

Type 1 Output type for solenoid valves

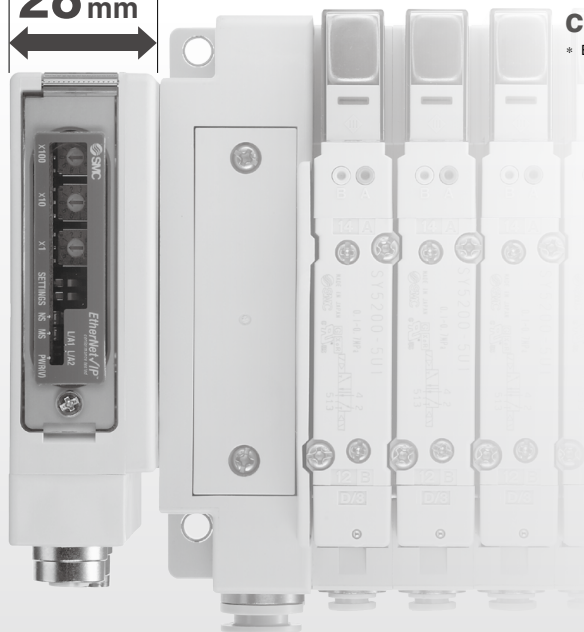
Fieldbus System (Output device for driving 5-port solenoid valves)

EX260 Series

Space-saving installation

Compact Approx.

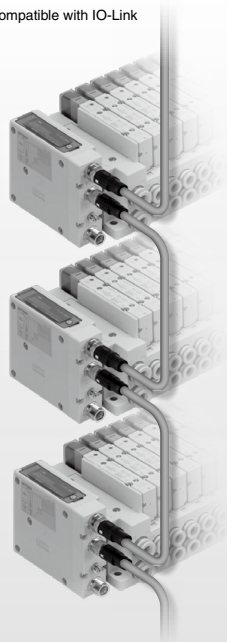
28 mm



* Only the SV and SV valves are UL-compliant.

- IO-Link compatible
- IP67
 - * For units with a D-sub connector, and when connected to S0700 manifolds, it is IP40.
- Drives up to 32 solenoids
- Daisy-chain wiring communication

* Excludes the units compatible with IO-Link



<Compatible Protocols>



DeviceNet



IO-Link



EtherNet/IP

EtherCAT

ETHERNET POWERLINK

Made to Order

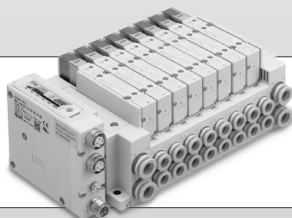


CANopen

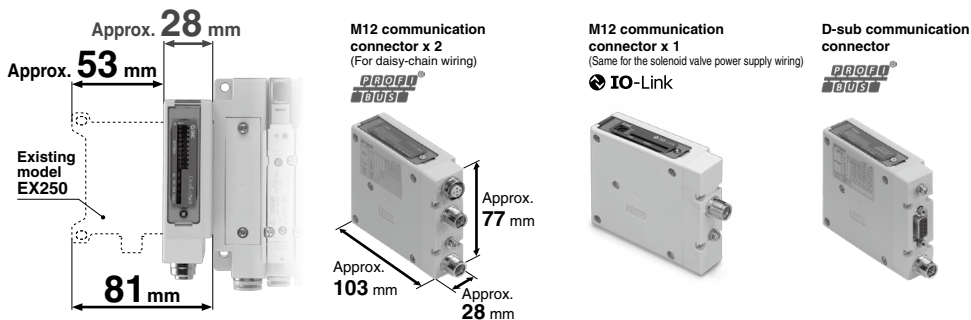
Please contact SMC for details on compatible products.

Compliant with functional safety standards (PROFIsafe compatible)

- Product certification obtained by a third party (IEC 61508/62061 SIL 3, ISO 13849 PL e Cat. 3)
- Safety output for valve control



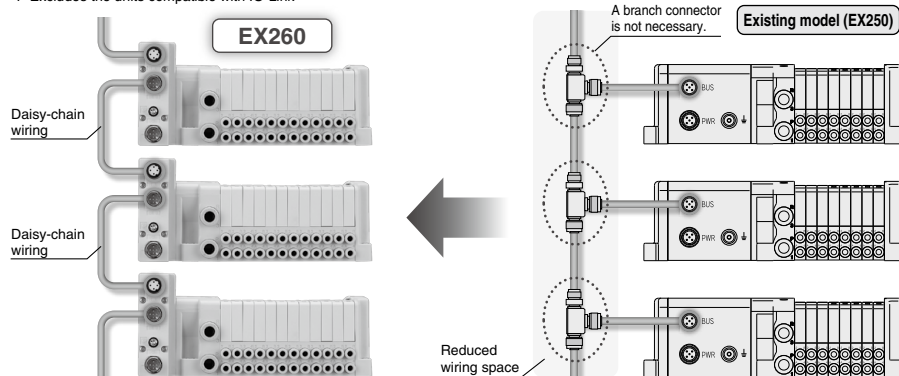
Manifold length reduced by approx. 53 mm



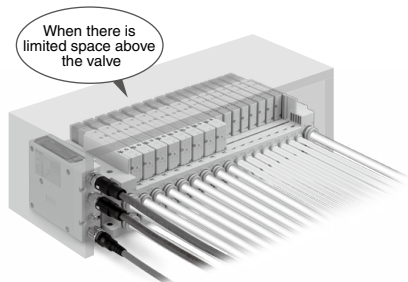
Daisy-chain wiring communication is possible.*1

A branch connector is not necessary/Reduced wiring space

*1 Excludes the units compatible with IO-Link



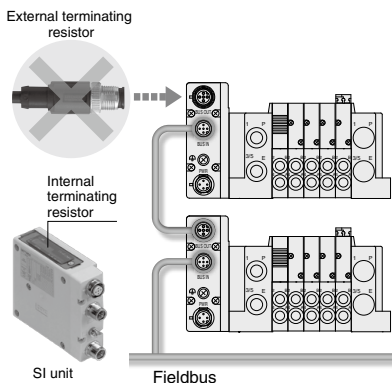
Wiring and piping from the same direction is possible. (for side ported)










An external terminating resistor is not necessary.

(Only available for M12 PROFIBUS DP, CC-Link communication connectors)











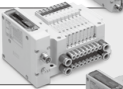











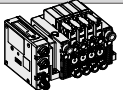

ON/OFF switching is possible with an internal terminating resistor. An external terminating resistor is not necessary.





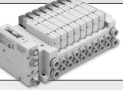







Product Specification Variations

								
Number of outputs	16	●	●	●	●	●	●	●
	32	●	●	●	●	●	●	●
Output polarity	PNP	●	●	●	●	●	●	●
	NPN	●	●	●	●	●	●	●
Communication connector	M12	●	●	●	●	●	●	●
	D-sub	●	●	●	●	●	●	●

Applicable Valve Series and Compatible Protocols

Fieldbusses & Industrial Ethernet							
Applicable valve	Flow rate characteristics (4/2 → 5/3)		Max. number of solenoids	Power consumption [W]	Applicable cylinder size		
	C [dm ³ /(s·bar)]	b					
 IP67*1	 	SY3000	1.6	0.19	32	0.35 (Standard) 0.1 (With power-saving circuit)	ø50
		SY5000	3.6	0.17			ø63
		SY7000	5.9	0.20			ø80
 IP67*1,*2	 	JSY1000	0.91	0.48	32	0.2 (With power-saving circuit) 0.4 (Standard) 0.1 (With power-saving circuit)	ø40
		JSY3000	2.77	0.27			ø50
		JSY5000	6.59	0.22			ø80
 IP40	 	S0700*3	0.37	0.39	32	0.35	ø25
 IP67*1	 	SV1000*3	1.1	0.35	32	0.6	ø40
		SV2000*3	2.4	0.18			ø63
		SV3000*3	4.3	0.21			ø80
 IP67*1	 	VQC1000	1.0	0.30	24	0.4 (Standard) 0.95 (Standard) 0.4 (Low-wattage type)	ø40
		VQC2000	3.2	0.30			ø63
		VQC4000	7.3	0.38			ø160
		VQC5000	17	0.31			ø180
Applicable vacuum unit		Nozzle diameter [mm]		Max. number of solenoids	Power consumption [W]	Max. vacuum pressure [kPa]	
 IP40	 	0.7					16
		1.0					
		1.2					
		1.5					

Safety Communication  The use of validated products may be required for valve manifolds used in the safety-related parts of equipment which is compliant with safety standard ISO 13849. For validated products, please contact your SMC sales representative.

Applicable valve	Flow rate characteristics (4/2 → 5/3)		Max. number of solenoids	Power consumption [W]	Applicable cylinder size		
	C [dm ³ /(s·bar)]	b					
 IP67	 	SY3000	1.6	0.19	32	0.35 (Standard) 0.1 (With power-saving circuit)	ø50
		SY5000	3.6	0.17			ø63
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 IP67*2	 	JSY1000	0.91	0.48	32	0.2 (With power-saving circuit) 0.4 (Standard) 0.1 (With power-saving circuit)	ø40
		JSY3000	2.77	0.27			ø50
		JSY5000	6.59	0.22			ø80
 IP67	 	VQC1000	1.0	0.30	24	0.4 (Standard) 0.95 (Standard) 0.4 (Low-wattage type)	ø40
		VQC2000	3.2	0.30			ø63
		VQC4000	7.3	0.38			ø160
		VQC5000	17	0.31			ø180

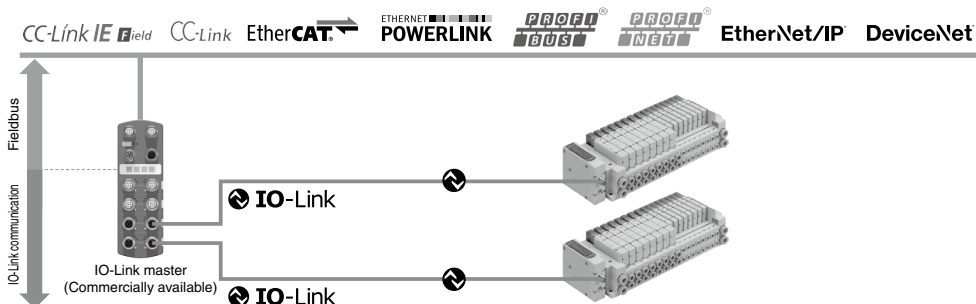
*1 Units with a D-sub communication connector are IP40.
 *2 The JSY1000 is IP40.
 *3 There is no manifold part number setting for the IO-Link compatible SI units.

IO-Link compatible

Integratable with various existing networks

IO-Link devices can be easily connected to various networks via the IO-Link master, which acts as a gateway between IO-Link communication and various Fieldbuses.

Solenoid valves can be connected for communication without relying upon a Fieldbus or PLC.



Can be connected using a single general-purpose cable, resulting in a reduction in the space required for wiring

Port class B

IO-Link master (Commercially available)

- Connect the IO-Link master port to the device using a 1:1 configuration.
- Connect using an M12 round connector.
- Maximum cable length: 20 m
- Special communication cables are not necessary.
- In order to connect the SI unit using a single cable, use a port class B type IO-Link master.



