2-axis/3-axis servo amplifier | 0.5m | DG4SV3CB05 | × | -- | × | × |
| | | 1m | | DG4SV3CB10 | × | -- | × | × | |
| | | 5m | | DG4SV3CB50 | × | -- | × | × | |
| | For FLS/RLS/DOG signal terminal blocks, for sink | 1 | 0.5m | DG4SV2CB05-P01 | × | -- | × | × | |
| | | | 1m | DG4SV2CB10-P01 | × | -- | × | × | |
| | | | 5m | DG4SV2CB50-P01 | × | -- | × | × | |
| | | | 2-axis/3-axis servo amplifier | 0.5m | DG4SV3CB05-P01 | × | -- | × | × |
| | | | | 1m | DG4SV3CB10-P01 | × | -- | × | × |
| | | | | 5m | DG4SV3CB50-P01 | × | -- | × | × |
| | For FLS/RLS/DOG signal terminal blocks, for source | 2-axis/3-axis servo amplifier | 5m | DG4SV3CB50H | × | -- | × | × | |
| | | | 10m | DG4SV3CB100H | × | -- | × | × | |
| For FLS/RLS/DOG signal terminal blocks, for sink long bending life | 1 | 5m | DG4SV2CB50H-P01 | × | -- | × | × | | |
| | | 10m | DG4SV2CB100H-P01 | × | -- | × | × | | |
| | | 2-axis/3-axis servo amplifier | 5m | DG4SV3CB50H-P01 | × | -- | × | × | |
| | | | 10m | DG4SV3CB100H-P01 | × | -- | × | × | |
| | | | For general-purpose interface amplifiers | 0.5m | DG4SV1CB05 | × | -- | × | × |
| | | 1m | | DG4SV1CB10 | × | -- | × | × | |
| SSCNET-compatible hydraulic control unit | For the junction terminal block for SSCNET-compatible hydraulic control units | 1 | 0.5m | DG4AF3CB05 | × | -- | × | × | |
| | | | 1m | DG4AF3CB10 | × | -- | × | × | |
| Positioning module | For the junction terminal block between positioning modules and network-connectable positioning modules | 2 | 0.5m | FA-CBL05Q7 | △ | -- | ○ | -- | |
| | | | 1m | FA-CBL10Q7 | △ | -- | ○ | -- | |
| | For connecting positioning modules and servo amplifiers (MR-J5-A/J4-A series) | Without manual pulse generator cable | 2 | 2m | FA-CBLQ75M2J3 | △ | -- | ○ | -- |
| | | | | 2m | FA-CBLQ75M2J3-P | △ | -- | ○ | -- |
| | | With manual pulse generator cable | 1 | 2m | FA-CBLQ75M2J3-1 | △ | -- | ○ | -- |
| | | | | 2m | FA-CBLQ75PM2J3-1 | △ | -- | ○ | -- |
| Without manual pulse generator cable | 2 | 2m | FA-CBLQ75PM2J3 | △ | -- | ○ | -- | | |

Model: Alphabetical index

| No. | Model | Refer to |
|-----|---------------------|----------|
| 1 | DG2BK1TB | P. 354 |
| 2 | DG2BK1TB-D | P. 354 |
| 3 | DG2SV1TB | P. 358 |
| 4 | DG2SV2TB | P. 349 |
| 5 | DG2SV2TB2 | P. 349 |
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Please confirm the following product warranty details prior to product use.

Gratis Warranty Terms and Gratis Warranty Range

If any fault or defect (hereinafter referred to as "Failure") attributable to Mitsubishi Electric Engineering should occur within the gratis warranty period, Mitsubishi Electric Engineering shall repair the product free of charge via the distributor from whom you made your purchase.

Should the repair require a business trip, a charge will be incurred for the expense required for the dispatch of an engineer (domestic support only).

Further, onsite readjustments and testing associated with failed module replacement shall be outside the scope of responsibility of Mitsubishi Electric Engineering.

■ Gratis Warranty Period

The gratis warranty period of this product shall be one (1) year from the date of purchase or delivery to the designated place.

Note that after manufacture and shipment from Mitsubishi Electric Engineering, the maximum distribution period shall be six (6) months, and the gratis warranty period after manufacturing shall be limited to eighteen (18) months. Further, the gratis warranty period for repaired products shall not exceed the gratis warranty period of the product prior to repair.

■ Gratis Warranty Range

- (1) The gratis warranty range shall be limited to normal use based on the usage conditions, methods and environment, etc., defined by the terms and precautions, etc., given in the instruction manual, user's manual, and caution labels on the product.
- (2) In the following cases, a repair fee shall be applied even if within the gratis warranty period.
 - 1) Failure resulting from inappropriate storage or handling, carelessness or negligence by the user, or Failure caused by the user's hardware or software design.
 - 2) Failure caused by unapproved modifications, etc., to the product by the user.
 - 3) Failure that could have been avoided if, when the Mitsubishi Electric Engineering product was assembled into the user's device, safeguards defined by legal regulations applicable to the user's device or functions or structures considered standard by the industry had been provided.
 - 4) Failure recognized as preventable if the consumed products specified in instruction manuals, etc., were normally maintained or replaced.
 - 5) Failure caused by external factors beyond anyone's control such as fires or abnormal voltage, and Failure caused by Force Majeure such as earthquakes, lightning, or wind and water damage.
 - 6) Failure caused by reasons unpredictable by scientific technology standards at the time of shipment from Mitsubishi Electric Engineering.
 - 7) Any other failure not attributable to Mitsubishi Electric Engineering or found by the user to not be attributable to Mitsubishi Electric Engineering.

