- · Important Notes on exporting this product or equipment containing this product; If the end-user or application of this product is related to military affairs or weapons, its export may be controlled by "Foreign Exchange and Foreign Trade Control Law" of Japan where export license will be required before product can be exported from
- This product is designed and manufactured for use in General Purpose Industrial Equipment and it is not intended to be used in equipment or system that may cause personal injury or death.
- · All servicing such as installation, wiring, operation, maintenance and etc., should be performed by qualified personnel only.
- · Tighten mounting screws with an adequate torque by taking into consideration strength of the screws and the characteristics of material to which the product will be mounted. Over tightening can damage the screw and/or material; under tightening can result in loosening.
- *Example: apply 2.7 N·m 3.3 N·m torque when tightening steel screw (M5) to steel surface.
- · Install safety equipment to prevent serious accidents or loss that is expected in case of failure of this product.
- · Consult us before using this product under such special conditions and environments as nuclear energy control, aerospace, transportation, medical equipment, various safety equipments or equipments which require a lesser air contamination.
- · We have been making the best effort to ensure the highest quality of our products, however, some applications with exceptionally large external noise disturbance and static electricity, or failure in input power, wiring and components may result in unexpected action. It is highly recommended that you make a fail-safe design and secure the safety in the operative range.
- · If the motor shaft is not electrically grounded, it may cause an electrolytic corrosion to the bearing, depending on the condition of the machine and its mounting environment, and may result in the bearing noise. Checking and verification by customer is required.
- Failure of this product depending on its content may generate smoke of about one cigarette. Take this into consideration when the application of the machine is clean room related.
- Please be careful when using the product in an environment with high concentrations of sulfur or sulfuric gases, as sulfuration can lead to disconnection from the chip resistor or a poor contact connection.
- Do not input a supply voltage which significantly exceeds the rated range to the power supply of this product. Failure to heed this caution may lead to damage of the internal parts, causing smoke and/or fire and other troubles.
- The user is responsible for matching between machine and components in terms of configuration, dimensions, life expectancy, characteristics, when installing the machine or changing specification of the machine. The user is also responsible for complying with applicable laws and regulations.
- Manufacturer's warranty will be invalid if the product has been used outside its stated specifications.
- · Component parts are subject to minor change to improve performance.
- Read and observe the instruction manual to ensure correct use of the product.

Repair

Consult to the dealer from whom you have purchased this product for details of repair work. When the product is incorporated to the machine you have purchased, consult to the machine manufacturer or its dealer.

URL

Electric data of this product (Instruction Manual, CAD data) can be download from the following web site; http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors

Contact to



ISO9001 Certificate division

ISO14001 Certificate

14001

Panasonic Corporation, Automotive & Industrial Systems Company, Smart Factory Solutions Business Division, **Motor Business Unit**

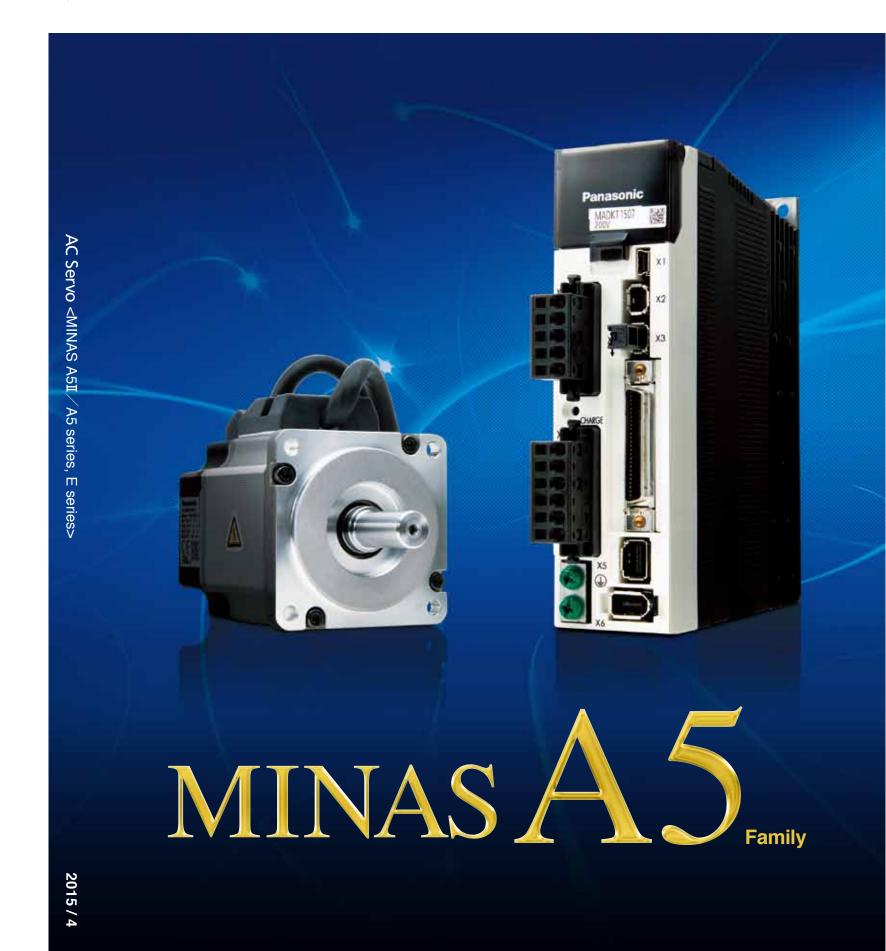
1-1 Morofuku 7-chome, Daito, Osaka 574-0044, Japan Fax: +81-72-870-3151

The contents of this catalog apply to the products as of April 2015.

- This product is for industrial equipment. Don't use this product at general household.
- · Printed colors may be slightly different from the actual products.
- Specifications and design of the products are subject to change without notice for the product improvement.

Panasonic

AC Servo MINAS A5 II / A5 series



Servo motor that brings out potential of the machine. MINAS A





Two-degree-of-freedom control system

All-in-one type

Rated output: 50 W to 15.0 kW

- 20 bit incremental encoder.
- 17 bit absolute/ incremental encoder
- All-in-one: Speed, Position, Torque*1, Full-closed*1 control type
- *1 Not applicable to two-degree-of-freedom control system

All-in-one type

Rated output: 50 W to 15.0 kW

- 20 bit incremental encoder.
- 17 bit absolute/ incremental encoder
- All-in-one: Speed, Position, Torque, Full-closed control type

Two-degree-of-freedom control system

Position control type

Rated output: 50 W to 5.0 kW

- 20 bit incremental encoder
- Position control (pulse train commands)

Position control type

Rated output: 50 W to 5.0 kW

- 20 bit incremental encoder
- Position control (pulse train commands)

Slim design and position control type





Rated output: 50 W to 400 W

- Ultra-small design and pulse train command type only
- Real-time auto gain tuning
- DIN-rail mountable (using mounting Kit)

High-speed communication "Realtime Express" support model

Ultra high-speed Network type



Rated output:

50 W to 15.0 kW

- Synchronized motion and precise CP control up to 32 axes with 100 Mbps communication
- Standard Ethernet cable*2 using
- Two-degree-of-freedom control system

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

- Position, Speed and Thrust control
- Automatic setup function & Automatic magnetic pole detection function
- Two-degree-of-freedom control system

DC 24 V type



Rated output:

10 W. 20 W. 30 W

- Synchronized motion and precise CP control up to 32 axes with 100 Mbps communication
- Standard Ethernet cable 2 using
- Two-degree-of-freedom control system

Linear motor control, DC 24 V type



Capacity of applying Linear motor:

Compatible with 30 W rotary AC servo motor

- Position, Speed and Thrust control
- Automatic setup function & Automatic magnetic pole detection function
- Two-degree-of-freedom control system

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

- Position, Speed, Thrust control
- Drastically reduced setup time by automatic
- Automatic magnetic pole detection function will detect the magnetic pole position of the linear motor.

EtherCAT communication driver type



Rated output:

50 W to 15.0 kW

- Supports PC-based controller
- Passed Official EtherCAT Conformance Test
- Standard Ethernet cable 2 using
- Two-degree-of-freedom control system

External Regenerative Resister-Surge Absorber for Motor Brake List of Peripheral Equipments

Contents

A5II. A5IIE. A5. A5E series

Applicable Peripheral Equipments 19

Table of Part Numbers and Options 21

A5II, A5 series (All-in-one type) ----- 29

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XA, XB, XC, XD and terminal block. - 33

A5II Series Features -

Driver Specifications

Wiring to the Connector

Control Circuit Diagram

Dimensions of Driver

Special Order Product · Model Designation

Motor Specifications -

Cable part No. Designation Specifications of Motor connector -

Battery for Absolute Encoder

Encoder Cable

Motor Cable

Brake Cable-

Interface Cable

Mounting Bracket

Connector Kit-

Reactor

Motor Specifications -Dimensions (IP67 motor) Motors with Gear Reducer

Wiring to the Connector X3

Wiring to the Connector X4

Wiring to the Connector X5

Wiring to the Connector X6

Table of Part Numbers and Options

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Motor Specifications, Description

Wiring Diagram

Safety Function

A5 Family Features Motor Line-up · Model Designation-Overall Wiring ·· **Driver and List of**

-246 -288 Sales Office

General-purpose RS485 communication AE-LINK support type

series



Rated output:

50 W to 5.0 kW

- Positioning is possible by built-in NC function
- Can connect up to 31 axes
- Standard Ethernet cable¹² using
- Two-degree-of-freedom control system
- AE-LINK is a registered trade mark of Asahi Engineering.

[Special Order Product]: For details, see the website or request for information. *2 Shielded twisted pair cable (CAT5e or higher)

Quicker, Wiser and Friendlier $\,A5I$ series

Two-degree-of-freedom control system All-in-one type

· Full-closed control and torque control are not applicable to 2DOF control system.







 The above is a measure based on our test environment





Two-degree-of-freedom control system Only for position control type

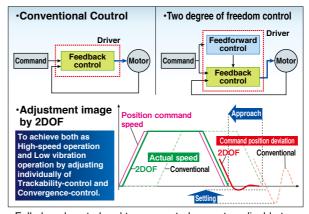


Realizes guick and accurate movement. Fast response & High-precision positioning

Adopted New Algorithm

"Two-degree-of-freedom control" (2DOF) to improve productivity and machining accuracy.

In the conventional model, because we could not adjust separately feedforward control and feedback controls, in other words even if we only adjust "Approach" of feedforward, it had connection with "Settling" of

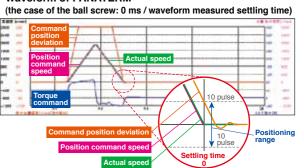


· Full-closed control and torque control are not applicable to 2DOF control system.

feedback control, mutual adjustment was required. In 2DOF adopted A5II series, feedforward and feedback controls are adjusted separately, meaning "Approach" reaction to the given command, and the "Settling" can be adjusted separately. Realized low vibration and reduction of settling time.

Realizes tact speed of the electronic component mounting machines, improves the accuracy of surface treatment of metal processing machines, allows for smooth operation and High speed industrial robots.

Waveform of PANATERM



Easy and guick adjusting time. 5 times faster* than conventional

Greatly improved "operability", easy-to-use software "PANATERM".

We have upgraded setup support software PANATERM, the convenient tool for parameter setting and monitoring often required during start-up of the machine for adjustment motor and driver. Improved to more easy-understandable screen.

· Adjustment is completed in only 3 processes



· Fit gain adjustment window

Equipped with "Fit Gain" function to realize speedy setup.

Newly developed feature "Fit Gain" maximizes the characteristics of A5II series. And adaptive notch filter function can reduce the vibration that occurs when the rigidity of the device is low, you can set and adjust automatically the best variety of gain.