Port class B compliant

Port class A

IO-Link master (Commercially available)

General-purpose 5-wire unshielded cables are used for connection. The signal wire and valve power supply wire can be connected with the same cable.

SI unit/Connector pin arrangement

Pin no.	SI unit port pin function (Port class B)
1	+24 V for control unit
2	+24 V for solenoid valve
3	0 V for control unit
4	IO-Link communication
5	0 V for solenoid valve

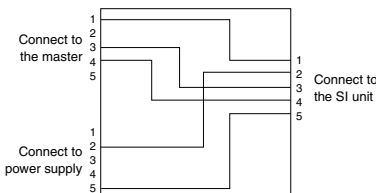
Y Branch Connector

Port class A compliant

A special wiring Y branch connector is available.



Used when connecting to a port class A type IO-Link master, which is often used when connecting to an IO-Link sensor

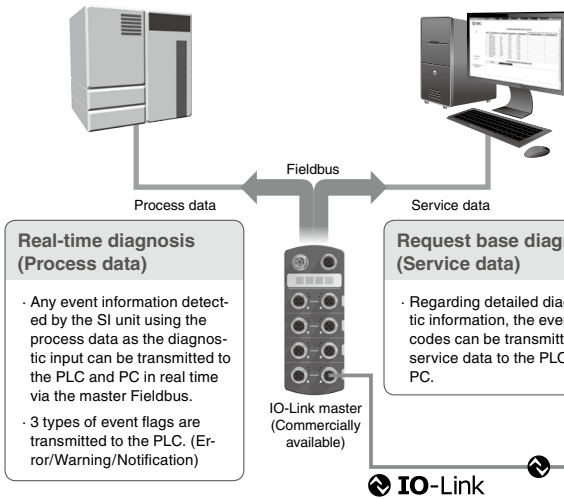


Difference between IO-Link master port class A and class B

Pin no.	IO-Link master port pin function	
	Port class A	Port class B
1	+24 V	+24 V
2	NC/DI/DO	Additional power supply +24 V
3	0 V	0 V
4	IO-Link/DI/DO	IO-Link/DI/DO
5	NC	Additional power supply 0 V

IO-Link compatible

Features an impressive self-diagnosis function



Self-diagnosis contents

Diagnostic contents	Event category
Internal failure of the SI unit	Error
Output short circuit	Error
Output open circuit	Error
Solenoid valve power supply failure	Warning
Abnormal internal temperature of the SI unit	Warning
Output switching count value exceeded	Notification

Equipped with a solenoid valve output operation count function

The number of valve operation instructions is counted for each output of the solenoid valve.

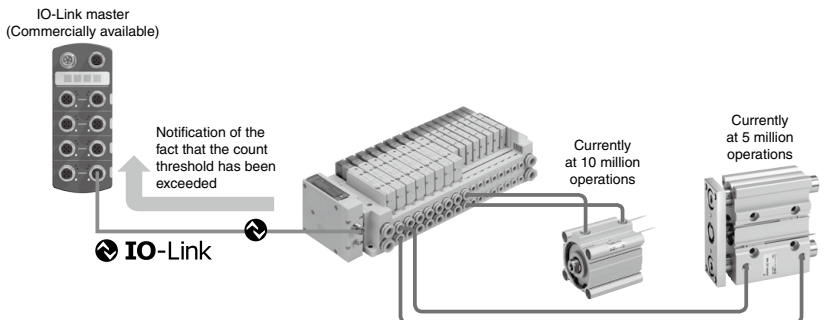
Set the count threshold value to be used as a guide for maintenance according to the operating conditions of the cylinder connected to the solenoid valve.



Once the threshold value is reached, notification of this fact will take place automatically.



This enables periodic maintenance to be performed before any unexpected cylinder failures occur.



Supports safety communication (PROFIsafe) <EX260-FPS1>



PROFIsafe is established as an international standard (IEC 61784-3-3). It is a communication protocol that transmits safety-related data by PROFINET communication and can be used up until safety standards ISO 13849-1 PL e and IEC 61508/IEC 62061 SIL 3.



PROFINET/PROFIsafe compatible PLC



PROFINET/PROFIsafe



EX260-FPS1
(PROFIsafe compatible SI unit)



EX260-SPN
(PROFINET compatible SI unit)

A PROFIsafe compatible PLC allows for the use of a PROFINET compatible SI unit and a PROFIsafe compatible SI unit to be used on one communication line at the same time.

Compliant with safety standards

This product (EX260-FPS1) is intended to facilitate safe machine and system designing (ISO/IEC standard compliance) and has been certified by a third party (TÜV Rheinland) for use up until the standards listed below.



IEC 61508/IEC 62061 SIL 3
ISO 13849 PL e/Cat. 3

· SIL (Safety Integrity Level)

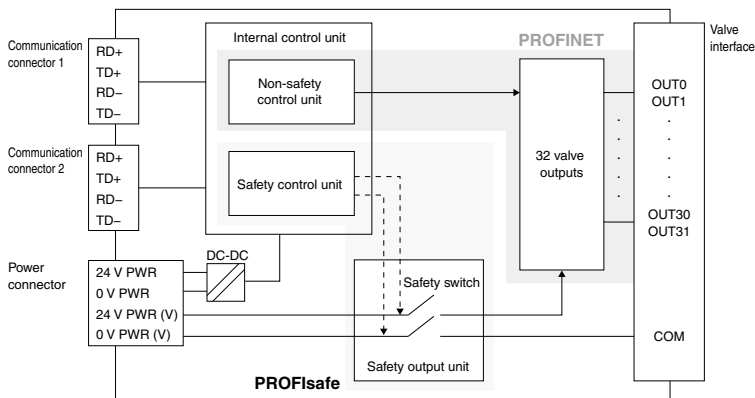
A safety integrity level as defined by international standard IEC 61508/62061
There are 4 levels of safety, with the lowest being SIL 1 and the highest being SIL 4.

· PL (Performance Level)

A scale used to define the capability of safety-related parts to perform a safety function as defined by international standard ISO 13849
There are 5 levels of safety function, with the lowest being PL a and the highest being PL e.

Safety Output

This product (EX260-FPS1) has a safety switch inside the product. It shuts off the voltage supplied to the valve by turning OFF the safety switch via directive from the PLC to enter safe state. The safety switch of this product (EX260-FPS1) has two redundancies, one on the 24 V side and the other on the 0 V side. It continuously runs diagnostics. The safety switch is turned OFF in the event of an error detection.



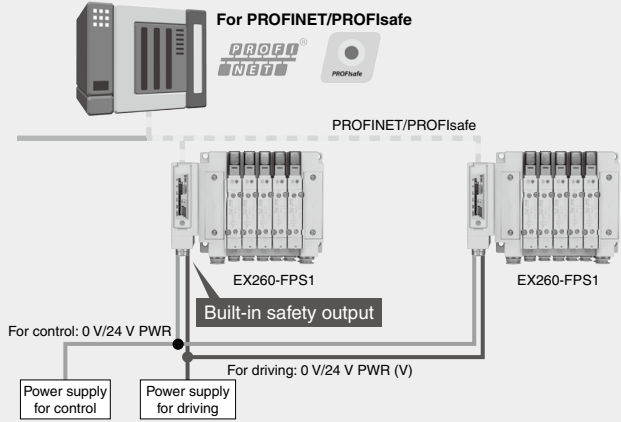
⚠ Safety Definition

The safe state of this product (EX260-FPS1) is a condition in which the safety output described above is turned OFF to shut off the supply of power to the valve manifold.
This product does not cover valve manifolds that are being used in connection with this product or the safety function and safe state of electric/air equipment that includes a peripheral circuit.

Reduced wiring, Space saving

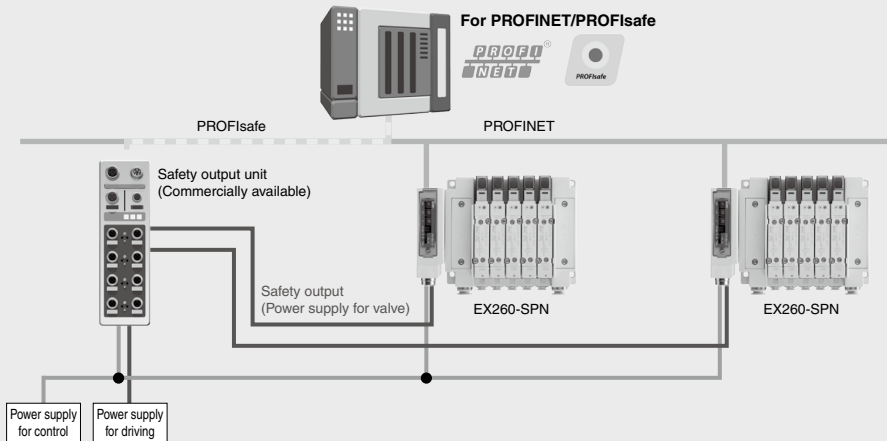
For built-in safety output (EX260-FPS1)

- A separate safety output unit is not required. (Space saving)
- There is no need for wiring between the safety output unit and the EX260-FPS1. (Reduced wiring)



When a separate safety output unit is installed (Conventional connection example)

- A separate safety output unit is required. (Increased installation space)
- Increased wiring is required for connection with another unit. (Increased wiring)



⚠ Safety of the machine or system

The manufacturer of the machine/system and its user are responsible for the safety of the machine/system. Use of this product (EX260-FPS1) requires machine/system safety concepts which are in accordance with the corresponding directives and standards, safety function validation, and hazard and risk analysis. Target SILs (IEC 61508/62061 compliance) and performance levels/categories (ISO 13849 compliance) are determined based on the risk analysis. For more information, refer to the "Safety of the machine or system" section in the operation manual of the EX260-FPS1.

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Dimensions	p. 1323
Parts Description	p. 1324
LED Indicator	p. 1325

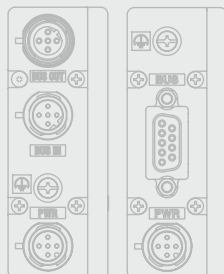
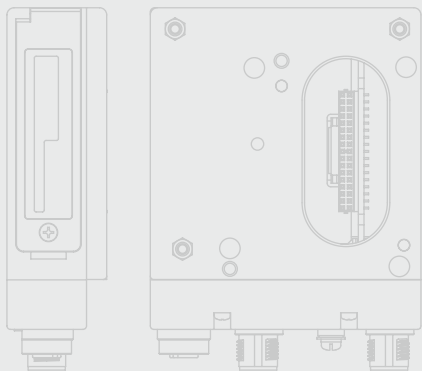
Accessories

① Communication Cable	p. 1326
② Field-wireable Communication Connector	p. 1332
③ Power Supply Cable (For SI unit)	p. 1333
④ Power Supply Cable (For SI unit/For power block) ..	p. 1334
⑤ Seal Cap (10 pcs.)	p. 1334
⑥ Output Block	p. 1335
⑦ Power Block	p. 1335
⑧ Connector for Output Block Wiring	p. 1336
⑨ End Plate	p. 1336
⑩ Bracket Plate/DIN Rail Mounting Bracket	p. 1336

Made to Order

SI Unit	
EtherNet/IP™ Web server function compatible ...	p. 1337
Communication Cable	p. 1337
Power Supply Cable	p. 1338

Specific Product Precautions	p. 1339
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Fieldbus System For Output

EX260 Series



Compact design

Compact design for space saving

Number of outputs

32/16 digital output type available for each unit in the series
(IO-Link and PROFIsafe are only compatible with the 32-point digital output type.)