Onerous repair term after discontinuation of production

- (1) The period in which product repair (fee applied) is available is seven (7) years after product discontinuation.
Discontinuation of production shall be reported by Mitsubishi Electric Engineering sales services.
- (2) Product supply (including spare parts) is not possible after production has been discontinued.

Overseas Services

Please consult your dealer where you purchased Mitsubishi Electric Engineering products.

Exclusion of opportunity loss and secondary loss from warranty liability

Regardless of the gratis warranty period, Mitsubishi Electric Engineering shall not be liable for compensation for damages arising from causes not attributable to Mitsubishi Electric Engineering, opportunity losses or lost profits incurred by the user due to Failures of Mitsubishi Electric Engineering products, damages or secondary damages arising from special circumstances, whether foreseen or unforeseen by Mitsubishi Electric Engineering, compensation for accidents, compensation for damages to products other than Mitsubishi Electric Engineering products, or compensation for replacement work, readjustment of onsite machinery and equipment, startup test runs or other duties carried out by the user.

Changes in product specifications

The specifications given in the catalogs, manuals, and technical documents are subject to change without notice.

Product application

- (1) This product shall be used in applications that will not lead to a major accident even in the unlikely event any failure or defect should occur in the product in which the product is incorporated, and shall be systematically provided with external backup and fail-safe functions that operate in the event of any failure or defect.
- (2) This product has been designed and manufactured as a general-purpose product for general industry applications, etc. The product shall be excluded from use in applications in which the public could be greatly affected such as the applications of the nuclear and other power plants operated by the respective power companies, and applications in which a special quality assurance system is required, such as the applications of railway companies or government or other public offices. The product shall also be excluded from use in aircraft, medical applications, incineration and fuel devices, manned transport devices, equipment for recreation and amusement, and safety devices, in which human life or assets could be greatly affected. Notwithstanding the above, restrictions Mitsubishi Electric Engineering may in its sole discretion, authorize use of the product in one or more of the Prohibited Applications, provided that the usage of the product is limited only for the specific applications agreed to by Mitsubishi Electric Engineering and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the products are required. For details, please contact the Mitsubishi Electric Engineering representative in your region.

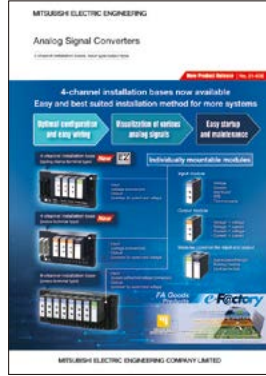
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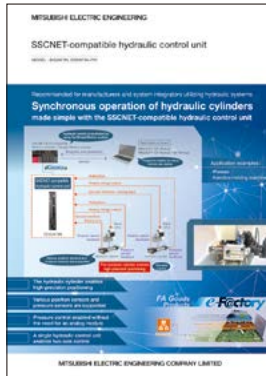


Leaflets

Spring clamp junction terminal block for Mitsubishi Electric AC servo system



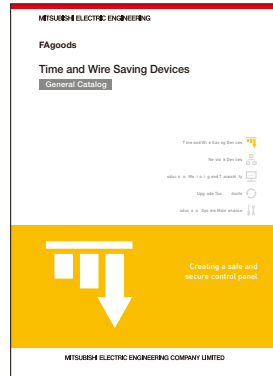
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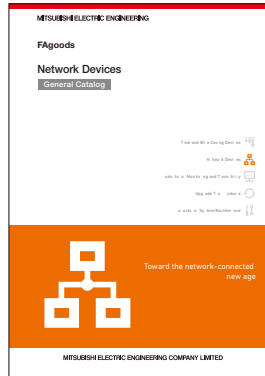
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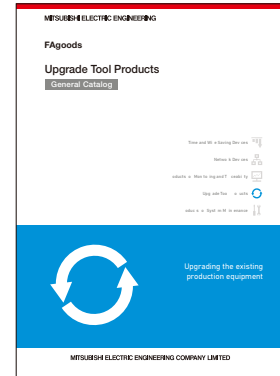
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NAGOYA ENGINEERING OFFICE | 1-9, Daiko-Minami, 1-Chome, Higashi-ku, Nagoya, Aichi 461-0047 Japan

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For safe use

- To use the products given in this publication properly, always read the relevant manuals before beginning operation.
- The products have been manufactured as general-purpose parts for general industries, and are not designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the products for special purposes such as nuclear power, electric power, aerospace, medicine or passenger-carrying vehicles, consult with Mitsubishi Electric Engineering.
- The products have been manufactured under strict quality control. However, when installing the products where major accidents or losses could occur if the products fail, install appropriate backup or fail-safe functions in the system.