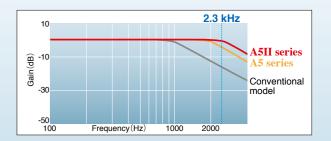
· Automatically proposes various settings

Recom	nerdaton setting M	onuel petti	10	
Theore	resultacceses as to	flows Pier	nie choose reco	meridation
Adv	ets est objects e: Full	read, fie	протов риевич	otisky, Midde
Select	Recommendation	Pigidity	Command response[ms]	Stabilization (me(m)
2.	Minimum stabilizati.	22	92	0.0
F	Deskyrete overeft	22	34	10
B 0	Designeta steckla.	19	15	95
Ut at	Might figigly setting	22	34	1.0
	Meson sating	0.11		

Realized 2.3 kHz frequency response to improve productivity

Comparison* 1.15 times faster than conventional

Realized 2.3 kHz response makes possible high-speed operation and improves productivity.



^{*} Comparison with conventional product A5-series.

MINAS A5 Family **Features**

) UiC



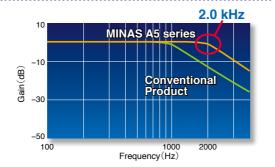
2.0 kHz

2.0 kHz Frequency Response

Example application Semiconductor production equipment, packaging, etc

Achieves the industry's leading frequency response of 2.0 kHz.

Operation speed up by new developed LSI and high responsible control. By the industry's leading speed and positioning response, a highly advanced system can be created. What's more, the shorter response delay will realize an extremely lower vibration.





20 bits/revolution, 1.04 million pulses (At incremental ty

<At incremental type>

Example application Machine tools, textile machinery, etc.

Ensures smoother operation and reduced vibration at stopping.

Ensures accurate positioning in a short time.

New proprietary signal processing technology achieves 1.04 million pulses with a 20-bit incremental encoder.

Conventional A4 Series 2500 p/r

5II. A5 Series 1048576 p/r [1.04 million pulses]



Low Cogging Torque (Excluding MSMD, MHMD, MDME 11.0 kW. 15.0 kW) A5II A5 A5IIE

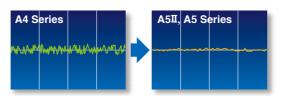




Example application Semiconductor production equipment, textile machinery, etc.

For the industry's most stable speed and lowest cogging

We've achieved the industry's lowest coaging by minimizing the pulse width by a new design incorporating a 10-pole rotor for the motor and a magnetic field parsing technique. Positioning and stability are greatly improved by the minimal torque variation. This results to improved speed stability and positioning of motor rotation.



Vibration reduced to only 1/8



The Input/Output Pulse 4 Mpps

Example application Semiconductor production equipment, machine tools, etc.

Accommodates the industry's leading positioning resolution commands (with pulse train commands).

The command input and feedback output operate at the high speed of 4 Mpps. Accommodates high-resolution and high-speed operation, including standard full closed operation. (Provided with A5II, A5 only.)





Smart

Auto tuning

Highly Functional Real-time Auto-Gain Tuning A5II A5 A5IIE A5E

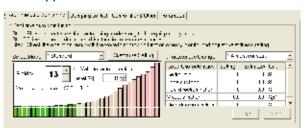
Example application Semiconductor production equipment, food processing machinery, etc.

High-performance real-time auto-gain tuning featuring simple setup.

After installation, tuning will be completed automatically after several operations. When the response is adjusted, simple tuning is supported with a change of one parameter value. Use of the gain adjustment mode in the setup support software contributes to optimum adjustment. The built-in auto vibration suppression

function reduces equipment damage. Appropriate modes are provided for various machines such as vertical axis machines and high friction machines with belts.

This makes it possible to perform simple optimal adjustments simply by selecting the mode and stiffness.





Manual/Auto Notch Filters

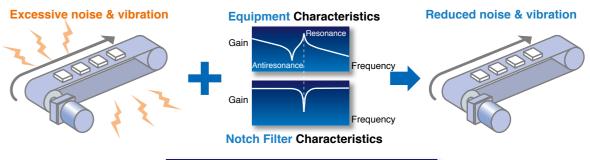
A5II

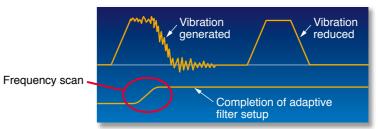
Example application Semiconductor production equipment, food processing machinery, etc.

Equipped with auto-setting notch filters for greater convenience.

Now there is no need to measure troublesome vibration frequencies. Our notch filters automatically detect vibration and provide simple auto-setting. These notch filters greatly reduce noise and vibration caused by equipment resonance and respond quickly

during operation. The A5II, A5 series features an industry-largest total of four notch filters with setup frequencies of 50 Hz to 5000 Hz. This approach enables depth adjustment within this frequency range. (Two of the filters share the auto set-up.)





Damping filter

Manual/Auto Damping Filter

Example application

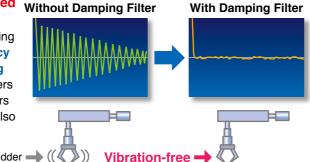
MINAS A 5 Family

Chip mounters, food processing machinery, robots,

general production machinery, etc.

Equipped with a damping filter featuring simplified Without Damping Filter automatic setup.

The setup software features automatic setup of the damping filter. This filter removes the natural vibration frequency component from the command input, greatly reducing vibration of the axis when stopping. The number of filters has been increased to four from the conventional two filters (two for simultaneous use). The adaptive frequency has also been significantly expanded from 1 Hz to 200 Hz.



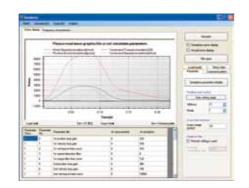
Simulation

Motion Simulation

Example application General production machinery, etc.

Equipped with a simplified machine simulation function.

The setup software uses frequency response data acquired from the actual machine. In addition, it features a machine simulation function for performing simulated operation. This allows you to easily confirm the effects of gain and various filters without adjusting the actual equipment.



Light



New Structure/ Innovative Core/ Innovative Encoder A5II

Example application Robots, chip mounters, general production machinery, etc.



novative enco

Featuring significantly reduced weight and a more compact motor

We've developed new designs for both compact motors and large motors. The new design used for the core has succeeded in compact. The addition of an innovative compact encoder has contributed to a 10 % to 25 % (1 kg to 6 kg) reduction in motor weight in the 1 kW and larger class when compared with conventional motors.



	[Examples for MSM or MDM]								
	Series	A 4	A5II A5	Weight Reductio					
kW	MSM 1 kW	4.5 kg	3.5 kg	▲ 1 k					
10	MSM 2 kW	6.5 kg	5.3 kg	▲1.2 k					
	MDM 1 kW	6.8 kg	5.2 kg	▲1.6 k					
kW	MDM 2 kW	10.6 kg	8.0 kg	▲ 2.6 k					

Safe



Complies with European Safety Standards.

Example application Semiconductor and LCD production equipment, etc.

Compliance with EU safety standards.

Features non-software-based independent redundant circuitry for motor power isolation. independent redundant circuitry for motor power isolation. This obviates the need for magnetic contactors to isolate

the required motor in order to accommodate low-voltage machinery commands. (The final safety compliance must be applied as machine.)



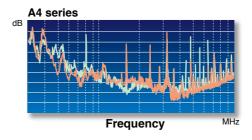
Low noise

Example application

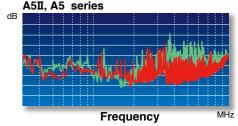
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market

Complies with the European EMC Directive

By incorporating the latest circuit technology, A5II, A5 series achieves a further noise reduction of 3 dB compared with the conventional A4 series, which also features noise suppression. (The A4 series also conforms to the EMC Directive.)







IP67 Enclosure Rating (Products are build to order items.)

Example application Machine tools, robots, printing machines, etc.

IP67 enclosure rating for increased environmental resistance Our improved motor seals and direct-mount connectors in the motor

power supply and encoder input-output areas contribute to this unit's IP67 enclosure rating.



IP67

- Protection against water Protection against

temporary immersion in water Protection against dust

- Protected against dust penetration when in full contact
- · Motors of MSMD and MHMD series and 0.9 kW or higher standard stock items have IP65 rating.
- · Motors of IP67 have smaller encoder connector that requires cable compatible with IP67 motor.
- * IP67 motor is build to order items.

Features

MINAS A 5 Family









PANATERM Set-up Support Software

A5II A5 A5IIE A5E

The PANATERM Set-up Support Software, with many added features.

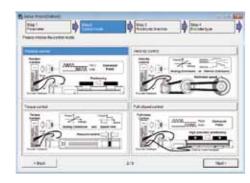
The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A5 Family through the USB interface.

Localized in 4 languages

Choose either English, Japanese, Chinese, or Korean-language display.

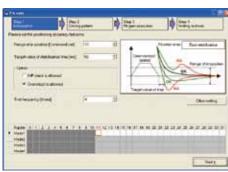
Setup Wizard

This wizard supports fundamental settings in each control mode step by step, includeing reading of default setting. In on-line condition, input data related to each step can be monitored in real time.



Fit gain

This function automatically searches the best suitable stiffness setting and mode and adjusts the gain once the target in-position range and setting time are set.



The fit gain function for setting two-degree-of-freedom control.

- 1) Select the adjustment method
- 2) Load measurement
- 3) Adjust gain to meet your needs by confirming results. (for A5I, A5IE)



Service Life Prediction

The service life prediction function considers the internal temperature for main components such as the fan and condenser. If the rated value is exceeded, an alarm is displayed. This approach prevents unexpected suspension of operation and allows for planning of systemized maintenance.



Note: The life span prediction value should be considered as a guide only.

Encoder Temperature Monitor

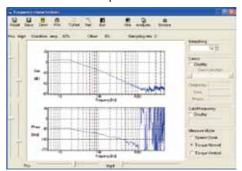
The Encoder Temperature Monitor is a new function capable of **real-time measurement of the interior temperature of the encoder**, **something that has been difficult to achieve in the past**. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided with 20-bit encoder only).

Other New Function

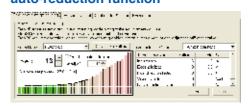
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.

Frequency characteristics measurement function

Can check frequency response characteristics of the mechanism and motor. Since resonance frequency of the mechanism is measurable, it is effective for start-up time reduction.



Added New screen for gain adjustment, equipped with stiffness oscillation auto-reduction function

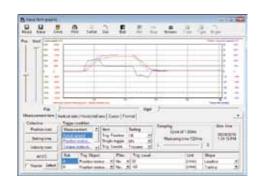


Trial run

This function supports positioning with the Z-phase search and software limit.



Significant increase of measuring objects Multi-functional waveform graphic



<CAUTION>

This software is applicable only to A5II, A5, A5IIE, A5E series.

To apply this software to conventional product (A, AIII, E or A4 series), consult our distributors.

	CPU	Pentium III 512MHz or more
	Memory	256MB or more (512MB recommended)
Personal	Hard disk capacity	Vacancy of 512MB or more recommended
computer	OS	Windows® XP SP3 (32-bit Ver.), Windows® VISTA SP1 (32-bit Ver.) Windows® 7 (32-bit Ver., 64-bit Ver.)
		[English, Japanese, Chinese or Korean version]
	Serial communication port	USB port
Dioploy	Resolution	1024 x 768pix or more (desirably 1024 x 768)
Display	Number of colors	24bit colors (TrueColor) or more

Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors

MINAS A5 Family

Features



Command Control Mode A5II A5

- · Command control mode is available for Position. Speed (including eight internal velocities) and Torque.
- Using parameter settings, you can set up one optional command control mode or two command control modes by switching.
- · According to suitable application utility, proper optional command control mode can be chosen.

Full-closed Control

A5II A5

AB-phase linear scale (for general all-purpose products) or serial scale (for products with Panasonic's exclusive format) scales can be used (P.14).

SEMI F47





- Includes a function in compliance with the SEMI F47 standard for voltage sag immunity under no load or light load.
- · Ideal for the semiconductor and LCD industries. Notes:
- 1) Excluding the single-phase 100-V type.
- 2) Please verify the actual compliance with your machine checking the F47 standard for voltage sag immunity.