Output polarity

Negative common (PNP)/positive common (NPN) type available for each unit in the series
(Only negative common (PNP) is available for Ethernet POWERLINK, IO-Link, and PROFIsafe.)

Enclosure

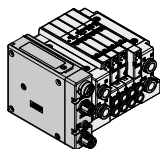
IP67 (For units with a D-sub connector, and when connected with S0700 manifolds, it is IP40.)

Internal terminating resistor

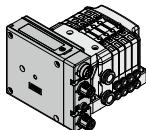
ON/OFF switching is possible with an internal terminating resistor for communication.
(Only for units compatible with M12 PROFIBUS DP, CC-Link communication connectors)

Applicable Manifold

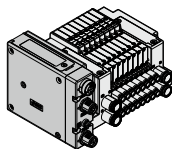
SY3000/5000/7000



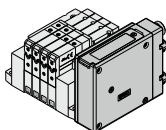
S0700



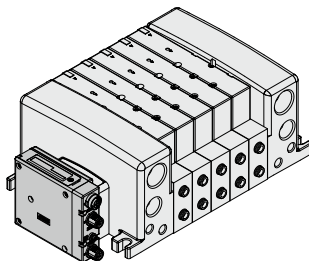
JSY1000/3000/5000



SV1000/2000/3000

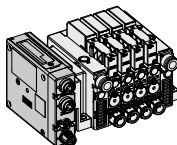


VQC1000/2000/4000/5000



Applicable Vacuum Unit

ZK2□A



How to Order SI Units

EX260 - S **PR1**

Communication protocol

Symbol	Protocol	Number of outputs	Output polarity	Communication connector	Manifold symbol	Applicable manifold/Vacuum unit
DN1	DeviceNet®	32	Source/PNP (Negative common)	M12	QAN	SY3000/5000/7000 JSY1000/3000/5000 VQC1000/2000/4000/5000 S0700 SV1000/2000/3000 ZK2□A
DN2			Sink/NPN (Positive common)		QA	
DN3		16	Source/PNP (Negative common)		QBN	
DN4			Sink/NPN (Positive common)		QB	
PR1	PROFIBUS DP	32	Source/PNP (Negative common)	M12	NAN	
PR2			Sink/NPN (Positive common)		NA	
PR3		16	Source/PNP (Negative common)		NBN	
PR4			Sink/NPN (Positive common)		NB	
PR5		32	Source/PNP (Negative common)	D-sub*1	NCN	
PR6			Sink/NPN (Positive common)		NC	
PR7		16	Source/PNP (Negative common)		NDN	
PR8			Sink/NPN (Positive common)		ND	
MJ1	CC-Link	32	Source/PNP (Negative common)	M12	VAN	
MJ2			Sink/NPN (Positive common)		VA	
MJ3		16	Source/PNP (Negative common)		VBN	
MJ4			Sink/NPN (Positive common)		VB	
EC1	EtherCAT	32	Source/PNP (Negative common)	M12	DAN	
EC2			Sink/NPN (Positive common)		DA	
EC3		16	Source/PNP (Negative common)		DBN	
EC4			Sink/NPN (Positive common)		DB	
PN1	PROFINET	32	Source/PNP (Negative common)	M12	FAN	
PN2			Sink/NPN (Positive common)		FA	
PN3		16	Source/PNP (Negative common)		FBN	
PN4			Sink/NPN (Positive common)		FB	
EN1	EtherNet/IP™	32	Source/PNP (Negative common)	M12	EAN	
EN2			Sink/NPN (Positive common)		EA	
EN3		16	Source/PNP (Negative common)		EBN	
EN4			Sink/NPN (Positive common)		EB	
PL1	Ethernet POWERLINK	32	Source/PNP (Negative common)	M12	GAN	
PL3		16			GBN	
IL1	IO-Link	32	Source/PNP (Negative common)	M12	KAN	SY3000/5000/7000 JSY1000/3000/5000 VQC1000/2000/4000/5000 ZK2□A

*1 Enclosure is IP40 when the communication connector is D-sub.



Made to Order

→ p. 1337

EtherNet/IP™ LAN cable connectable RJ45 communication connectors
EtherNet/IP™ Web server function compatible

* For "How to Order Manifold Assembly," refer to the **Web Catalog** of each valve.

Safety communication compliant SI unit

EX260 - F **PS1**

Communication protocol

Symbol	Protocol	Number of outputs	Output polarity	Communication connector	Manifold symbol	Applicable manifold
PS1	PROFIsafe	32	Source/PNP (Negative common)	M12	FPN	SY3000/5000/7000 JSY1000/3000/5000 VQC1000/2000/4000/5000

* The use of validated products may be required for valve manifolds used in the safety-related parts of equipment which is compliant with safety standard ISO 13849. For validated products, please contact your SMC sales representative.

Specifications

All SI Units Common Specifications

Power supply for control	Power supply voltage	21.6 to 26.4 VDC*1
	Internal current consumption	100 mA or less*4
Power supply for output	Power supply voltage	22.8 to 26.4 VDC
	Enclosure	IP67*2
Environmental resistance	Operating temperature range	-10 to +50°C
	Operating humidity range	35 to 85% RH (No condensation)
	Withstand voltage	500 VAC for 1 minute between terminals and housing
	Insulation resistance	10 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing
Standards	CE/UKCA marking, UL (CSA) compliant	
Weight		200 g
	Mounting screw	2 pcs.
Accessories	Seal cap (for M12 connector socket)	EX9-AWTS (1 pc.)*3

*1 To serve as the power supply for communication, the power supply voltages are 11 to 25 VDC for the EX260-SDN□, 18 to 30 VDC for the EX260-SIL1, and 20.4 to 28.8 VDC for the EX260-FPS1.

*2 IP40 applies to EX260-SPR5/6/7/8.

*3 Not provided for EX260-SPR5/6/7/8

*4 200 mA or less for the EX260-FPS1

Model	EX260-SPR1/3	EX260-SPR2/4	EX260-SPR5/7	EX260-SPR6/8	EX260-SDN1/3	EX260-SDN2/4	
Applicable system	Protocol	PROFIBUS DP				DeviceNet®	
	Version*1	DP-V0				Volume 1 (Edition 3.5) Volume 3 (Edition 1.5)	
	Configuration file*3	GSD file				EDS file	
I/O occupation area (Inputs/Outputs)	SPR1: 0/32 SPR3: 0/16	SPR2: 0/32 SPR4: 0/16	SPR5: 0/32 SPR7: 0/16	SPR6: 0/32 SPR8: 0/16	SDN1: 0/32 SDN3: 0/16	SDN2: 0/32 SDN4: 0/16	
Applicable function	—				QuickConnect™		
Communication speed	9.6 k/19.2 k/45.45 k/93.75 k/187.5 k/500 k/1.5 M/3 M/6 M/12 Mbps				125 k/250 k/500 kbps		
Communication connector specification	M12			D-sub*4		M12	
Terminating resistor switch	Built-in			None			
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	SPR1: 32 points SPR3: 16 points	SPR2: 32 points SPR4: 16 points	SPR5: 32 points SPR7: 16 points	SPR6: 32 points SPR8: 16 points	SDN1: 32 points SDN3: 16 points	SDN2: 32 points SDN4: 16 points
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)					
	Supplied voltage	24 VDC					
	Supplied current	SPR1: Max. 2.0 A SPR3: Max. 1.0 A	SPR2: Max. 2.0 A SPR4: Max. 1.0 A	SPR5: Max. 2.0 A SPR7: Max. 1.0 A	SPR6: Max. 2.0 A SPR8: Max. 1.0 A	SDN1: Max. 2.0 A SDN3: Max. 1.0 A	SDN2: Max. 2.0 A SDN4: Max. 1.0 A

Model	EX260-SMJ1/3	EX260-SMJ2/4	EX260-SEC1/3	EX260-SEC2/4	EX260-SPN1/3	EX260-SPN2/4	
Applicable system	Protocol	CC-Link		EtherCAT*2		PROFINET*2	
	Version*1	Ver. 1.10		Conformance Test Record V.1.1		PROFINET Specification Version 2.2	
	Configuration file*3	CSP+ file		XML file		GSD file	
I/O occupation area (Inputs/Outputs)	SMJ1: 32/32 SMJ3: 32/32 (1 station, remote I/O stations)	SMJ2: 32/32 SMJ4: 32/32 (1 station, remote I/O stations)	SEC1: 0/32 SEC3: 0/16	SEC2: 0/32 SEC4: 0/16	SPN1: 0/32 SPN3: 0/16	SPN2: 0/32 SPN4: 0/16	
Applicable function	—				FSU, MRP		
Communication speed	156 k/625 k/2.5 M/5 M/10 Mbps			100 Mbps*2			
Communication connector specification	M12						
Terminating resistor switch	Built-in			None (Not required)			
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	SMJ1: 32 points SMJ3: 16 points	SMJ2: 32 points SMJ4: 16 points	SEC1: 32 points SEC3: 16 points	SEC2: 32 points SEC4: 16 points	SPN1: 32 points SPN3: 16 points	SPN2: 32 points SPN4: 16 points
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)				Solenoid valve with surge voltage suppressor 24 VDC, 1.0 W or less (SMC)	
	Supplied voltage	24 VDC					
	Supplied current	SMJ1: Max. 2.0 A SMJ3: Max. 1.0 A	SMJ2: Max. 2.0 A SMJ4: Max. 1.0 A	SEC1: Max. 2.0 A SEC3: Max. 1.0 A	SEC2: Max. 2.0 A SEC4: Max. 1.0 A	SPN1: Max. 2.0 A SPN3: Max. 1.0 A	SPN2: Max. 2.0 A SPN4: Max. 1.0 A

*1 Please note that the version is subject to change.

*2 Use a CAT5 or higher communication cable for EtherCAT, PROFINET, Ethernet/IP™, and Ethernet POWERLINK.

*3 The configuration file can be downloaded from the SMC website: <https://www.smcworld.com>

*4 Enclosure is IP40 when the communication connector is D-sub.