Inrush Current Preventive Function

A5II A5 A5IIE A5E





 This driver is equipped with a rush current preventive resistor to prevent the circuit breaker from shutting off the power supply as a result of inrush current occurring at power-on.

Regenerative Energy Discharge

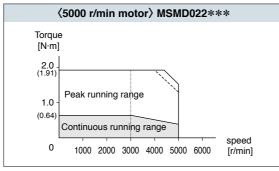


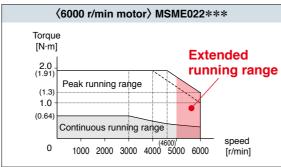
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not contain a regenerative resistor. Optional regenerative resisters are recommended.
- Frame C to frame F model drivers contain one regenerative resistor; however, adding an optional regenerative resistor provides additional regeneration capability.

6000-rpm capability A5II A5 A5IIE A5E

The MSME motor (under 750 W) can accommodate a maximum speed of 6000 r/min.

[Comparison of new and conventional 200 W]





Gear head

Gear heads for 6000 r/min and 5000 r/min motors are available. Set 5000 r/min gear head only to 5000 r/min motor, and set 6000 r/min gear head only to 6000 r/min motor.

When customers prepare a gear head, use it as follows:

MSME → 6000 r/min

MSMD → 5000 r/min MHMD

Dynamic Braking A5II A5 A5I

- · With parameter settings, you can select dynamic braking, which shorts servomotor windings U, V and W at Servo-OFF, during positive direction/ negative direction, and during power shutdown and tripping of the circuit breaker for over travel inhibition.
- * The dynamic brake circuit of H-frame is external.
- The desired action sequence can be set up to accommodate your machine requirements.

Parameter Initialization A5II A5 A5IIE





Using the front panel or by connecting a PC, you can restore the parameters to the factory settings.

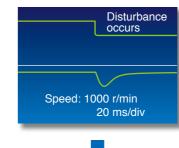
Disturbance Observer A5II A5 A5IIE A5E



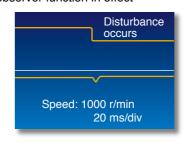


By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

Disturbance observer function not in effect



Disturbance observer function in effect



Torque Feed Forward A5II A5 A5IIE

The Torque Feed Forward function performs a comparison with feedback and calculates the amount of torque to add to the necessary torque command in the command for actuation.

Friction Torque Compensation



This function reduces the effect of machine-related friction and improves responsiveness. Two kinds of friction compensation can be set up: unbalanced load compensation, which compensates with a constant operational offset torque; and kinetic friction, which changes direction in response to the direction of movement.

3-Step Gain

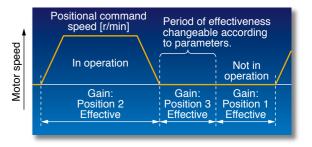


A 3-step gain switch is available in addition to the normal gain switch.

This chooses appropriate gain tunings at both stopping and running.

The 3-step gain switch gives you choices of 3 different tunings for normal running, stopping for faster positioning and at stopping.

The right gaining tunings achieve lower vibration and quicker positioning time of your application.



Inertia Ratio Conversion A5II A5 A5IIE

You can adjust right inertia ratio by Inertia Ratio Conversion input(J-SEL).

When you have significant load inertia changes, it can adjust unbalanced speed and position gain turning

It ends up quicker response of your system.

Input/Output A5II A5 Signal Assignment

You can use the parameters to arbitrarily allocate the universal 10 inputs and 6 outputs. (Inputs can be selected as either A contacts or B contacts). The Panaterm setup software provides an exclusive screen for a more simplified setup.

Torque Limiter Switching A5II A5 A5IIE A5E

You can use the I/Os to set up torque limits. These can be used for applications such as simplified pressure, tension control, and sensor-less homing.

Applicable international safety standards















			(A5II, A5 series) (A5IIE, A5E series)
		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 IEC61800-3	_
	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
EC Directives	Machinery Directives Functional safety ¹	ISO13849-1(PL d) (Cat. 3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standards		UL508C (E164620)	UL1004-1, UL1004-6 (E327868)
CSA Standard	s	C22.2 No.14	C22.2 No.100
Radio Waves A (South Korea)		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	_

IEC: International Electrotechnical Commission EN: Europaischen Normen

EMC : Electromagnetic Compatibility UL : Underwriters Laboratories CSA: Canadian Standards Association Pursuant to the directive 2004/108/EC, article 9(2) Panasonic Testing Centre Panasonic Service Europe, a division of

Panasonic Marketing Europe GmbH Winsbergring 15, 22525 Hamburg, F.R. Germany

This servo driver is a Class A commercial broadcasting radio wave generator not designed for home use. The user and dealer should be aware of this fact.

A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의

지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

This product is not an object of China Compulsory Certification (CCC).

Applicable External Scales

A5II A5

Applicable External Scale	Manufacturer	Model No.	Resolution [µs]	Maximum Speed (m/s) ^{⁺3}
Parallel Type (AB-phase)	General	_	Maximum s	speed after ation: 4 Mpps
		SR75	0.01 to 1	3.3
		SR85	0.01 to 1	3.3
Carial Type (Ingramental)	Magnescale Co., Ltd.	SL700-PL101RP/RHP	0.1	10
Serial Type (Incremental)		SL710-PL101RP/RHP	0.1	10
		BF1	0.001/0.01	0.4/1.8
	Nidec Sankyo Corporation	PSLH	0.1	6
		LIC2197P/LIC2199P	0.05/0.1	10
	DR. JOHANNES HEIDENHAIN GmbH	LIC4193P/LIC4195P LIC4197P/LIC4199P	0.001 /0.005 /0.01	10
		SVAP	0.05	2.5
	Fagor Automation S.Coop.	SAP	0.05	2.5
		GAP	0.05	2.5
		LAP	0.1	2
Serial Type (Absolute)	Magnessala Co. Ltd	SR77	0.01 to 1	3.3
	Magnescale Co., Ltd.	SR87	0.01 to 1	3.3
	Mitutous Comparation	AT573A	0.05	2.5
	Mitutoyo Corporation	ST778A(L)	0.1	5
			0.001	0.4
	Renishaw plc	RESOLUTE	0.05	20
			0.1	40

^{*3} The maximum speed is a characteristic of the driver. It is limited by the configuration of the machine and the system.

[•] When export this product, follow statutory provisions of the destination country.

^{*1} A5IIE and A5E series doesn't correspond to the functional safety standard.

^{*2} Information related to the Korea Radio Law

Motor Line-up

MINAS A5 Family

Мо	tor Line	-up								
					Rated	Rotary	encoder			
	Мо	tor	Voltage	Rated output (kW)	rotational speed (Max. speed) (r/min)	20-bit incremental	17-bit absolute	Enclosure (*1)	Features	Applications
	MSMD		100 V 200 V	0.05 0.1 0.2 0.4	3000 (5000)	0	0	IP65	Leadwire typeSmall capacitySuitable for high	
			200 V	0.75	3000 (4500)	Ü	Ü	00	speed application • Suitable for all applications	Bonder Semiconductor production equipment
Low inertia			100 V 200 V	0.05 0.1 0.2 0.4	3000	0	0	IP67	Small capacitySuitable for high speed application	Packing machines etc
nertia	MSME		200 V	0.75	(6000)				Suitable for all applications	
	MISIME		400 V	0.75 1.0 1.5	3000 (5000)				Middle capacity Suitable for the machines directly	• SMT machines • Food
			200 V 400 V	2.0 3.0	3000	0	0	IP65 ^(*2)	coupled with ball screw and high stiffness and high repetitive applica-	machines • LCD production equipment
			400 V	4.0 5.0	(4500)				tion	etc
	MDME		200 V	0.4 0.6 1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000)	0	0	• Middle capacity • Suitable for low stiffness machine with belt driven	 Suitable for low 	• Conveyors • Robots • Machine
			400 V	7.5 (*3)	1500 (3000)					tool etc
Midd				11.0 (*3) 15.0 (*3)	1500 (2000)					
Middle inertia	MFME (Flat type)		200 V 400 V	1.5 2.5 4.5	2000 (3000)	0	0	IP67	Middle capacity Flat type and suitable for machines with space limitation	Robots Food machines etc
	MGME (Low speed/ High torque type		200 V 400 V	3.0 4.5 (*3) 6.0 (*3)	1000 (2000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low speed and high torque application	Conveyors Robots Textile machines etc
	мнмр		100 V 200 V	0.2	3000 (5000)	0	0	IP65	Leadwire type Small capacity Suitable for low	• Conveyors • Robots
High inertia			200 V	0.75	3000 (4500)			00	stiffness machines with belt driven	etc
nertia	мнме		200 V 400 V	1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines with belt driven, and large load	• Conveyors • Robots • LCD manu- facturing equipment
				7.5 (*3)	1500 (3000)				moment of inertia	etc

^(*1) Except for output shaft, and connector. (*2) IP67 motor is also available. (*3) Only IP67 motor is avilable.

Model Designation

* For combination of elements of model number, refer to Index.

Servo Motor

	M S M E	5	;	Α	Z	G	1	S	*	; >	K
Symbol	Туре							Motor	. 61	200	ific
MSMD	Low inertia (50 W to 750 W)							MSMI			
MSME	Low inertia (50 W to 5.0 kW)							INIOINI.	-(0	•	
MDME	Middle inertia (400 W to 15.0 kW)							Symbo	٦		
MFME	Middle inertia (1.5 kW to 4.5 kW)							Cymbo	" F	Rou	nd
MGME	Middle inertia (0.9 kW to 6.0 kW)							Α	T	•	,
MHMD	High inertia (200 W to 750 W)							В		•	
MHME	High inertia (1.0 kW to 7.5 kW)							С	+	•	

Motor rated output

Symbol	Rated output	Symbol	Rated output
5A	50 W	25	2.5 kW
01	100 W	30	3.0 kW
02	200 W	40	4.0 kW
04	400 W	45	4.5 kW
06	600 W	50	5.0 kW
80	750 W	60	6.0 kW
09	0.9 kW	75	7.5 kW
10	1.0 kW	C1	11.0 kW
15	1.5 kW	C5	15.0 kW
20	2.0 kW		

Voltage specification

voltage specification							
Symbol	Specifications						
1	100 V						
2	200 V						
4	400 V						
Z	100 V/200 V common (50 W only)						

Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
G	Incremental	20-bit	1048576	5
S	Absolute	17-bit	131072	7

* S: can be used in incremental.

Special specifications

Motor specifications MSME(50 W to 750 W [200 V]), MSMD, MHMD

		Shaft		Holding	g brake	Oil	seal
Symbol	Round	D-cut	Key-way, center tap	without	with	without	with
Α	•						
В	•						
С	•			•			•
D	•				•		•
N		•					
Р					•		
Q		•		•			•
R					•		•
S			•				
T			•		•	•	
U			•				•
V			•		•		•

MSME(750 W [400 V], 1.0 kW to 15.0 kW), MDME, MFME, MGME, MHME

Sh	aft	Holding brake		Oil seal	
Round	Key-way	without	with	without	with
•					•
•					•
	•	•			•
	•		•		•
		Shaft Round Key-way			

Design order

Symbol	Specifications
С	IP65 motor
1	IP67 motor (MSMD, MHMD: IP65)

Motor with reduction gear

M S M E 0 1 1 G 3 1 N Motor rated output

Symbol	Type		
MSMD	Low inertia (100 W to 750 W)		
MSME	Low inertia (100 W to 750 W)		
MHMD	High inertia (200 W to 750 W)		

| Symbol | Rated output | | 01 | 100 W | | 02 | 200 W | 04 400 W 08 750 W

Voltage specifications Symbol Specifications 1 100 V 200 V

Rotary encoder specifications

Syn	nbol	Format	Pulse counts	Resolution	Wires
(à	Incremental	20-bit	1048576	5
5	3	Absolute	17-bit	131072	7

Gear ratio, gear type

C. mahal	Gear	IVIC	otor ou	Gear		
Symbol	reduction ratio	100	200	400	750	type
1N	1/5	•	•	•	•	
2N	1/9	•	•	•		For high
3N	1/15	•	•	•	•	accuracy
4N	1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.

Motor structure

5 0 5 E **

Cymbol	Shaft	Holding	g brake
Symbol	Key-way	without	with
3	•	•	
4	•		•

^{*} S: can be used in incremental.

Speed, Position, Torque, Full-closed type	M	Α	D	K	T	1
Position control type	M	Α	D	K	Т	1
Frame symbol *						

MBD Frame B MFD Frame F									
MAD Frame A MED Frame E MBD Frame B MFD Frame F	Frame symbol *								
MBD Frame B MFD Frame F	Symbol	Frame	Symbol	Frame					
	MAD	Frame A	MED	Frame E					
	MBD	Frame B	MFD	Frame F					
MCD Frame C MGD Frame G	MCD	Frame C	MGD	Frame G					

MDD Frame D MHD Frame H * A5IIE, A5E series is up to F-frame

Series		
Symbol	Velocity, Position, Torque, Full-Closed type	Position control type
K	A5I series	A5 I E series
Н	A5 series	A5E series

Power device Max. current rating Symbol Current rating

Syllibol	Current raining	1	
T1	10 A		voltage
T2	15 A	specifi	cations
T3	30 A	Symbol	Specifications
T4	35 A	1	Single phase, 100
T5	50 A	3	3-phase, 200 V
T7	75 A	4	3-phase, 400 V
TA	100 A	5	Single/3-phase, 20
TB	150 A		
TC	300 A		

Only position control

 Current detector current rating 									
Symbol	Specifications	Symbol	Specifications						
05	5 A	40	40 A						
07	7.5 A	64	64 A						
10	10 A	90	90 A						

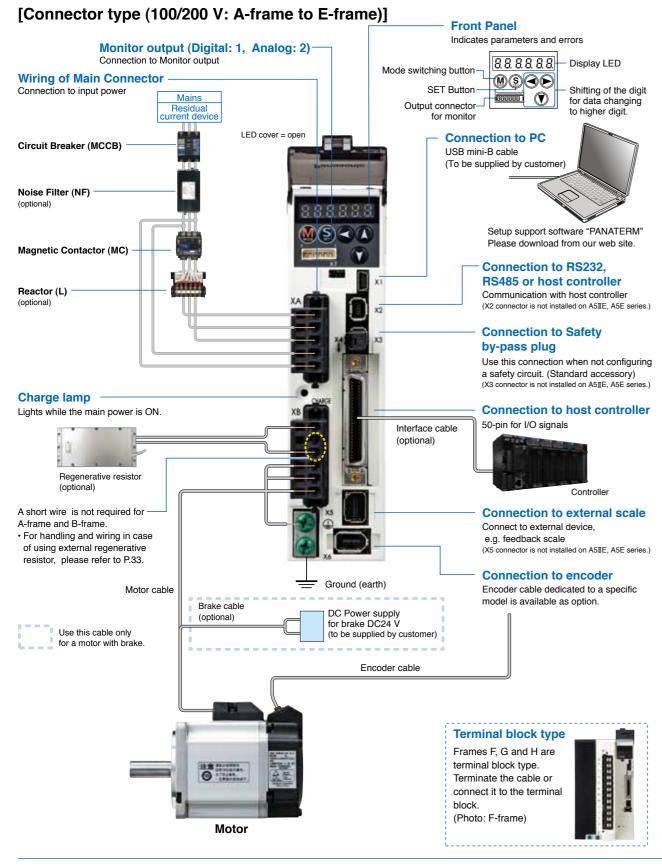
Special specifications

Special specifications

	05	5 A	40	40 A
	07	7.5 A	64	64 A
	10	10 A	90	90 A
;	12	12 A	A2	120 A
) V	20	20 A	B4	240 A
	30	30 A		

o io up	to i mame.	T4	35 A	1	Single phase, 100 V
		T5	50 A	3	3-phase, 200 V
sition,	Desition control	T7	75 A	4	3-phase, 400 V
,	Position control type	TA	100 A	5	Single/3-phase, 200 V
A	ιγρο				

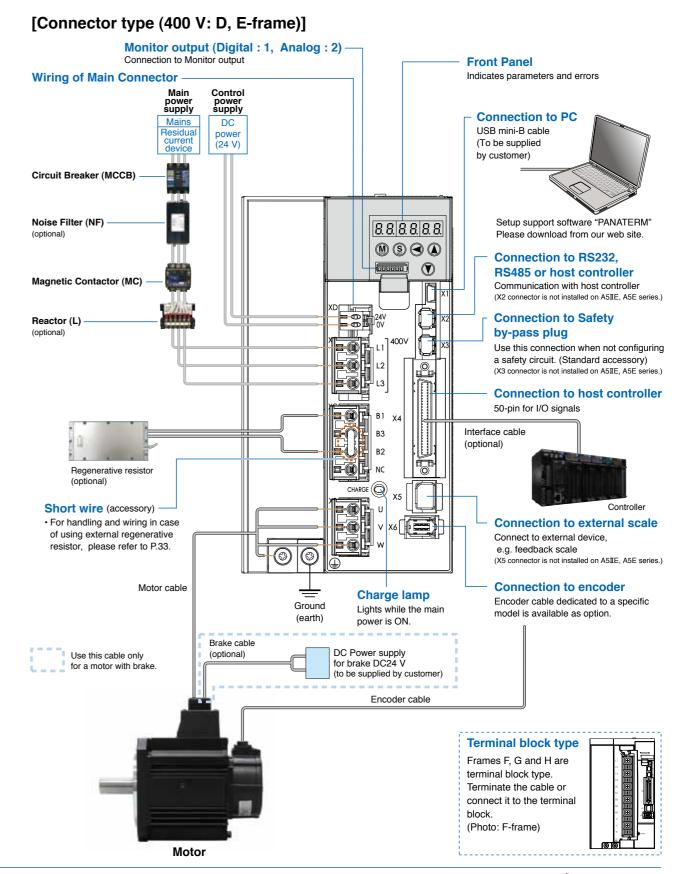
^{*} See the P.21 to P.28, driver and motor combination.



<Caution>

Apply adequate tightening torque to the product mounting screw by taking into consideration strength of the screw and the characteristics of material to which the product is installed. Overtightening can damage the screw and/or material; undertightening can result in loosening.

Example) Steel screw (M5) into steel section: 2.7 N·m to 3.3 N·m.



<Note

Initial setup of rotational direction: positive = CCW and negative = CW. Pay an extra attention.

Positive direction (CCW)



Driver and List of Applicable Peripheral Equipments

MINAS A5 Family

Driver	Applicable motor	Voltage *1	Rated output	Required Power (at the (rated load)	Circuit breaker (rated (current)	Noise filter (Single phase 3-phase	Surge absorber (Single phase 3-phase	Noise filter for signal	Rated operating current of magnetic (contactor Contact configuration *2	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *4	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *5	Diameter and withstand voltage of brake cable
MADH	MSME	Single phase, 100 V	50 W to 100 W	approx. 0.4 kVA		DV0P4170	DV0P4190								
MADK	MSMD MHMD	Single/ 3-phase,	50 W to 200 W	approx. 0.5 kVA		DV0P4170	DV0P4190								
	140145	200 V Single	200 W	approx.	10 A	DV0PM20042 DV0P4170	DV0P1450 DV0P4190			0.75 mm²/				0.75 mm²/	0.28 mm ² to 0.75 mm ² /
MBDH MBDK	MSME MSMD MHMD	100 V Single/ 3-phase,	400 W	0.5 kVA approx.		DV0P4170	DV0P4190		20 A (3P+1a)	AWG18 600 VAC or more				AWG18 600 VAC or more	AWG22 to AWG18 100 VAC
	IVII IIVID	200 V Single		0.9 kVA approx.		DV0PM20042	DV0P1450	-		ormore		0.75 mm²/		ormore	or more
MCDH	MSME MSMD	100 V Single/	400 W	0.9 kVA		DV0PM20042	DV0P4190					AWG18 600 VAC			
MCDK	MHMD	3-phase, 200 V	750 W	approx. 1.3 kVA	15 A							or more			
	MDME MHME		1.0 kW	approx. 1.8 kVA											
	MGME	Single/	0.9 kW	approx. 1.8 kVA approx.			DV0P4190 DV0P1450	DV0P1460	30 A		Conn		Conn		
	MSME MHME	3-phase, 200 V	1.0 kW	1.8 kVA	20 A	DV0P4220			(3P+1a)		ection		ection		
	MDME MFME MSME		1.5 kW	approx. 2.3 kVA							Connection to exclusive connector		Connection to exclusive connector		
MDDH	MDME MDME		400 W	approx. 0.9 kVA approx.							ive co		ive co		
WIDDIX	MSME		600 W 750 W	1.2 kVA approx. 1.6 kVA							onnect		nnect		
	MSME MDME	3-phase,	1.0 kW	approx.	10 A	FN258L-16-07	DV0PM20050		20 A	2.0 mm ² / AWG14	Q	0.52 mm ² / AWG20	ğ	2.0 mm²/ AWG14	
	MHME MGME	400 V	0.9 kW	1.8 kVA	10 A	(Recommended) component	D VOI INIZOUSU		(3P+1a)	600V VAC or more		100 VAC or more		600V VAC or more	
	MSME MDME MFME		1.5 kW	approx. 2.3 kVA											
	MHME MDME MSME MHME	3-phase,	2.0 kW	approx. 3.3 kVA	30 A	DV0PM20043	DV0P1450	DV0P1460 RJ8035	60 A			0.75 mm²/ AWG18			
MEDH	MFME	200 V	2.5 kW	approx. 3.8 kVA	0071	D VOI MIZOU-IO	5701 1400	(Recommended) component *6	(3P+1a)			600 VAC or more			
MEDK	MSME MDME	3-phase,	2.0 kW	approx. 3.3 kVA		FN258L-16-07			30 A			0.52 mm²/ AWG20			
	MHME	400 V	2.5 kW	approx.	15 A	(Recommended) component	DV0PM20050	DV0P1460	(3P+1a)			100 VAC or more			
	MGME		2.0 kW	3.8 kVA approx. 3.8 kVA											
	MDME MHME MSME		3.0 kW	approx. 4.5 kVA					60 A (3P+1a)		11 mm or smaller		11 mm or smaller		
	MGME MDME MHME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA	50 A	DV0P3410	DV0P1450	DV0P1460 RJ8035 (Recommended)			(O) 	0.75 mm²/ AWG18 600 VAC	(O) 		
	MSME MFME		4.5 kW	approx. 6.8 kVA				t component / *6	100 A		Terminal block	or more	Terminal block		0.75 mm ² / AWG18
	MGME MDME MHME		5.0 kW	approx. 7.5 kVA					(3P+1a)	3.5 mm²/	M5		M5	3.5 mm²/	100 VAC or more
MFDH MFDK	MSME MGME		2.0 kW	approx. 3.8 kVA						AWG12 600 VAC				AWG12 600 VAC	
	MSME		2.0 KVV	3.8 kVA						or more				or more	
	MDME MGME MHME		3.0 kW	approx. 4.5 kVA							10 mm or smaller	0.75 mm²/	7 mm or smaller		
	MSME MDME MHME	3-phase, 400 V	4.0 kW	approx. 6.0 kVA	30 A	FN258L-30-07 (Recommended) component	DV0PM20050	DV0P1460	60 A (3P+1a)		φ4.3	AWG18 100 VAC	ф3.2		
	MFME MGME		4.5 kW	approx. 6.8 kVA							Terminal block M4	or more	Terminal block M3		
	MSME MDME MHME		5.0 kW	approx. 7.5 kVA											
	MDME	3-phase,	7.5 kW	approx. 11 kVA approx.		FS5559-60-34			100 A		11 mm or smaller	0.75 mm²/ AWG18	10 mm or smaller		
	MGME	200 V	6.0 kW	9.0 kVA approx.	60 A	(Recommended) component	DV0P1450		(3P+1a)	5.3 mm ² /		600 VAC or more			
MGDH MGDK	MHME		7.5 kW	11 kVA approx.		FN258-42-07		-		AWG10 600 VAC	φ5.3		φ5.3	13.3 mm²/ AWG6	
	MGME	3-phase, 400 V	6.0 kW	approx. 9.0 kVA	30 A	or FN258-42-33	DV0PM20050	DV0P1460	60 A (3P+1a)	or more	Terminal block	0.75 mm ² / AWG18 100 VAC	Terminal block	600 VAC or more	
	МНМЕ	400 \$	7.5 kW	approx. 11 kVA		(Recommended) component		RJ8095 (Recommended)	(31 +14)		M5	or more	M5		
		0 n	11 kW	approx. 17 kVA	100 A	FS5559-80-34		T400-61D	150 4		16 mm or	0.75 mm²/	10 mm or	04.4 2:	
		3-phase, 200 V	15 kW	approx. 22 kVA	125 A	(Recommended component	DV0P1450	(Recommended component *6	150 A (3P+1a)	13.3 mm²/	smaller	AWG18 600 VAC or more	smaller	21.1 mm ² / AWG4 600 VAC or more	
MHDH	MDME	3-phase,	11 kW	approx. 17 kVA	50 A	FN258-42-07 or	DVODIAGOGG		100 A	AWG6 600 VAC or more *3	Δ φ6.4 Terminal	0.75 mm²/ AWG18	/ φ4.3 Terminal	13.3 mm²/ AWG6 600 VAC or more	
		400 V	15 kW	approx. 22 kVA	60 A	FN258-42-33 (Recommended component	DV0PM20050		(3P+1a)	9	block M6	100 VAC or more	block M4	21.1 mm²/ AWG4 600 VAC or more	