EX260 Series

Specifications

Model		EX260-SEN1/3	EX260-SEN2/4	EX260-SPL1	EX260-SPL3	EX260-SIL1	EX260-FPS1	
Applicable system	Protocol	EtherNet/IP™*2		Ethernet POWERLINK		IO-Link	PROFINET/ PROFIsafe*2	
	Version*1	Volume 1 (Edition 3.17) Volume 2 (Edition 1.18)		EPG DS 301 Version 1.2.0		V1.1	PROFINET Specification Version 2.3 PROFIsafe Specification Version 2.4	
	Configuration file*3	EDS file		XDD file		IODD file	GSD file	
I/O occupation area (Inputs/Outputs)	SEN1: 16/32 SEN3: 16/16	SEN2: 16/32 SEN4: 16/16	16/32	16/16	0/32 16/32*4	0/32*5		
Applicable function	QuickConnect™, DLR		—		—	FSU, Shared Device, MRP		
Communication speed	10 M/100 Mbps*2		100 Mbps*2		COM3/COM2*4	100 Mbps*2		
Communication connector specification	M12							
Terminating resistor switch	None (Not required)							
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)				
	Number of outputs	SEN1: 32 points SEN3: 16 points	SEN2: 32 points SEN4: 16 points	32	16	32		
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)					Solenoid valve with surge voltage suppressor 24 VDC, 0.95 W or less (SMC)	
	Supplied voltage	24 VDC						
Supplied current	SEN1: Max. 2.0 A SEN3: Max. 1.0 A	SEN2: Max. 2.0 A SEN4: Max. 1.0 A	Max. 2 A	Max. 1 A	Max. 2 A	Max. 1.3 A		

*1 Please note that the version is subject to change.

*2 Use a CAT5 or higher communication cable for PROFINET, PROFIsafe, EtherNet/IP™, and Ethernet POWERLINK.

*3 The configuration file can be downloaded from the SMC website: <https://www.smcworld.com>

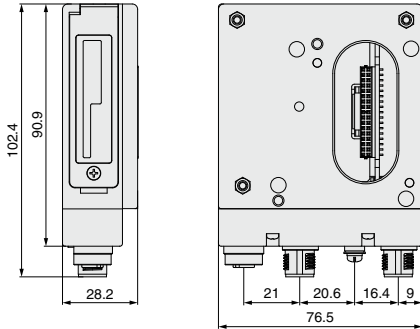
*4 A selection can be made using the setting switch.

*5 In addition, it occupies input 4 bite/output 5 bite for safety.

Dimensions

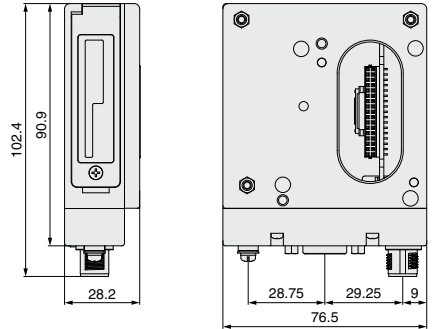
M12 communication connector type

- For PROFIBUS DP For DeviceNet®
For CC-Link For EtherCAT For PROFINET
For EtherNet/IP™ For Ethernet POWERLINK



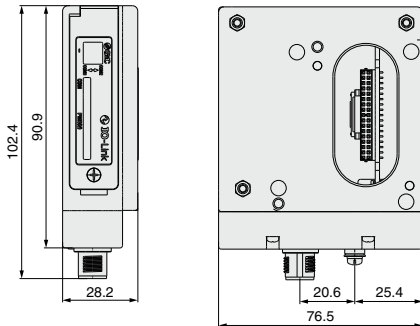
D-sub communication connector type (EX260-SPR5/6/7/8)

- For PROFIBUS DP



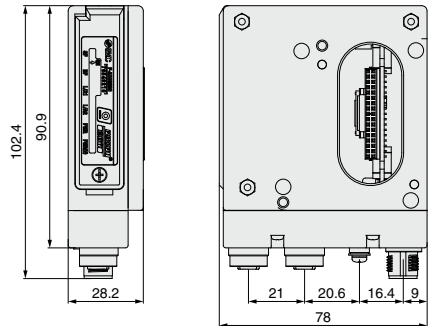
M12 communication connector type

- For IO-Link



M12 communication connector type

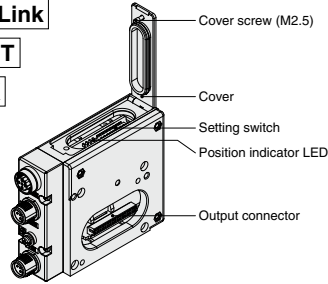
- For PROFI-safe



EX260 Series

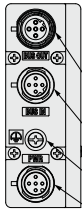
Parts Description

For PROFIBUS DP For DeviceNet® For CC-Link
 For PROFIsafe For EtherCAT For PROFINET
 For EtherNet/IP™ For Ethernet POWERLINK



* The setting switch varies depending on the model.
 Refer to the operation manual for details.
 It can be downloaded via the SMC website: <https://www.smcworld.com>

<Connector> M12 communication connector type

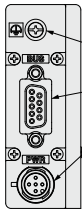


Part no.	EX260-SPR1/-SPR2 -SPR3/-SPR4	EX260-SDN□	EX260-SMJ□	EX260-SEC□ EX260-SPN□ EX260-SEN□ EX260-SPL□ EX260-FPS1
Communication protocol	PROFIBUS DP	DeviceNet®	CC-Link	EtherCAT PROFINET EtherNet/IP™ EtherNet POWERLINK PROFIsafe
Communication connector (M12) BUS OUT	5 pins, socket, B code (SPEEDCON)	5 pins, socket, A code (SPEEDCON)	5 pins, socket, A code*1 (SPEEDCON)	4 pins, socket, D code (SPEEDCON)
Communication connector (M12) BUS IN	5 pins, plug, B code (SPEEDCON)	5 pins, plug, A code (SPEEDCON)	4 pins, plug, A code (SPEEDCON)	4 pins, socket, D code (SPEEDCON)
Ground terminal	M3			
Power connector (M12)	5 pins, plug, A code (SPEEDCON)	4 pins, plug, A code (SPEEDCON)	5 pins, plug, B code (SPEEDCON)	5 pins*2, 4 pins*3, plug, A code (SPEEDCON)

*1 Recommended mating M12 4-pin plug part no.: PCA-1567717

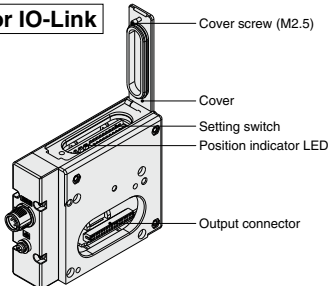
*2 For EtherCAT, PROFINET, and Ethernet POWERLINK
 *3 For EtherNet/IP™ and PROFIsafe

<Connector> D-sub communication connector type

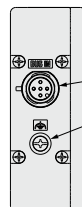


Part no.	EX260-SPR5/-SPR6/-SPR7/-SPR8
Communication protocol	PROFIBUS DP
Ground terminal	M3
Communication connector (D-sub) BUS IN/OUT	9 pins, socket
Power connector (M12)	5 pins, plug, A code

For IO-Link



<Connector>



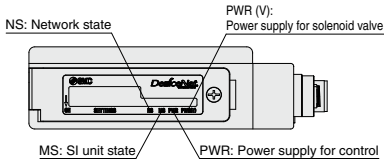
Part no.	EX260-SIL1
Communication protocol	IO-Link
Communication/Power connector (M12)	5 pins, plug,*1 A code (SPEEDCON)
Ground terminal	M3

*1 The communication line, SI unit power supply line, and the solenoid valve power supply line are connected using the same cable.

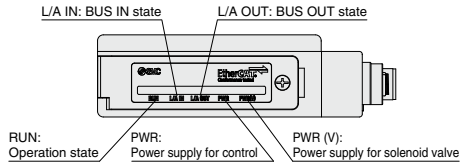
* The setting switch varies depending on the model.
 Refer to the operation manual for details.
 It can be downloaded via the SMC website: <https://www.smcworld.com>

LED Indicator

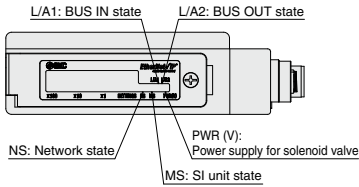
For DeviceNet® EX260-SDN



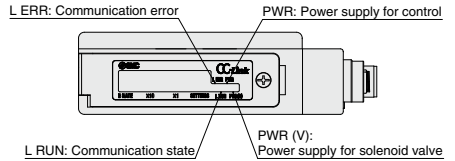
For EtherCAT EX260-SEC



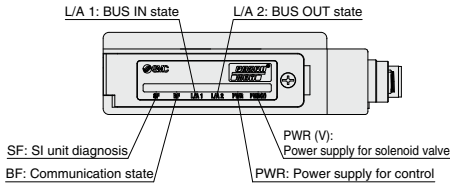
For EtherNet/IP™ EX260-SEN



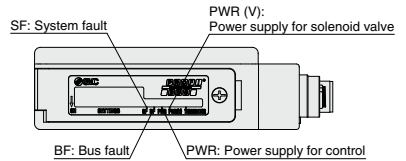
For CC-Link EX260-SMJ



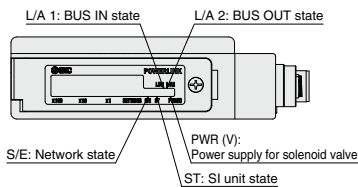
For PROFINET EX260-SPN



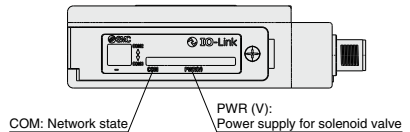
For PROFIBUS DP EX260-SPR



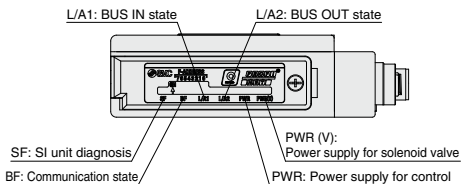
For Ethernet POWERLINK EX260-SPL



For IO-Link EX260-SIL1



For PROFIsafe EX260-FPS1



EX260 Series Accessories

① Communication Cable

For CC-Link

PCA-1567720
(Socket)



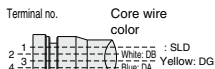
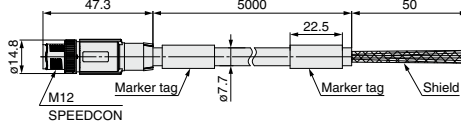
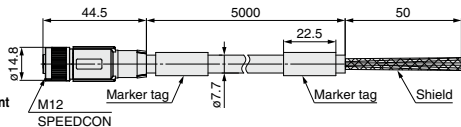
Socket connector pin arrangement
A-coded (Normal key)

≠1 Number of holes: 5,
Total number of pins: 4

PCA-1567717
(Plug)



Plug connector pin arrangement
A-coded (Normal key)



Connections

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm ² /AWG20
	Drain	0.34 mm ² /AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm



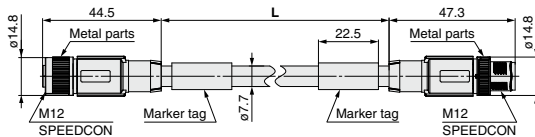
Made to Order

Cable length	10000 mm	p. 1337
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EX9-AC [005] MJ-SSPS (With connector on both sides (Socket/Plug))

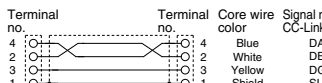
● Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Socket connector pin arrangement
A-coded (Normal key)