- *1 Select peripheral equipments for single/3phase common specification according to the power source.
- *2 For the external dynamic brake resistor, use the magnetic contactor with the same rating as that for the main circuit.
- *3 When use the external regenerative resistor of the option (DV0PM20058, DV0PM20059), use the cable with the same diameter as the main circuit cable.
- *4 For the ground screw, use the same crimp terminal as that for the main circuit terminal block.
- *5 The diameter of the ground cable and the external dynamic brake resistor cable must be equal to, or larger than that of the motor cable.

The motor cable is a shield cable, which conforms to the EC Directives and UL Standards. (G, H-frame only)

- *6 Use thses products to suit an international standard.
- Related page

About circuit breaker and magnetic contactor

To comply to EC Directives, install a circuit break er between the power and the noise filter without fail, and the circuit breaker should conform to IEC Standards and UL recognized (Listed and (1) marked). Suitable for use on a circuit capable of delivering not more than 5000 Arms symmetrical amperes, below the maximum input voltage of the product.

If the short-circuit current of the power supply exceeds this value, install a current limit device (current limiting fuse, current limiting circuit breaker, transformer, etc.) to limit the short-circuit current.

<Remarks>

- Select a circuit breaker and noise filter which match to the capacity of power supply (including a load condition).
- Terminal block and protective earth terminals
- Use a copper conductor cables with temperature rating of 75 °C or higher.
- Use the attached exclusive connector for A-frame to E-frame, and maintain the peeled off length of 8 mm to 9 mm

Fastening torque list (Terminal block screw/Terminal cover fastening screw)

	Driver	Termina	al block screw		cover fastening screw
Frame	Terminal name	Nominal size	Fastening torque (N•m)	Nominal size	Fastening torque (N•m)
F(200 V)	L1, L2, L3, L1C, L2C, B1, B2, B3, NC, U, V, W	M5	1.0 to 1.7		
F(400 V)	24V,0V	М3	0.4 to 0.6	M3	0.19 to 0.21
F(400 V)	L1, L2, L3, B1, B2, B3, NC, U, V, W	M4	0.7 to 1.0	IVIO	0.19 10 0.21
G	L1C, L2C, 24V, 0V, DB1, DB2, DB3, DB4, NC	M5	1.0 to 1.7		
u	L1, L2, L3, B1, B2, NC, U, V, W	M5	2.0 to 2.4	M3	0.3 to 0.5
Н	L1C, L2C, 24V, 0V, DB1, DB2	M4	0.7 to 1.0	M5	2.0 to 2.5
П	L1, L2, L3, B1, B2, NC, U, V, W	M6	2.2 to 2.5	CIVI	2.0 10 2.5

Fastening torque list (Ground terminal screw/Connector to host controller [X4])

	Gro	ound screw		ector to host roller (X4)
Driver frame	Nominal size	Fastening torque (N•m)	Nominal size	Fastening torque (N•m)
A to E	M4	0.7 to 0.8		
G	M5	1.4 to 1.6	M2.6	0.3 to 0.35
Н	M6	2.4 to 2.6		

<Caution>

- Applying fastening torque larger than the maximum value may result in damage to the product.
- Do not turn on power without tightening all terminal block screws properly, otherwise, loose contacts may generate heat (smoking, firing).

<Remarks>

To check for looseness, conduct periodic inspection of fastening torque once a year.

Interface Cable

Connector Kit

Connector Kit for Motor

Connection

Connector Kit for

Connector Kit

Motor/Encoder Connection

Battery For Absolute Encoder

Battery Box Note) 8

Mounting

Encoder Cable

Motor Cable

Brake Cable

External

Resistor

Reactor

Noise Filter

Surge

Absorber

Noise Filter for Signal Lines

Regenerative

Bracket

Connector Kit for Motor/Brake Connection

for Power Supply Input

Interface Conversion Cable

Title

A-frame Single row type

tvpe

A-frame to D-frame

RS485, RS232

External Scale Encoder

Safety

Interface

A-frame

B-frame

C-frame

without Battery Box

with Battery Box

without Brake

50 Ω 25 W

100 Ω 25 W

25 Ω 50 W

50 Ω 50 W

30 Ω 100 W

20 Ω 130 W

DV0P3410

Single phase

3-phase (200 V)

DV0P220, DV0P221, DV0P222,

DV0P223, DV0P224, DV0P225,

DV0P227, DV0P228, DV0P20047 DV0P4170, DV0PM20042 DV0P4220, DV0PM20043

Note) 8

D-frame

Double row

A5 Fa

Part No.

DV0P4360 DV0P4120 DV0P4121

DV0P4130 DV0P4131 DV0P4132

DV0PM20032

DV0PM20033

DV0PM20034

DV0P4290

DV0P4380

DV0PM20035

DV0PM20040

DV0PM20024 DV0PM20025

DV0PM20026

DV0PM20010

DV0P4350

DV0P2990

DV0P4430 DV0PM20027

DV0PM20028

DV0PM20029 MFECA0**0EAD MFECA0**0EAM MFECA0**0MJD

MFECA0**0MKD MFECA0**0TJD

MFECA0**0TKD MFECA0**0EAE 188 MFECA0**0MJE

MFECA0**0MKE

MFECA0**0TJE MFECA0**0TKE MFMCA0**0EED MFMCA0**0NJD MFMCA0**0NKD 191

MFMCA0**0RJD MFMCA0**0RKD MFMCB0**0GET

MFMCB0**0PJT

MFMCB0**0SJT

MFMCB0**0SKT

DV0P4280

DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285

DV0P4190

DV0P1450

DV0P1460

250

251

253

254

MFMCB0**0PKT 196

Analog Monitor Signal DV0PM20031

202

203

206

			Motor				Driver		Power				Optional pa	rts				
		D	Outer	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series		capacity	Encode	er Cable		Motor	Cable	Brake Cable	External	Reactor	Noise Filter
N	lotor series	Power supply	Output (W)	Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type Note) 2	Part No. (Position control type Note) 3,4	Frame	rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,8		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase
			50	MSMD5AZ ☐ 1 *	49	MAD \diamondsuit T1105	MAD ♦ T1105E	Λ	Approx. 0.4							DV0P4280	DVORSSZ	
		Single	100	MSMD011 □ 1 *	51	MAD \diamondsuit T1107	MAD \diamondsuit T1107E	A-frame	Approx. 0.4							D V 0 F 4200	DVUFZZI	DV0P4170
		phase 100 V	200	MSMD021 □ 1 *	53	MBD ♦ T2110	MBD ◇ T2110E	B-frame	Approx. 0.5							DV0P4283	DV0P228	
	MSMD		400	MSMD041 □ 1 *	55	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9							DV0P4282	DV0P228	DV0PM20042
	(Leadwire)		50	MSMD5AZ ☐ 1 *	50	MAD ◇ T1505	MAD ◇ T1505E		Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE		MFN 0 * * (MFMCB 0 * * 0GET	DV0D4004		
	3000 r/min	Single	100	MSMD012 □ 1 *	52	MAD \diamondsuit T1505	MAD \diamondsuit T1505E	A-frame	Approx. 0.5		Note) 7					DV0P4281	DV0P227 DV0P220	DV0P4170
		phase/ 3-phase	200	MSMD022 □ 1 *	54	MAD \diamondsuit T1507	MAD ◇ T1507E		Approx. 0.5								D V 01 220	DV0PM20042
		200 V	400	MSMD042 □ 1 *	56	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9							DV0P4283	DV0P228	
Low			750	MSMD082 □ 1 *	57	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx.								DV0P220	DV0PM20042
Low inertia			50	MSME5AZ ☐ 1 *	65	MAD \diamondsuit T1105	MAD \diamondsuit T1105E		Approx. 0.4	MFECA	MFECA			ИСА	MFMCB	D) (0D 4000	D) (ODOOT	
ש		Single	100	MSME011 □ 1 *	67	MAD \diamondsuit T1107	MAD ◇ T1107E	A-frame	Approx. 0.4	0 * * 0MJD	0 * * 0MJE		0 * * (For mo direct	ovable,\ ion of	0 * * 0PJT (For movable, direction of	DV0P4280	DV0P227	DV0P4170
		phase 100 V	200	MSME021 □ 1 *	69	MBD \diamondsuit T2110	MBD ♦ T2110E	B-frame	Approx. 0.5	direction of motor shaft /	direction of motor shaft MFECA		\ motor	ИСА [*]	MFMCB	DV0P4283	D) (oDooo	
	MSME		400	MSME041 □ 1 *	71	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9	0 * * 0MKD	0 * * 0MKE				0 * * 0PKT For movable, opposite direction of motor shaft	DV0P4282	DV0P228	DV0PM20042
	(Connector)		50	MSME5AZ ☐ 1 *	66	MAD \diamondsuit T1505	MAD \diamondsuit T1505E		Approx. 0.5	opposite direction of motor shaft MFECA	opposite direction of motor shaft MFECA		MFN	ИCA	MFMCB	DV0D4004		
	3000 r/min	Single	100	MSME012 □ 1 *	68	MAD \diamondsuit T1505	MAD \diamondsuit T1505E	A-frame	Approx. 0.5	0 * * 0TJD / For fixed, \	0 * * 0TJE / For fixed, \		0 * * (For t	ixed, \ ion of	0 * * 0SJT For fixed, direction of	DV0P4281	DV0P227 DV0P220	DV0P4170
		phase/ 3-phase	200	MSME022 □ 1 *	70	MAD \diamondsuit T1507	MAD ◇ T1507E		Approx. 0.5	direction of motor shaft/ MFECA	direction of motor shaft/ MFECA		\motor MFN 0 * * (ИCA	\motor shaft/ MFMCB 0 * * 0SKT		D V 01 220	DV0PM20042
		200 V	400	MSME042 □ 1 *	72	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9	0 * * 0TKD	0 * * 0TKE		For to	ixed, direction	For fixed, opposite direction	DV0P4283	DV0P228	
			750	MSME082 □ 1 *	73	MCD ♦ T3520	MCD ♦ T3520E	C-frame	Approx. 1.3	opposite direction of motor shaft	opposite direction of motor shaft		Not	e) 6	of motor shaft /		DV0P220	DV0PM20042
		Single	200	MHMD021 □ 1 *	59	MBD ◇ T2110	MBD ◇ T2110E	B-frame	Approx. 0.5							DV0P4283	DVODOOO	DV0P4170
Ĩ	мнмр	phase 100 V	400	MHMD041 □ 1 *	61	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9							DV0P4282	DV0P228	DV0PM20042
High inertia	(Leadwire) type	Single	200	MHMD022 □ 1 *	60	MAD ◇ T1507	MAD ♦ T1507E	A-frame	Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE		MFN 0 * * 0		MFMCB 0 * * 0GET		DV0P227 DV0P220	DV0P4170
ertia	3000 r/min	phase/ 3-phase	400	MHMD042 □ 1 *	62	MBD \diamondsuit T2510	MBD ◇ T2510E	B-frame	Approx.		Note) 7					DV0P4283	DV0P228	DV0PM20042
		200 V	750	MHMD082 □ 1 *	63	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx.								DV0P220	DV0PM20042
No	old Doton	opoodor	opooifi	ications: \Bar Mater	nooific	notion: * (rofor t	0 D16)			1	1	1	Notal 6 Co	blog for one	noito to outou	t shoft sonn	ot bo used	with EO W or

: IP67

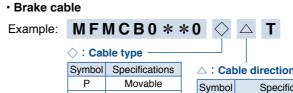
Note) 1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.16)

- Note) 2 \diamondsuit : Drivers series K: A5II series H: A5 series
- Note) 3 \diamondsuit : Drivers series K: A5IIE series H: A5E series
- Note) 4 Because A5IIE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

50 W to 750 W

Note) 5 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m) (Example. 3 m: MFECA0030EAM)

- Note) 6 Cables for opposite to output shaft cannot be used with 50 W or 100 W motor.
- Note) 7 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.
- Note) 8 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.



• Selection of cable for MSME motor (Movable: For application where the cable is movable. Fixed: For application where the cable is fixed.

21

R

Fixed

· Encoder cable Example: $MFECA0**0 \diamondsuit \triangle \square$ Symbol Specifications : Cable direction M Movable Specifications

: Encoder Specifications Fixed Specifications Direction of motor shaft D 20-bit Incremental Opposite direction of E 17-bit Absolute

Example: $MFMCA0**0 \diamondsuit \triangle D$ Symbol Specifications \triangle : Cable direction N Movable

Specifications Direction of motor shaft Opposite direction of

 ∴ Cable direction Specifications S Fixed Direction of motor shaft Opposite direction of

0.4 kW to 5.0 kW IP65 motor

A5 Family

Table of Part Numbers and Options

			Motor				Driver		Power				Optional	parts					· Options (IP6	55 motor)
						A5II series	A5IIE series		capacity	Encode	er Cable		Motor (Cablo	Brake					Title
		Dawar	Outnut	Part No.	Rating/	A5 series Part No.	A5E series		/ at \	Encode	er Cable		Wotor	Cable	Cable	External	Reactor		Interface Cable	
ı	Motor series	Power supply	Output (W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	Part No. (Position control type Note) 3,4	Frame	(rated load) (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,8		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	Interface Conve	ersion Cable
		Single phase/		MSME102 □ C * MSME152 □ C *	74 75	MDD ♦ T5540	MDD ♦ T5540E	D-frame	Approx. 1.8 Approx. 2.3				MFMCD 0**2ECD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220		A-frame S
		200 V	2000	MSME202 □ C *		•	MED ♦ T7364E	F-frame		MFECA 0**0ESD	MFECA 0**0ESE	0	J ZECD	0**2FCD	_	DV0P4285	DV0P222 DV0P223	DV0PM20043	Connector Kit for Power	to D-frame by
Low		3-phase 200 V	3000	MSME302 □ C *	77	MFD \diamondsuit TA390	MFD \diamondsuit TA390E		Approx. 4.5	0 0200	0 0202		MFMCA	MFMCA		Note) 6 DV0P4285	DV0P224		Supply Input Connection	E-frame (20 D-frame (40
v inertia	MSME 3000 r/min	200 V	5000	MSME402 □ C * MSME502 □ C *			MFD ♦ TB3A2E	F-frame	Approx. 7.5				0**3ECT	0**3FCT		×2 in parallel	DV0P225 Note) 7	DV0P3410	Connector Kit	E-frame (40
tia		3-phase	1000 1500	MSME084 C * MSME104 C * MSME154 C *	105 106	MDD \diamondsuit T3420 MDD \diamondsuit T3420	MDD ♦ T3420E MDD ♦ T3420E		Approx. 2.3	MFECA	MFECA		MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048	_	Recommended components	for Control Power Supply Input Connection	D-frame and E-frame (40
		400 V	3000 4000	MSME204	108 109	MFD ♦ T5440 MFD ♦ TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E		Approx. 4.5	0**0ESD	0**0ESE		MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 DV0PM20049 ×2 in parallel	Note) 7	P.252	Connector Kit for Motor Connection	A-frame to I E-frame (20 D-frame (40
		Single phase/ 3-phase 200 V		MDME102 □ C * MDME152 □ C *		MDD ♦ T3530	MDD ♦ T3530E	- D-frame	Approx. 1.8 Approx. 2.3				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Regenerative Resistor	D-frame (40
		200 V	2000	MDME202 □ C *	82	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE		2202	0 21 02	_	DV0P4285 Note) 7	DV0P222 DV0P223	DV0PM20043	Connector Kit for Motor/Encoder	
	MDME	3-phase 200 V	4000	MDME302	84	MFD ♦ TB3A2	MFD ♦ TA390E MFD ♦ TB3A2E MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225 Note) 7	DV0P3410		RS485, RS Safety Interface
Middle ii	2000 r/min	3-phase	600 1000 1500	MDME044	112 113 114	MDD ♦ T2407 MDD ♦ T2412 MDD ♦ T3420	MDD ♦ T2407E MDD ♦ T2412E MDD ♦ T3420E	D-frame	Approx. 0.9 Approx. 1.2 Approx. 1.8 Approx. 2.3		MFECA 0**0ESE		MFMCD 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048	_ Note) 7	Recommended components	Connector Kit Battery For Abs	External Sca Encoder Analog Mon solute Encode
inertia			3000 4000	MDME304 □ C *	116 117	MFD ♦ T5440 MFD ♦ TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E		Approx. 4.5				MFMCA 0**3ECT	MFMCA 0**3FCT	=	DV0PM20049 ×2 in parallel	,	P.252	Battery Box No Mounting Bracket	D-frame
	MGME	Single phase/ 3-phase 200 V	900	MGME092 □ C *	92	MDD \diamondsuit T5540	MDD \diamondsuit T5540E			MFECA 0**0ESD	MFECA 0**0ESE		MFMCD 0**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4220	Encoder Cable	without Batt with Battery Note) 8
	(Low speed/ High torque type	3-phase 200 V	2000 3000	MGME202 C * MGME302 C *	93 94	MFD ♦ TA390 MFD ♦ TB3A2	MFD \diamondsuit TA390E MFD \diamondsuit TB3A2E	F-frame	Approx. 3.8 Approx. 4.5			0	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P223 DV0P224	DV0P3410		without Bra
	1000 r/min	3-phase 400 V	2000	MGME094 □ C * MGME204 □ C * MGME304 □ C *	126	MFD 🔷 T5440	MFD 🔷 T5440E			MFECA 0**0ESD	MFECA 0**0ESE	0	MFMCD 0**2ECD MFMCA 0**3ECT	MFMCE 0**2FCD MFMCA 0**3FCT	_	DV0PM20048 DV0PM20049 x2 in parallel	Note) 7	Recommended components P.252	Motor Cable	
		Single phase/ 3-phase	1000	MHME102	97	MDD 🔷 T3530	MDD ♦ T3530E MDD ♦ T5540E	D-frame	Approx. 1.8 Approx. 2.3				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228/ DV0P222 DV0PM20047/ DV0P222	DV0P4220		with Brake 50 Ω 25 W
_		200 V 3-phase		MHME202 □ C * MHME302 □ C *			MED ♦ T7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE		MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 6	DV0P223 DV0P224	DV0PM20043	External	100 Ω 25 W 25 Ω 50 W 50 Ω 50 W
High inertia	MHME 2000 r/min	200 V	4000 5000	MHME402	101 102	MFD ♦ TB3A2 MFD ♦ TB3A2	MFD ♦ TB3A2E MFD ♦ TB3A2E		Approx. 7.5			0	MFMCA 0**3ECT MFMCD	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225 	DV0P3410	Regenerative Resistor	30 Ω 100 W 20 Ω 130 W 120 Ω 80 W
-		3-phase 400 V	1500 2000	MHME154 □ C * MHME204 □ C *	131 132	MDD ♦ T3420 MED ♦ T4430	MDD ♦ T3420E MED ♦ T4430E	D-frame	Approx. 2.3 Approx. 3.3	0**0FSD	MFECA 0**0ESE	0	0**2ECD MFMCE 0**2ECD	0**2FCD MFMCE 0**2FCD	_	DV0PM20049	 Note) 7	Recommended components	Reactor	80 Ω 190 W DV0P220, I DV0P223, I DV0P227, I
		-700 V	4000	MHME304	134	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5	. 0100	O OLOL		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel		P.252	Noise Filter	DV0P4170, DV0P4220, DV0P3410

Note) 1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.16)

Please buy the battery part number "DV0P2990" separately.