≠1 Number of holes: 5,
Total number of pins: 4



Connections



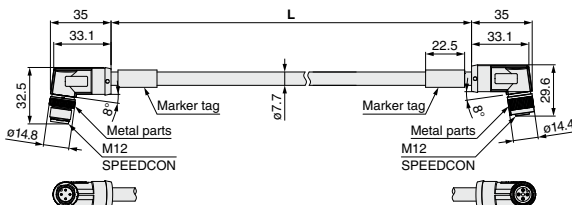
Plug connector pin arrangement
A-coded (Normal key)

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm ² /AWG20
	Drain	0.34 mm ² /AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm

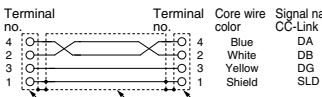
EX9-AC [005] MJ-SAPA (With angled connector on both sides (Socket/Plug))

● Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Plug connector pin arrangement
A-coded (Normal key)



Connections



Socket connector pin arrangement
A-coded (Normal key)

≠1 Number of holes: 5,
Total number of pins: 4

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm ² /AWG20
	Drain	0.34 mm ² /AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm

1 Communication Cable

For DeviceNet®

PCA-1557633
(Socket)

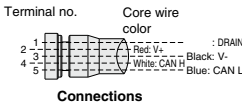
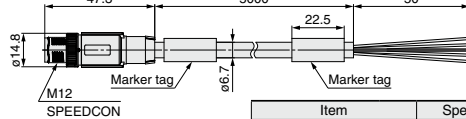
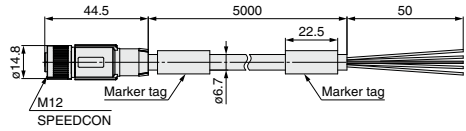


Socket connector pin arrangement A-coded (Normal key)

PCA-1557646
(Plug)



Plug connector pin arrangement A-coded (Normal key)



Item		Specifications
Cable O.D.		ø6.7 mm
Conductor nominal cross section	Power pair	0.34 mm ² /AWG22
	Data pair	0.25 mm ² /AWG24
Wire O.D. (including insulator)	Power pair	1.4 mm
	Data pair	2.05 mm
Min. bending radius (Fixed)		67 mm



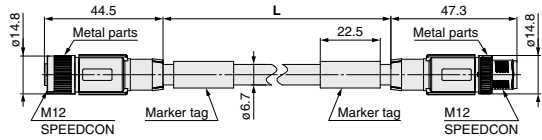
Made to Order

Cable length	10000 mm	p. 1337
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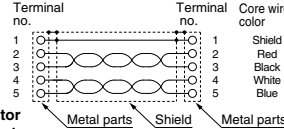
EX9-AC [005] DN-SSPS (With connector on both sides (Socket/Plug))

Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Socket connector pin arrangement A-coded (Normal key)



Connections



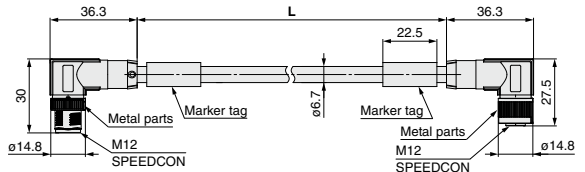
Plug connector pin arrangement A-coded (Normal key)

Item		Specifications
Cable O.D.		ø6.7 mm
Conductor nominal cross section	Power pair	0.34 mm ² /AWG22
	Data pair	0.25 mm ² /AWG24
Wire O.D. (including insulator)	Power pair	1.4 mm
	Data pair	2.05 mm
Min. bending radius (Fixed)		67 mm

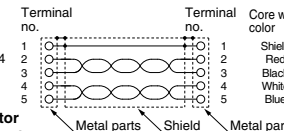
EX9-AC [005] DN-SAPA (With angled connector on both sides (Socket/Plug))

Cable length (L)

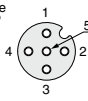
005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Plug connector pin arrangement A-coded (Normal key)



Connections



Socket connector pin arrangement A-coded (Normal key)

Item		Specifications
Cable O.D.		ø6.7 mm
Conductor nominal cross section	Power pair	0.34 mm ² /AWG22
	Data pair	0.25 mm ² /AWG24
Wire O.D. (including insulator)	Power pair	1.4 mm
	Data pair	2.05 mm
Min. bending radius (Fixed)		67 mm

EX260 Series

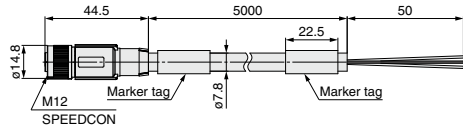
1 Communication Cable

For PROFIBUS DP

PCA-1557688
(Socket)



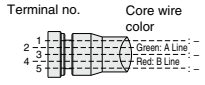
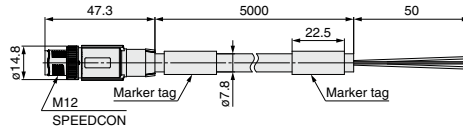
Socket connector
pin arrangement
B-coded (Reverse key)



PCA-1557691
(Plug)



Plug connector
pin arrangement
B-coded (Reverse key)



Connections

Item	Specifications
Cable O.D.	ø7.8 mm
Conductor nominal cross section	0.34 mm ² /AWG22
Wire O.D. (including insulator)	2.55 mm
Min. bending radius (Fixed)	78 mm

For EtherCAT

For PROFINET

For EtherNet/IP™

For Ethernet POWERLINK

For PROFIsafe

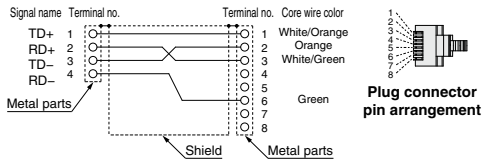
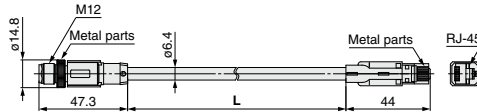
EX9-AC 020 EN-PSRJ (Plug/RJ-45 connector)

• Cable length (L)

010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Plug connector
pin arrangement
D-coded



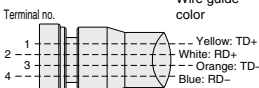
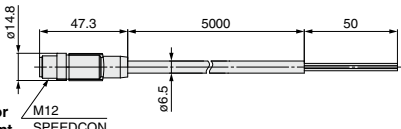
Connections (Straight cable)

Item	Specifications
Cable O.D.	ø6.4 mm
Conductor nominal cross section	0.14 mm ² /AWG26
Wire O.D. (including insulator)	0.98 mm
Min. bending radius (Fixed)	26 mm

PCA-1446566 (Plug)



Plug connector
pin arrangement
D-coded



Connections

Item	Specifications
Cable O.D.	ø6.5 mm
Conductor nominal cross section	0.34 mm ² /AWG22
Wire O.D. (including insulator)	1.55 mm
Min. bending radius (Fixed)	19.5 mm

1 Communication Cable

For EtherCAT

For PROFINET

For EtherNet/IP™

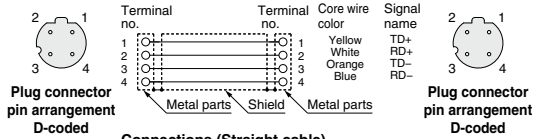
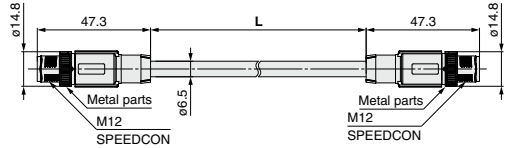
For Ethernet POWERLINK

For PROFIsafe

EX9-AC 005 EN-PSPS (With connector on both sides (Plug/Plug))

● Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



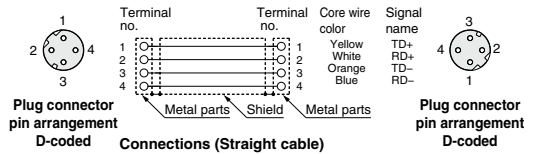
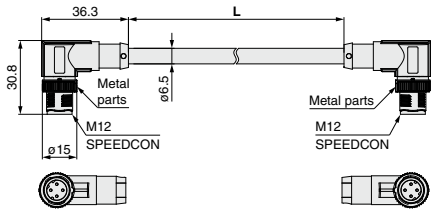
Connections (Straight cable)

Item	Specifications
Cable O.D.	ø6.5 mm
Conductor nominal cross section	0.34 mm ² /AWG22
Wire O.D. (Including insulator)	1.55 mm
Min. bending radius (Fixed)	19.5 mm

EX9-AC 005 EN-PAPA (With angled connector on both sides (Plug/Plug))

● Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Connections (Straight cable)

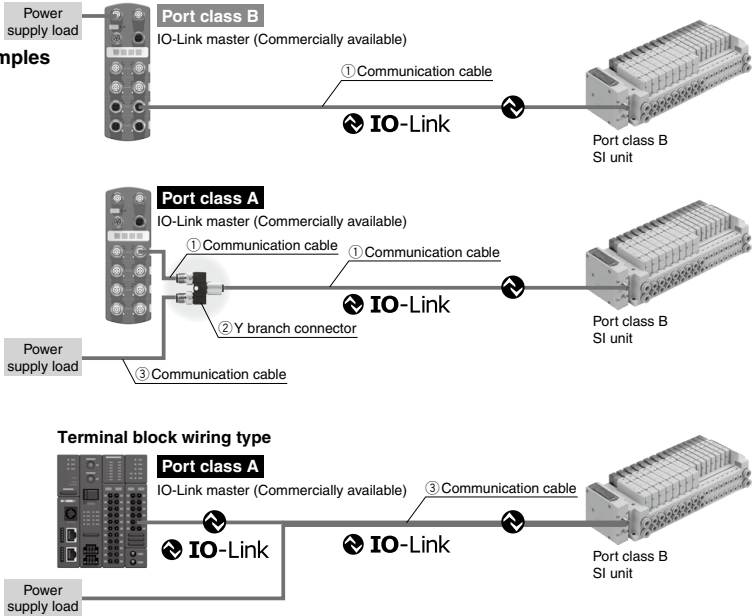
Item	Specifications
Cable O.D.	ø6.5 mm
Conductor nominal cross section	0.34 mm ² /AWG22
Wire O.D. (Including insulator)	1.55 mm
Min. bending radius (Fixed)	19.5 mm

EX260 Series

① Communication Cable

For IO-Link

Connection examples

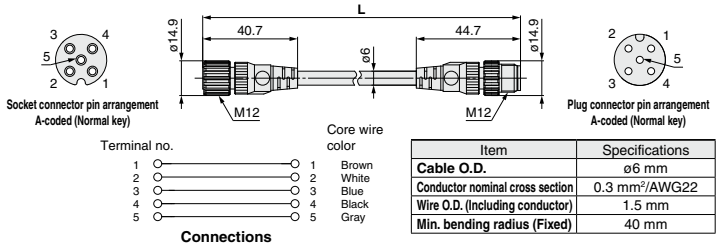


① Communication cable

EX9-AC [005]-SSPS (With connector on both sides (Socket/Plug))

• Cable length (L)

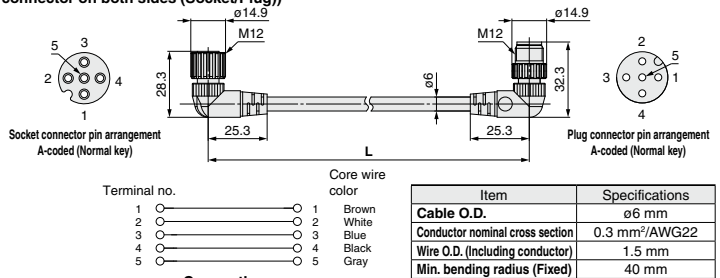
005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



EX9-AC [005]-SAPA (With connector on both sides (Socket/Plug))

• Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



① Communication Cable

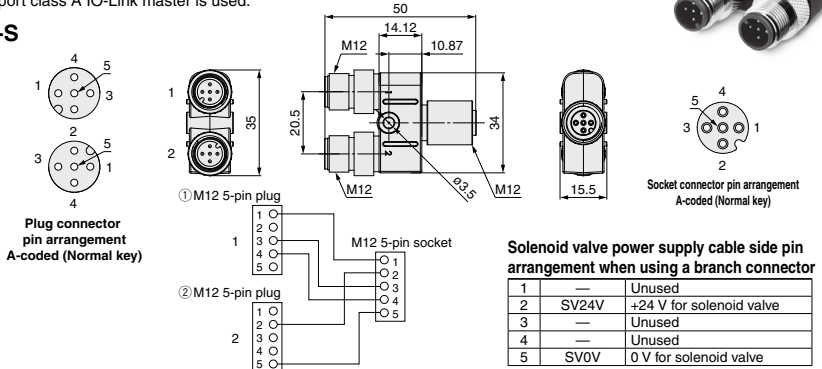
For IO-Link

② Y branch connector

This connector is used to supply power to the valve manifold by branching the IO-Link communication cable in cases where a port class A IO-Link master is used.



EX9-ACY02-S



③ Communication cable

EX500-AP 050 - S

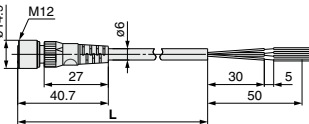
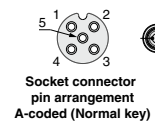
Cable length (L)

010	1000 mm
050	5000 mm

Connector specification

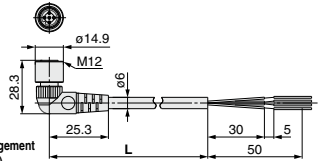
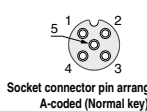
S	Straight
A	Angled

Straight connector type



Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Angled connector type

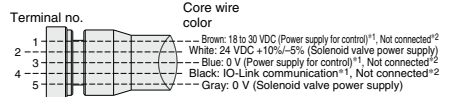


Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm



Made to Order

Cable length	10000 mm	p. 1339
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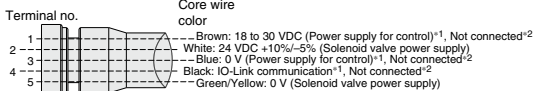
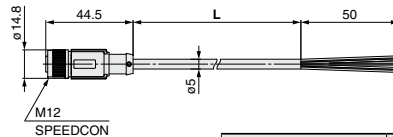
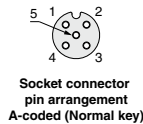
Connections (IO-Link)

- *1 When used as an IO-Link communication cable
- *2 When used as a solenoid valve power supply cable

PCA-1401804

Cable length (L)

1401804	1500 mm
1401805	3000 mm
1401806	5000 mm



Item	Specifications
Cable O.D.	ø5 mm
Conductor nominal cross section	0.34 mm ² /AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	21.7 mm

Connections (IO-Link)

- *1 When used as an IO-Link communication cable
- *2 When used as a solenoid valve power supply cable

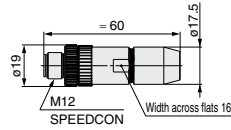


EX260 Series

② Field-wireable Communication Connector

Plug

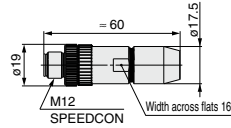
For CC-Link For DeviceNet®
PCA-1075526 PCA-1075528



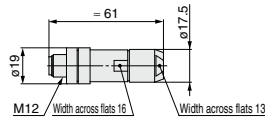
Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.75 mm ² /AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm ² /AWG28 to 20 (With ferrule)

For PROFIBUS DP
PCA-1075530



For EtherCAT For PROFINET For EtherNet/IP™ For Ethernet POWERLINK For PROFIsafe
PCA-1446553



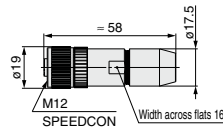
Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.34 mm ² /AWG26 to 22

* The table above shows the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

Socket

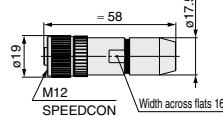
For CC-Link For DeviceNet®
PCA-1075527 PCA-1075529



Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.75 mm ² /AWG26 to 18 (Solid cable/Flexible cable) 0.08 to 0.5 mm ² /AWG28 to 20 (With ferrule)

For PROFIBUS DP
PCA-1075531



③ Power Supply Cable (For SI unit)

- For PROFIBUS DP For DeviceNet® For EtherCAT For PROFINET For EtherNet/IP™
 For Ethernet POWERLINK For PROFSafe

EX500-AP 050 - S

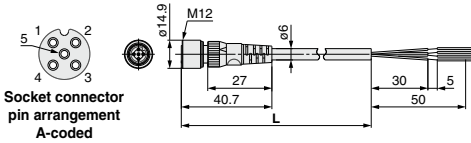
Cable length (L)

010	1000 mm
050	5000 mm

Connector specification

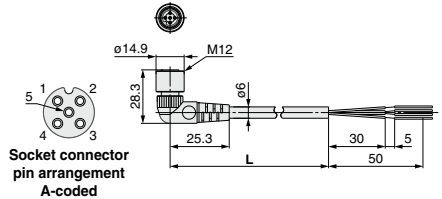
S	Straight
A	Angled

Straight connector type

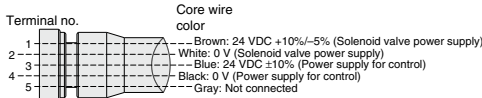


Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

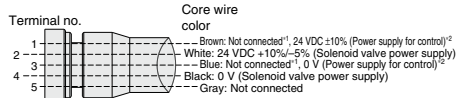
Angled connector type



Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm



Connections (PROFIBUS DP, EtherCAT, PROFINET, Ethernet POWERLINK, PROFSafe)



Connections (DeviceNet®, EtherNet/IP™) ^{#1 For DeviceNet®} ^{#2 For EtherNet/IP™}



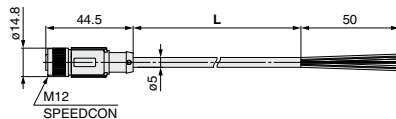
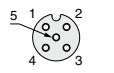
Made to Order

Cable length	10000 mm	p. 1338
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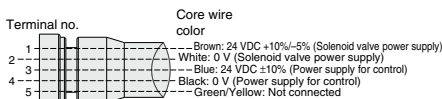
PCA-1401804

Cable length (L)

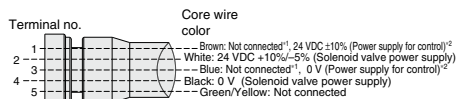
1401804	1500 mm
1401805	3000 mm
1401806	5000 mm



Item	Specifications
Cable O.D.	ø5 mm
Conductor nominal cross section	0.34 mm ² /AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	21.7 mm



Connections (PROFIBUS DP, EtherCAT, PROFINET, Ethernet POWERLINK, PROFSafe)



Connections (DeviceNet®, EtherNet/IP™) ^{#1 For DeviceNet®} ^{#2 For EtherNet/IP™}

EX260 Series

④ Power Supply Cable (For SI unit/For power block)

For CC-Link

For power block

Straight connector type

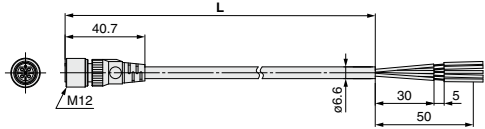
EX9-AC 050 -1

● Cable length (L)

010	1000 mm
030	3000 mm
050	5000 mm



Socket connector pin arrangement B-coded

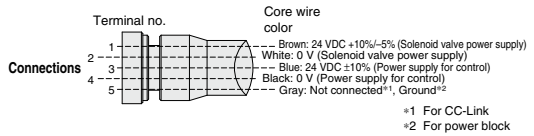


Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm



Made to Order

Cable length	10000 mm	p. 1338
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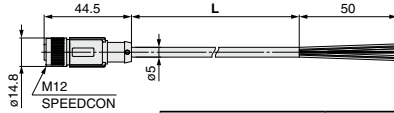
PCA-1401807

● Cable length (L)

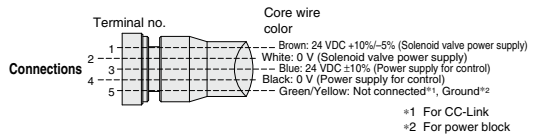
1401807	1500 mm
1401808	3000 mm
1401809	5000 mm



Socket connector pin arrangement B-coded



Item	Specifications
Cable O.D.	ø5 mm
Conductor nominal cross section	0.34 mm ² /AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	21.7 mm



⑤ Seal Cap (10 pcs.)

Use this on ports that are not being used for communication connector (M12 connector socket).

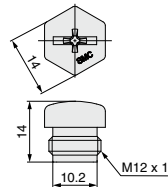
Use of this seal cap maintains the integrity of the IP67 enclosure.

* Tighten the seal cap with the prescribed tightening torque. (For M12: 0.1 N·m)

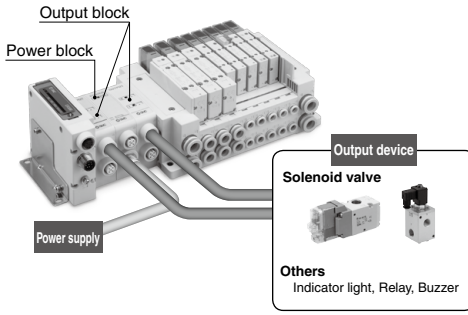
EX9-AW TS

● Connector specification

TS	For M12 connector socket (10 pcs.)
----	------------------------------------



For M12 connector socket

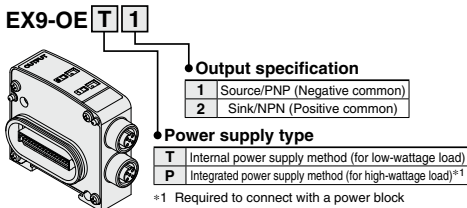


- Output devices other than valve manifold can be operated.
- By using the power block and output block for high watt load, operation up to 0.5 A/point can be performed.
- It is possible to mount the output block and power block additionally between the SI unit and the solenoid valve (The surplus I/O points are used).
- 2 point outputs per output block (M12 connector)

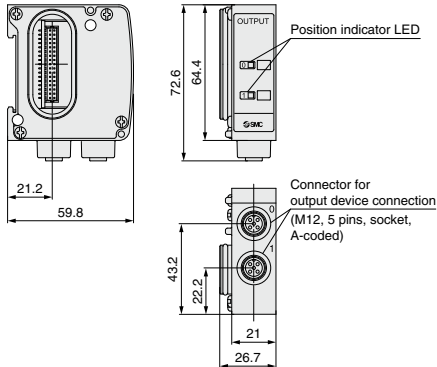
The output block and power block cannot be used with the PROFiSafe compatible SI unit EX260-FPS1.