	Title		Part No.	l
Interface Cable			DV0P4360	
			DV0P4120	
			DV0P4121	
Interface Conve	rsion Cable)	DV0P4130	
			DV0P4131	1
			DV0P4132	1
	A frama	Single row	DV0PM20032	İ
Connector Kit	to D-frame	ype Double row	DV0PM20032	
for Power Supply Input	l l	ype		
Connection	E-frame (2	,	DV0PM20044	
	D-frame (4	,	DV0PM20051	l
	E-frame (4	100 V)	DV0PM20052	
Connector Kit for Control Power Supply Input Connection	D-frame a E-frame (4		DV0PM20053	
Connector Kit	A-frame to	D-frame	DV0PM20034	1
for Motor	E-frame (2	200 V)	DV0PM20046	1
Connection	D-frame (4	400 V)	DV0PM20054	1
Connector Kit	E-frame		DV0PM20045	١
for Regenerative	D-frame (4	400 V)	DV0PM20055	١
Resistor	D-liame (-	+00 V)		
			DV0P4310	
Connector Kit fo	-		DV0P4320	
Motor/Encoder (Jonnection		DV0P4330	
	D0 10= D	0000	DV0P4340	
	RS485, R	S232	DV0PM20024	
	Safety		DV0PM20025	
Connector Kit	Interface		DV0P4350	ļ
	External S	cale	DV0PM20026	l
	Encoder		DV0PM20010	ļ
		nitor Signal	DV0PM20031	ļ
Battery For Abso	olute Encoc	ler	DVDDDDDD	
-		101	DV0P2990	
Battery Box Not		.01	DV0P4430	
-	te) 8 D-frame		DV0P4430 DV0PM20030	
Battery Box Not Mounting Bracket	te) 8 D-frame without Ba	attery Box	DV0P4430	
Battery Box Not Mounting	te) 8 D-frame	attery Box	DV0P4430 DV0PM20030	
Battery Box Not Mounting Bracket	D-frame without Ba	attery Box	DV0P4430 DV0PM20030 MFECA0**0ESD	
Battery Box Not Mounting Bracket	D-frame without Ba	attery Box	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE	
Battery Box Not Mounting Bracket	D-frame without Ba with Batte Note) 8	attery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD	
Battery Box Not Mounting Bracket	D-frame without Ba	attery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD	
Battery Box Not Mounting Bracket	D-frame without Ba with Batte Note) 8	attery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD	
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Ba with Batte Note) 8	attery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD	
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Ba with Batte Note) 8	attery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD	
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Ba with Batte Note) 8	attery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT	
Battery Box Not Mounting Bracket Encoder Cable	be) 8 D-frame without Batte Note) 8 without Br	attery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD	
Battery Box Not Mounting Bracket Encoder Cable	be) 8 D-frame without Batte Note) 8 without Br	attery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD	
Battery Box Not Mounting Bracket Encoder Cable	be) 8 D-frame without Ba with Batte Note) 8 without Br	attery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable	be) 8 D-frame without Ba with Batte Note) 8 without Br with Brake	attery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable	be) 8 D-frame without Ba with Batte Note) 8 without Br with Brake 50 Ω 25 W 100 Ω 25	attery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable	te) 8 D-frame without Ba with Batte Note) 8 without Br with Brake $50 \Omega 25 W$ $100 \Omega 25$ $25 \Omega 50 W$	attery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	with Brake with Brake with Brake with Brake brace with Brake 50 \Omega 25 W 100 \Omega 25 25 \Omega 50 W 50 \Omega 50 W	attery Box ry Box ake W W V W	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	with Brake with Brake with Brake with Brake on Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100	attery Box ry Box ake V W V W W	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	te) 8 D-frame without Ba with Batte Note) 8 with Brake $50 \Omega 25 W$ $100 \Omega 25$ $25 \Omega 50 W$ $50 \Omega 50 W$ $30 \Omega 100$ $20 \Omega 130$	attery Box ry Box ake V W V W W W	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4284 DV0P4285	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P223	attery Box ry Box ake W W W W W W W DV0P221,	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCP**2ECD MFMCFO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222,	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P227 DV0P4170	attery Box ry Box ake W W W W W W W DV0P221,	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P227 DV0P4170	attery Box ry Box ry Box ake W W W W W W W W DV0P221, DV0P224, DV0P228, D, DV0PM2	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	with Brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P227, DV0P4170 DV0P422	attery Box ry Box ry Box ake W W W W W W W DV0P221, DV0P224, DV0P228, O, DV0PM2 O, DV0PM2	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	with brake 50 Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P227, DV0P417(DV0P422(DV0P341(Single pha	attery Box ry Box ake ake W W W W W W DV0P221, DV0P224, DV0P228, D, DV0PM2 D, DV0PM2 D, DV0PM2 D asse	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor	without Br without Br with Brake with Brake with Brake so Ω 25 W 100 Ω 25 25 Ω 50 W 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220, DV0P227, DV0P4170 DV0P4220 DV0P4221 DV0P3411 Single phase (2 3-phase (4	attery Box ry Box ry Box ake W W W W W W W W DV0P221, DV0P224, DV0P228, D, DV0PM2 D, DV0PM2 D, DV0PM2 D asse 200 V) 400 V)	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043 DV0P4190	

Note) 2 \diamondsuit : Drivers series K: A5II series H: A5 series Note) 3 \diamondsuit : Drivers series K: A5IIE series H: A5E series

Note) 4 Because A5IIE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

Note) 5 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m), (Example. 3 m: MFECA0030EAM)

Note) 6 Other combinations exist, and refer to P.210 for details.

Note) 7 Reactor should be prepared by the user.

Note) 8 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box).

Part No.

DV0P4360 DV0P4120 DV0P4121

DV0P4130 DV0P4131 DV0P4132

DV0PM20032

DV0PM20033

DV0PM20044

DV0PM20051

DV0PM20052

DV0PM20053

DV0PM20034

DV0PM20046

DV0PM20054

DV0PM20045

DV0PM20055

DV0PM20036

DV0PM20037

DV0PM20038 DV0PM20039

DV0PM20024

DV0PM20025

DV0PM20026 DV0PM20010

DV0P4350

DV0P2990

DV0P4430

DV0PM20030

MFECA0**0ETE

MFMCF0**2ECD

MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD

MFMCE0**2FCD MFMCA0**3FCT 195

DV0P4280 DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285

DV0PM20048

DV0PM20049

DV0P4190

DV0P1450

DV0P1460

DV0PM20050

250

251

253

MFMCA0**2ECD 191 MFMCD0**2ECD MFMCE0**2ECD 192

Analog Monitor Signal DV0PM20031

without Battery Box MFECA0**0ETD

A-frame Single row type

Double row

E-frame (200 V)

D-frame (400 V)

E-frame (400 V)

E-frame (400 V)

E-frame (200 V)

D-frame (400 V)

D-frame (400 V)

with Battery Box

Surge Absorber 3-phase (200V)

Noise Filter for Signal Lines

Single phase

3-phase (400V)

DV0P220, DV0P221, DV0P222,

DV0P4220, DV0PM20043

DV0P227, DV0P228, DV0PM20047 DV0P4170, DV0PM20042

A-frame to D-frame

203

204

205

208

		ı	Motor				Driver		Power			Optiona	al parts					· Options (IP6	
						A5II series A5 series	A5IIE series		capacity	Encode	er Cable	Moto	or Cable	Brake					Title
		Power	Output	Part No.	Rating/	Part No.	A5E series Part No.		/ at \				, Cubic	Cable	External	Reactor		Interface Cable	
Motor	series	supply	(W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Frame	(kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	Interface Conve	ersion Cable
		Single phase/	1000	MSME102 ☐ 1 *	74	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8	-		MEMOR	MEMOA		DV0P4284	DV0P228 DV0P222	DV0P4220		A Sir
		3-phase 200 V	1500	MSME152 ☐ 1 *	75	MDD \diamondsuit T5540	MDD \diamondsuit T5540E		Approx. 2.3	MFECA	MFECA	MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222		Connector Kit for Power	A-frame to Do typ
		2 phase	2000 3000	MSME202		MED ♦ T7364 MFD ♦ TA390	MED ♦ T7364E MFD ♦ TA390E	E-frame	Approx. 3.3 Approx. 4.5	0**0ETD	0**0ETE			- -	DV0P4285 Note) 7	DV0P223 DV0P224	DV0PM20043	Supply Input Connection	E-frame (20 D-frame (40
М	SME	3-phase 200 V	4000	MSME402 ☐ 1 *	78	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6	-		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	Connector Kit	E-frame (400
300	0 r/min		5000 750	MSME502 \(\Boxed{1} \) \(* \) MSME084 \(\Boxed{1} \) \(* \)		,	MFD ♦ TB3A2E MDD ♦ T2412E		Approx. 7.5 Approx. 1.6						P 33 33	Note) 8		for Control Power Supply Input	D-frame and E-frame (40)
		3-phase		MSME104	106	MDD ♦ T3420	MDD ♦ T3420E MDD ♦ T3420E		Approx. 2.3	MEECA	MFECA	MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048	_	Recommended	Connection Connector Kit	A-frame to D
		400 V	3000	MSME204	108	MED ♦ T4430 MFD ♦ T5440	MED ◇ T4430E MFD ◇ T5440E		Approx. 4.5	0**0ETD	0**0ETE	MFMCA	MFMCA	_ _	DV0PM20049	Note) 8	components P.252	for Motor Connection	E-frame (200 D-frame (400 E-frame
			4000 5000	MSME404		MFD ♦ TA464 MFD ♦ TA464	MFD \diamondsuit TA464E MFD \diamondsuit TA464E	F-frame	Approx. 6 Approx. 7.5			0**3ECT	0**3FCT		×2 in parallel			for Regenerative Resistor	
		Single phase/ 3-phase 200 V		MDME102 □ 1 * MDME152 □ 1 *		·	MDD ♦ T3530E	- D-frame	Approx. 1.8 Approx. 2.3	_		MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Motor/Encoder	
			2000	MDME202 □ 1 *	82	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	_					DV0P4285 Note) 7	DV0P222 DV0P223	DV0PM20043		RS485, RS2 Safety
				MDME302		-	MFD ♦ TA390E MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	Connector Kit	Interface External Sca
		3-phase 200 V		MDME502 \(_ 1 \ *	85 86	MFD ♦ TB3A2 MGD ♦ TC3B4	MFD ♦ TB3A2E	G-frame	Approx. 7.5 Approx. 11			0 SLOT	0 3101		DV0P4285	_	Recommended	Battery For Abs	Encoder Analog Monit
М	DME		11000	MDMEC12 1 *	87	MHD ♦ TC3B4	_	H-frame	Approx. 17	-		Note) 6	Note) 6		x3 in parallel DV0PM20058	Note) 8	components P.252	Battery Box No Mounting	
200	0 r/min		400 600	MDMEC52	111 112		MDD ◇ T2407E	D-frame	Approx. 22 Approx. 0.9 Approx. 1.2			MFMCD	MFMCE		DV0PM20048			Bracket Encoder Cable	without Batte
			1500	MDME104	114	MDD 🔷 T3420	MDD \diamondsuit T3420E	-	Approx. 1.8 Approx. 2.3			0**2ECD	0**2FCD						Note) 9
5 5 5 1 1 1 1		3-phase 400 V	3000	MDME204	116	MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 4.5	MFECA	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 DV0PM20049 ×2 in parallel	_	Recommended components P.252	Motor Cable	without Brak
				MDME504 □ 1 * MDME754 □ 1 *		-	MFD \diamondsuit TA464E	G-frame	Approx. 7.5 Approx. 11	-		_	_		DV0PM20049 ×3 in parallel			Wiotor Gable	
				MDMEC14			-	H-frame	Approx. 17 Approx. 22			Note) 6	Note) 6		DV0PM20059				with Brake 50 Ω 25 W
		Single phase/ 3-phase 200 V	1500	MFME152 □ 1 *	89	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 2.3	MFECA	MFECA	MFMCA 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220	External	100 Ω 25 W 25 Ω 50 W 50 Ω 50 W
		3-phase	2500	MFME252 ☐ 1 *	90	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.8	0**0ETD	0**0ETE	MFMCF 0**2ECD	MFMCE 0**2FCD	1 -	DV0P4285 Note) 7	DV0P224	DV0PM20043	Regenerative Resistor	30 Ω 100 W 20 Ω 130 W
,	at type) 0 r/min	200 V		MFME452		· ·	MFD ♦ T3420E					MFMCD 0**3ECT	MFMCA 0**3FCT		DV0P4285 x2 in parallel	Note) 8	DV0P3410		120 Ω 80 W 80 Ω 190 W DV0P220, D
		3-phase 400 V	2500	MFME154	123	MED \diamondsuit T4430	MED ◇ T4430E	E-frame	Approx. 3.8	MFECA 0**0FTD	MFECA 0**0ETE	MFMCF 0**2ECD MFMCD	MFMCE 0**2FCD MFMCA	-	DV0PM20048 DV0PM20049 DV0PM20049	_	Recommended components	Reactor	DV0P223, D DV0P227, D DV0P4170, I
240\4 [Dotoru	acoder en		MFME454 ☐ 1 * ons: ☐ Motor spe				F-frame	Approx. 6.8			0**3ECT	0**3FCT	a got the	×2 in parallel		P.252	Noise Filter	DV0P4220, I DV0P3410

Note) 6 Recommend to get the connector kit of options.

Note) 2 🛇 : Drivers series K: A5II series H: A5 series Note) 3 🛇 : Drivers series K: A5IIE series H: A5E series

Note) 4 Because A5IE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification,

Note) 5 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m), (Example. 3 m: MFECA0030EAM)

only 20-bit incremental type can be used in combination.

Note) 7 Other combinations exist, and refer to P.210 for details.

Note) 8 Reactor should be prepared by the user.

Note) 9 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box).

Please buy the battery part number "DV0P2990" separately.