You are requested to connect it to an SI unit and a valve manifold. For detailed specifications, refer to the operation manual that can be downloaded from SMC website: <https://www.smcworld.com>

6 Output Block



Dimensions/Parts Description

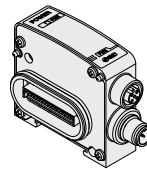


Specifications

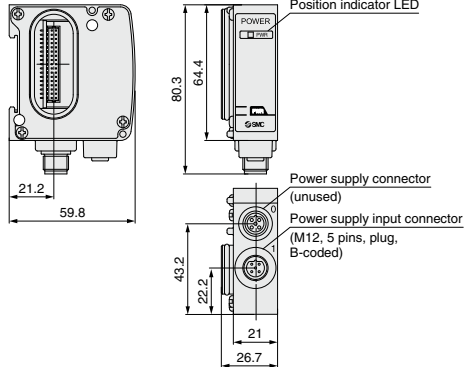
Model	EX9-OET1	EX9-OET2	EX9-OEP1	EX9-OEP2
Internal current consumption	40 mA or less			
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common) / Sink/NPN (Positive common)
	Number of outputs	2 outputs		
	Power supply method	Internal power supply method	Integrated power supply method (Power block: supplied from EX9-PE1)	
	Output device supply voltage	24 VDC		
	Output device supply current	Max. 42 mA/point (1.0 W/point) Max. 0.5 A/point (12 W/point)		
Environmental resistance	Enclosure	IP67		
	Operating temperature range	-10 to 50°C		
	Operating humidity range	35 to 85% RH (No condensation)		
Standards	CE/UKCA marking, UL (CSA)			
Weight	120 g			

7 Power Block

EX9-PE1



Dimensions/Parts Description



Specifications

Model	EX9-PE1
Connection block	Output block for high wattage load
Connection block stations	Output block: Max. 8 stations
Power supply for output and internal control	Power supply voltage: 22.8 to 26.4 VDC Internal current consumption: 20 mA or less
Supply current	Max. 3.1 A*1
Environmental resistance	Enclosure: IP67
	Operating temperature range: -10 to 50°C Operating humidity range: 35 to 85% RH (No condensation)
Standards	CE/UKCA marking, UL (CSA)
Weight	120 g
Enclosed parts	Seal cap (for M12 connector) 1 pc.

*1 When using with 3.0 to 3.1 A, the ambient temperature should not exceed 40°C, and do not bundle the cable.

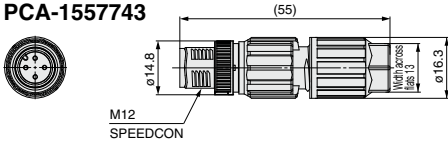
Refer to page 1334 for the power supply cable for power block.

EX260 Series

8 Connector for Output Block Wiring

Field-wireable connector for connecting an output device to an output block

PCA-1557743



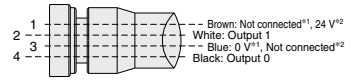
Applicable Cable

Item	Specifications
Cable O.D.	3.5 to 6.0 mm
Wire gauge (Stranded wire cross section)	0.14 to 0.34 mm ² /AWG26 to 22
Core wire diameter (Including insulating material)	0.7 to 1.3 mm

A-coded



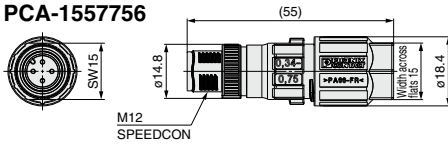
Plug pin arrangement



Connections

- *1 When used for EX9-OE□1
- *2 When used for EX9-OE□2

PCA-1557756



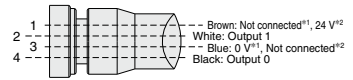
Applicable Cable

Item	Specifications
Cable O.D.	4.0 to 8.0 mm
Wire gauge (Stranded wire cross section)	0.34 to 0.75 mm ² /AWG22 to 18
Core wire diameter (Including insulating material)	1.3 to 2.5 mm

A-coded



Plug pin arrangement



Connections

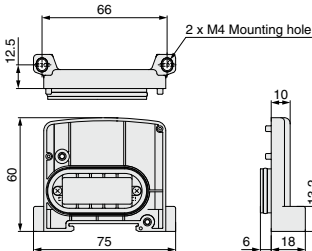
- *1 When used for EX9-OE□1
- *2 When used for EX9-OE□2

Refer to page 1334 for the power supply cable for power block.

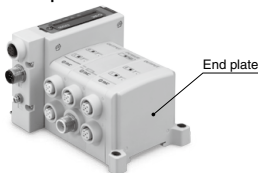
9 End Plate

Use when an output block is being used and a valve manifold is not connected.

EX9-EA03



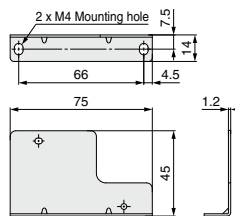
<Example of use>



10 Bracket Plate/DIN Rail Mounting Bracket

A reinforcing brace used to mount an output block or power block onto an SI unit. To prevent connection failure between products due to deflection, use this bracket plate whenever an output block or power block is mounted.

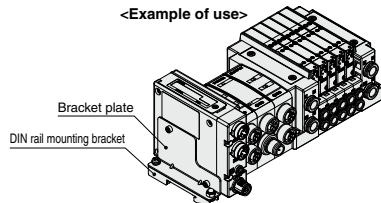
EX9-BP1



Accessory

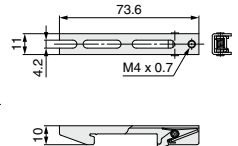
Description	Qty.
Hexagon socket head cap screw (M3 x 35)	2

<Example of use>



EX9-BD1

(For VQC, S0700, SV)



Accessory

Description	Qty.
Domed cap nut (M4)	1
Round head combination screw (M4 x 8)	1
Round head combination screw (M4 x 10)	1

EX260 Series Made to Order

Please contact SMC for detailed specifications and lead times.



SI Unit

Prepare the SI unit and valve manifold (without SI unit) separately, and combine them before use.

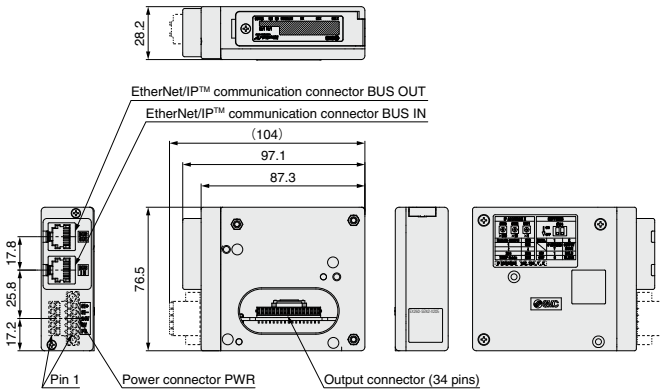
① EtherNet/IP™ LAN cable connectable RJ45 communication connectors

EX260-S-EN2-X205

Communication protocol
EN EtherNet/IP™

Connector specification
X205 Communication connector: RJ45
Power connector: Spring type connector

Output specification
2 32 outputs, NPN (Positive common)/Sink



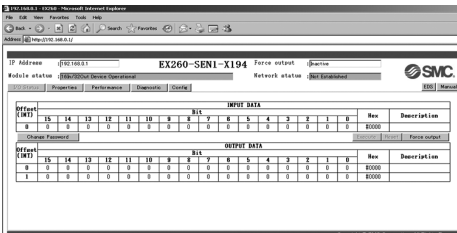
⚠ Caution

The dimensions when combined with the valve manifold are the same as the dimensions of the valve manifold with a standard EX260 series unit mounted.

② EtherNet/IP™ Web server function compatible

EX260-SEN1-X194

- Web server compatible: Can conduct a solenoid valve operation test (ON/OFF), check communication state, set QuickConnect™, etc.
- Applicable to the power supply taken from Rockwell Automation's safe output module with pulse test function
- Compliant with QuickConnect™ class A specifications
- The gateway address is set to 192.168.□.001 when the IP address is set by the rotary switch.
- Dimensions are the same as those of the standard type.



Web server screen (Example)

EX260 Series

Communication Cable

With connector on one side (Socket)
Cable length: 10000 mm

For CC-Link

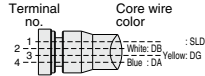
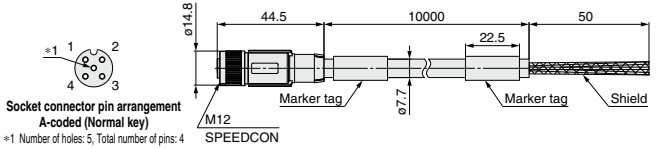
For DeviceNet®

EX9-AC100 MJ-X12

Applicable protocol

MJ	CC-Link
DN	DeviceNet®

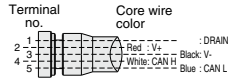
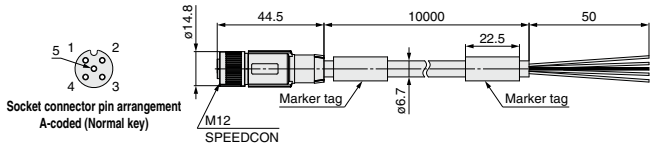
For CC-Link



Connections

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm ² /AWG20
	Drain	0.34 mm ² /AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm

For DeviceNet®



Connections

Item		Specifications
Cable O.D.		ø6.7 mm
Conductor nominal cross section	Power pair	0.34 mm ² /AWG22
	Data pair	0.25 mm ² /AWG24
Wire O.D. (Including insulator)	Power pair	1.4 mm
	Data pair	2.05 mm
Min. bending radius (Fixed)		67 mm

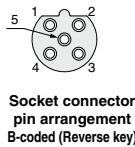
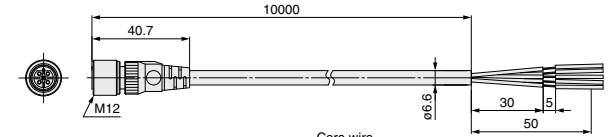
Power Supply Cable

① **With connector on one side (Socket)**

Cable length: 10000 mm

For CC-Link **For power block**

EX9-AC100-1-X16



Terminal no.	Core wire color
1	Brown: 24 VDC +10%/-5% (Solenoid valve power supply)
2	White: 0 V (Solenoid valve power supply)
3	Blue: 24 VDC ±10% (Power supply for control)
4	Black: 0 V (Power supply for control)
5	Gray: Not connected*1, Ground*2

*1 For CC-Link
 *2 For power block

Item	Specifications
Cable O.D.	ø6.6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.65 mm
Min. bending radius (Fixed)	40 mm

② **With connector on one side (Socket)**

Cable length: 10000 mm

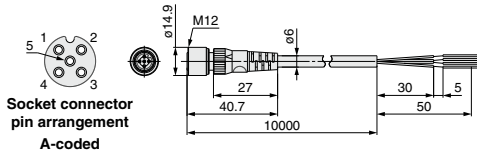
For PROFIBUS DP **For DeviceNet®** **For EtherCAT** **For PROFINET** **For EtherNet/IP™**
For Ethernet POWERLINK **For IO-Link** **For PROFIsafe**

EX500-AP100-S-X1

● **Connector specification**

S	Straight
A	Angled

Straight connector type

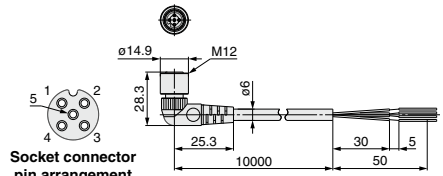


Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Terminal no.	Core wire color
1	Brown: 24 VDC +10%/-5% (Solenoid valve power supply)
2	White: 0 V (Solenoid valve power supply)
3	Blue: 24 VDC ±10% (Power supply for control)
4	Black: 0 V (Power supply for control)
5	Gray: Not connected

Connections (PROFIBUS DP, EtherCAT, PROFINET, Ethernet POWERLINK, PROFIsafe)

Angled connector type



Item	Specifications
Cable O.D.	ø6 mm
Conductor nominal cross section	0.3 mm ² /AWG22
Wire O.D. (Including insulator)	1.5 mm
Min. bending radius (Fixed)	40 mm

Terminal no.	Core wire color
1	Brown: Not connected*1, 24 VDC ±10% (Power supply for control)*2
2	White: 24 VDC +10%/-5% (Solenoid valve power supply)
3	Blue: Not connected*1, 0 V (Power supply for control)*2
4	Black: 0 V (Solenoid valve power supply)
5	Gray: Not connected

Connections (DeviceNet®, EtherNet/IP™) *1 For DeviceNet® *2 For EtherNet/IP™

Terminal no.	Core wire color
1	Brown: 18 to 30 VDC (Power supply for control)*1, Not connected*2
2	White: 24 VDC +10%/-5% (Solenoid valve power supply)
3	Blue: 0 V (Power supply for control)*1, Not connected*2
4	Black: IO-Link communication*1, Not connected*2
5	Gray: 0 V (Solenoid valve power supply)

Connections (IO-Link) *1 When used as an IO-Link communication cable *2 When used as a solenoid valve power supply cable



EX260 Series

Specific Product Precautions

Be sure to read this before handling the products. Refer to page 7 for safety instructions and pages 15 to 17 for fieldbus system precautions.

Wiring

Caution

1. **Select connectors that are $\phi 16$ or less if mounting valve manifolds directly using field-wireable connectors for SI unit power supply wiring.**

Using large diameter connectors causes interference with the mounting surface.

The following cables with connectors are recommended.

■ **For EX260-SPR□/SDN□/SEC□/SPN□/SEN□/SP□/**
-FPS1

<Cable with connector>

- EX500-AP□□□-□
- PCA-1401804/-1401805/-1401806

■ **For EX260-SMJ□**

<Cable with connector>

- EX9-AC□□□-1
- PCA-1401807/-1401808/-1401809

Operating Environment

Caution

1. **Select the proper type of enclosure according to the operating environment.**

IP67 is achieved when the following conditions are met.

- 1) Provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors.
- 2) Appropriately mount each unit and valve manifold.
- 3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.

When the enclosure is IP40, do not use in an operating environment or atmosphere where it may come in contact with corrosive gas, chemical agents, seawater, water, or water vapor.

When connected to the EX260-SPR5/6/7/8, manifold enclosure is IP40.

Adjustment / Operation

Caution

1. **For details on programming and address setting, refer to the manual from the PLC manufacturer.**

The programming content related to the protocol is designed by the manufacturer of the PLC used.

2. **For the EX260-SPN□, the side of the SI unit may become hot.**

It may cause burns.

■ Trademark

DeviceNet® is a registered trademark of ODVA, Inc.

EtherNet/IP® is a registered trademark of ODVA, Inc.

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

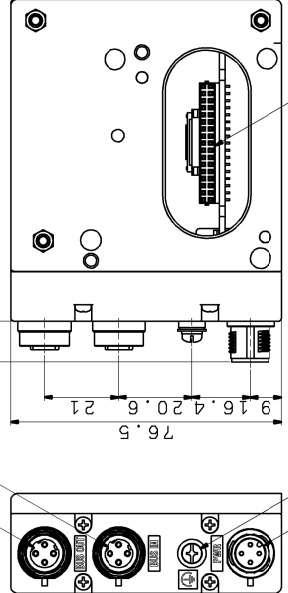
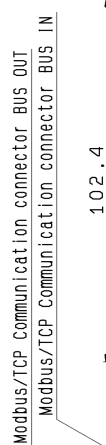
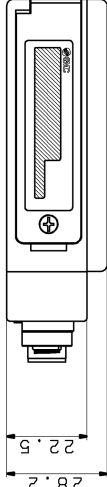
Modbus® is a registered trademark of Schneider Electric, licensed to the Modbus Organization, Inc.

QuickConnect™ is a trademark of ODVA.

EX260-SEN1-X242

LED indication

LED	Status	Description
AS	Off	SI unit operating voltage is not supplied or IP address not set.
	Green flashing	IP address setting completed.
	Red ON	IP address duplicated.
MS	Off	SI unit operating voltage is not supplied.
	Green ON	Operating normally.
	Red flashing	Recoverable error.
	Red ON	Unrecoverable error.
L/A1	Green ON	BUS IN side: NO Link, NO Activity.
	Green flashing	BUS IN side: Link, Activity.
L/A2	Green ON	BUS OUT side: NO Link, NO Activity.
	Green flashing	BUS OUT side: Link, Activity.
PWR (V)	Off	Load voltage for the valve is not supplied or outside tolerance range (19V or less)

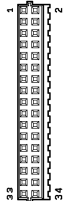


Output connector (34-pole)

Ground terminal (M3)

Power supply connector PWR

Output connector (34-pole, Receptacle)



No.	Designation	Description	No.	Designation	Description
1	COM	Output common (OV)	2	COM	Output common (OV)
3	OUT_00	Solenoid output 0	4	OUT_01	Solenoid output 1
5	OUT_02	Solenoid output 2	6	OUT_03	Solenoid output 3
7	OUT_04	Solenoid output 4	8	OUT_05	Solenoid output 5
9	OUT_06	Solenoid output 6	10	OUT_07	Solenoid output 7
11	OUT_08	Solenoid output 8	12	OUT_09	Solenoid output 9
13	OUT_0A	Solenoid output 10	14	OUT_0B	Solenoid output 11
15	OUT_0C	Solenoid output 12	16	OUT_0D	Solenoid output 13
17	OUT_0E	Solenoid output 14	18	OUT_0F	Solenoid output 15
19	OUT_10	Solenoid output 16	20	OUT_11	Solenoid output 17
21	OUT_12	Solenoid output 18	22	OUT_13	Solenoid output 19
23	OUT_14	Solenoid output 20	24	OUT_15	Solenoid output 21
25	OUT_16	Solenoid output 22	26	OUT_17	Solenoid output 23
27	OUT_18	Solenoid output 24	28	OUT_19	Solenoid output 25
29	OUT_1A	Solenoid output 26	30	OUT_1B	Solenoid output 27
31	OUT_1C	Solenoid output 28	32	OUT_1D	Solenoid output 29
33	OUT_1E	Solenoid output 30	34	OUT_1F	Solenoid output 31

Specifications

Item	Specifications
Protocol	Modbus/TCP
Transmission medium	Standard Ethernet cable (CAT5 or more) (100BASE-TX)
Transmission speed	100Mbps/10Mbps (Auto negotiation)
Transmission type	Full-duplex/Half-duplex (Auto negotiation)
IP address setting method	DHCP
Function Code	DIP switch setting: 192.168.0.1 to 254 or 192.168.1.1 to 254
Off-line transition time(*)	Read Holding Registers (0x03) Write Multiple Registers (0x10) Read/Write Multiple Registers (0x17) 2000ms
Number of outputs	32 outputs
Output type	Source/PNP (negative common)
Connection load	Solenoid valve with surge voltage (manufactured by SMC)
Solenoid valve power supply	22.8~26.4VDC
Residual voltage	2.0A or less, according to the solenoid valve station specification
Controller power supply	0.8VDC or less
Weight	21.6~26.4VDC 0.1A max.
Standards	2009 or less CE Marked UL/CSA
*: it is the maximum allowed time between Modbus/TCP commands. If this time is exceeded, the module will trigger an off-line events (either all output HOLD or CLEAR)	

Special specification

1. Modbus/TCP compatible.
2. Web server is supported.
3. HOLD/CLEAR setting: For each output

*Unless otherwise noted along with a separate contract or agreement within the Product Specifications, the safety instructions specified in the product catalog or the operation manual are applied. Please contact your local SMC sales office for further details.

Modbus/TCP Communication connector BUS OUT: M12 4-pole Socket D-coded

No.	Designation	Description
1	TD+	Transmitting Data +
2	RD+	Receiving Data +
3	TD-	Transmitting Data -
4	RD-	Receiving Data -



Plug connector cable: CAT5 cable (M12 4-pole Plug D-coded) EX9-AC***EN-PSRJ etc.

Modbus/TCP Communication connector BUS IN: M12 4-pole Socket D-coded

No.	Designation	Description
1	TD+	Transmitting Data +
2	RD+	Receiving Data +
3	TD-	Transmitting Data -
4	RD-	Receiving Data -



Plug connector cable: CAT5 cable (M12 4-pole Plug D-coded) EX9-AC***EN-PSRJ etc.

Accessories

Part name	Qty
Hexagon socket head cap screw (M3x30)	2
Seal cap	1

Power supply connector PWR: M12 4-pole Plug A-coded

No.	Designation	Description
1	SV24V +24V	+24V for SI Unit operation
2	SV24V +24V	+24V for solenoid valve
3	SV0V 0V	0V for SI Unit operation
4	SV0V 0V	0V for solenoid valve



Socket connector cable: EX500-AP***-S (Straight) EX500-AP***-A (Angle)
PCA-1401804/1401805/1401806 (Straight, 1.5/3/5m)

REV. NO.	DESCRIPTION	DATE	PREPARED	REV. NO.	DATE	APPROVED	DATE
1	1st Edition	2020-05-28	M. Kojima	1	2020-05-28		
2	DATE PREPARED	2020-05-28		2	2020-05-28		
3	DESIGNED	2020-05-28	T. Shiba	3	2020-05-28		
4	CHECKED	2020-05-28		4	2020-05-28		
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