		Motor				Driver		Power			Optiona	l parts				
Motor series	Power supply	Output (W)	Part No. Note) 1	Rating/ Spec. (page)	A5II series A5 series Part No. (Speed, Position, Torque, Full-Closed type)	A5IIE series A5E series Part No. (Position control type	Frame	capacity (at rated load)	Encode 20-bit Incremental	er Cable 17-bit Absolute	Motor without Brake	Cable with Brake	Brake Cable	External Regenerative Resistor	Reactor (Single phase) 3-phase	Noise Filter
					Note) 2	Note) 3,4		(kVA)	Note) 5	Note) 4,5,9	Note) 5	Note) 5	Note) 5		(' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	
	Single phase/ 3-phase 200 V	900	MGME092 □ 1 *	92	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220
		2000	MGME202 □ 1 *	93	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 3.8	MFECA	MFECA				51/25/25-	DV0P223	
		3000	MGME302 □ 1 *	94	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5	0**0ETD	0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 x2 in parallel	DV0P224	DV0P3410
≤ MGME	3-phase	4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E]	Approx. 7.5			0 0201	0 0101		AZ III Paralici		
MGME Low speed High torqu type 1000 r/mir	200 V	6000	MGME602 □ 1 *	96	MGD ♦ TC3B4	_	G-frame	Approx. 9.0			Note) 6	— Note) 6		DV0P4285 ×3 in parallel	— Note) 7	Recommende components P.252
គ្នា 1000 r/mir	1	900	MGME094 □ 1 *	125	MDD \diamondsuit T3420	MDD \diamondsuit T3420E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		
		2000	MGME204 □ 1 *	126	MFD 🔷 T5440	MFD \diamondsuit T5440E		Approx. 3.8			1451404	1451404		D) (0D) (000 (0		Recommende
	3-phase 400 V	3000	MGME304 □ 1 *	127	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame	Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	-	DV0PM20049 ×2 in parallel	Note) 7	components
		4500	MGME454 □ 1 *	128	MFD \diamondsuit TA464	MFD \diamondsuit TA464E		Approx. 7.5	0 0215	O OLIL	0 0201	0 01 01		AZ III parailor	11010) 7	P.252
		6000	MGME604 □ 1 *	129	MGD ♦ TB4A2	_	G-frame	Approx. 9.0			Note) 6	— Note) 6		DV0PM20049 ×3 in parallel		
	Single phase/	1000	MHME102 □ 1 *	97	MDD ◇ T3530	MDD ♦ T3530E	D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222	DV0P4220
	3-phase 200 V	1500	MHME152 □ 1 *	98	MDD ◇ T5540	MDD \diamondsuit T5540E		Approx. 2.3			0**2ECD	0**2FCD			DV0PM20047 DV0P222	
		2000	MHME202 □ 1 *	99	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	MFECA	MFECA	MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 8	DV0P223	DV0PM200
		3000	MHME302 ☐ 1 *	100	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 4.5	0**0ETD	0**0ETE	МЕМОЛ	MEMOA		DV0D400F	DV0P224	
	3-phase	4000	MHME402 ☐ 1 *	101	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P341
표	200 V	5000	MHME502 ☐ 1 *	102	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5								
High inertia	1	7500	MHME752 ☐ 1 *	103	MGD ♦ TC3B4	_	G-frame	Approx. 11			— Note) 6	— Note) 6		DV0P4285 ×3 in parallel	Note) 7	Recommend component P.252
۳			MHME104 □ 1 *				D (Approx. 1.8			MFMCD			DV0DM00040		
		1500	MHME154 □ 1 *	131	MDD 🔷 T3420	MDD ◇ T3420E	D-frame	Approx. 2.3			0**2ECD	MFMCE		DV0PM20048		
		2000	MHME204 ☐ 1 *	132	MED \diamondsuit T4430	MED ◇ T4430E	E-frame	Approx. 3.3		MEEGA	MFMCE 0**2ECD	0**2FCD		DV0PM20049		Recommend
	3-phase 400 V	3000	MHME304 ☐ 1 *		V	MFD \diamondsuit T5440E		Approx. 4.5	MFECA 0**0ETD		MENAGA	MENAGA	-	DV/0DM00040	— Note) 7	component
		4000	MHME404 ☐ 1 *	134	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame	Approx. 6	5 52.5	0 0212	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	, .	P.252
		5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5			0 0201	0 0101		III parallol		
		7500	MHME754 ☐ 1 *	136	MGD \diamondsuit TB4A2	_	G-frame	Approx. 9.0			— Note) 6	— Note) 6		DV0PM20049 ×3 in parallel		
											NOIE) 0	NOIE) 0	1	No iii paraliel		

- Note) 1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.16)
- Note) 2 ♦: Drivers series K: A5II series H: A5 series
- Note) 3 ♦: Drivers series K: A5IE series H: A5E series
- Note) 4 Because A5IE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

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0.9 kW to 7.5 kW IP67 motor (MGME)

- Note) 5 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m), (Example. 3 m: MFECA0030EAM)
- Note) 6 Recommend to get the connector kit of options.
- Note) 7 Reactor should be prepared by the user.
- Note) 8 Other combinations exist, and refer to P.210 for details.
- Note) 9 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

	Title		Part No.	Pa
Interface Cable			DV0P4360	
			DV0P4120	
			DV0P4121	
Interface Conve	rsion Cabl	е	DV0P4130	19
		-	DV0P4131	
			DV0P4132	
	A-irame	Single row type	DV0PM20032	
Connector Kit for Power	to D-frame	Double row type	DV0PM20033	20
Supply Input	E-frame ((200 V)	DV0PM20044	20
Connection	D-frame ((400 V)	DV0PM20051	
	E-frame ((400 V)	DV0PM20052	
Connector Kit for Control Power Supply Input Connection	D-frame a E-frame (DV0PM20053	
Connector Kit	A-frame t	o D-frame	DV0PM20034	20
for Motor	E-frame ((200 V)	DV0PM20046	20
Connection	D-frame ((400 V)	DV0PM20054	
Connector Kit	E-frame	()	DV0PM20045	
for Regenerative Resistor	D-frame ((400 V)	DV0PM20055	
		-	DV0PM20036	20
Connector Kit fo			DV0PM20037	
Motor/Encoder (-	1	DV0PM20038	20
Moton/Endodor (301111001101	•		20
	DO 405 F	20000	DV0PM20039	20
	RS485, F	15232	DV0PM20024	١.,
	Safety		DV0PM20025	19
Connector Kit	Interface		DV0P4350	
	External S	Scale	DV0PM20026	
	Encoder		DV0PM20010	19
	Analog M	onitor Signal	DV0PM20031	
Battery For Abso	olute Enco	der	DV0P2990	20
Battery Box Not	te) 9		DV0P4430	
Mounting Bracket	D-frame		DV0PM20030	20
	without B	attery Box	MFECA0**0ETD	
E 0 11		D		40
∟ncoder Cable	with Batte Note) 9	ery Box	MFECA0**0ETE	19
Encoder Cable		ery Box	MFECA0**0ETE MFMCA0**2ECD	
∟ncoder Cable		егу вох	= 0.10	19
Encoder Cable	Note) 9	-	MFMCA0**2ECD	
Encoder Cable		-	MFMCA0**2ECD MFMCD0**2ECD	19
	Note) 9	-	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD	19
Encoder Cable Motor Cable	Note) 9	-	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD	19
	Note) 9	-	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT	19
	Note) 9	rake	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD	19
	Note) 9	rake	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD	19
	Note) 9 without B	rake	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCE0**2FCD	19
	Note) 9	rake e	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280	19
	without B with Brak 50 Ω 25 \ 100 Ω 25 \	e W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281	19
	with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \	e W W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282	19
Motor Cable	with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 50 Ω 50 \	e W W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283	19 19 19
Motor Cable	with Brak 50 Ω 25 \ 100 Ω 25 \ 25 Ω 50 \ 30 Ω 100	e W W N N W W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284	19 19 19
Motor Cable External Regenerative	with Brak 50 Ω 25 \ 100 Ω 25 \ 50 Ω 50 \ 30 Ω 100 20 Ω 130	e N W N N W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285	19 19 19
Motor Cable External Regenerative	with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80	e N W N N W W W W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048	19 19 19
Motor Cable External Regenerative	with Brak 50 Ω 25 \ 100 Ω 25 \ 100 Ω 50 \ 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190	e W W W W W W W	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049	19 19 19
Motor Cable External Regenerative Resistor	without B with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P223	rake N W N W W W W W O, DV0P221,	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222.	1:
Motor Cable External Regenerative Resistor	without B with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P227 DV0P417	rake N W W W W W W O, DV0P221, S, DV0P224, T, DV0P228, TO, DV0PM2	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	1: 1: 1: 1: 2:
Motor Cable External Regenerative Resistor	without B without B with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P220 DV0P227 DV0P417 DV0P422	rake N W W W W W W O, DV0P221, O, DV0P224, O, DV0P228, O, DV0PM2	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	19 19 19 19 20 20
Motor Cable External Regenerative	without B without B with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P223 DV0P227 DV0P417 DV0P422 DV0P341	rake N W W W W W O, DV0P221, O, DV0P224, O, DV0PM20, DV0PM2	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042	19 19 19 19 20 20
Motor Cable External Regenerative Resistor Reactor	without B without B with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P223 DV0P227 DV0P417 DV0P422 DV0P341 Single ph	rake W W W W W O, DV0P221, O, DV0P224, O, DV0PM20, DV0PM2 O, DV0PM2 O asse	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043	19 19 19 20 20 20 20 20 20 20 20 20 20 20 20 20
Motor Cable External Regenerative Resistor	without B without B with Brak 50 Ω 25 V 100 Ω 25 25 Ω 50 V 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P223 DV0P227 DV0P417 DV0P422 DV0P341 Single ph	e N W N W W W N D, DV0P221, B, DV0P224, T, DV0P228, TO, DV0PM2 D,	MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042	19 19 19 19 20 20

Main circuit

Control circuit

A-frame

D-frame

F-frame

to

H-frame

A-frame

to

D-frame

E-frame

H-frame

D-frame

to

H-frame

D-frame

H-frame

phase

serial

Input

Output

Input

Output

Input

Output

USB

RS232

RS485

temperature

humidity

Altitude

Vibration

Main

circuit

Control

circuit

Main

circuit

Control

circuit

100 V

200 V

400 V

A5 Family

(1) Deviation counter clear (2) Command pulse inhibitation

((1) Positive and Negative direction, (2) A and B-phase, (3) Command and

Primary delay filter or FIR type filter is adaptable to the command input

Individual torque limit for both positive and negative direction is enabled.

(1) Selection of internal velocity setup 1 (2) Selection of internal velocity

(3) Selection of internal velocity setup 3 (4) Speed zero clamp etc.

Speed command input can be provided by means of analog voltage.

Individual torque limit for both positive and negative direction is enabled.

to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.

Speed command input can be provided by means of analog voltage.

Parameters are used for scale setting and command polarity. (3 V/rated

(3) Command dividing gradual increase switching (4) Damping control

Primary delay filter or FIR type filter is adaptable to the command input

Individual torque limit for both positive and negative direction is enabled.

The load inertia is identified in real time by the driving state of the motor

operating according to the command given by the controlling device and

set up support software "PANATERM". The gain is set automatically in

Individual setup of acceleration and deceleration is enabled, with 0 s

Parameters are used for scale setting and command polarity.

Analog voltage can be used as torque feed forward input

Speed zero clamp, Torque command sign input etc.

(1) Deviation counter clear (2) Command pulse inhibition

Analog voltage can be used as torque feed forward input.

Speed limit value with parameter is enabled.

Exclusive interface for Photo-coupler: 500 kpps

Exclusive interface for line driver: 4 Mpps

The alarm data history can be referred to.

Full-closed positioning complete etc.

Switching the internal 8speed is enabled by command input.

Analog voltage can be used as torque feed forward input.

(3) Electric gear (4) Damping control switching etc.

Exclusive interface for Photo-coupler: 500 kpps

Exclusive interface for line driver: 4 Mpps

Positioning complete (In-position) etc.

Differential input

1/1000 times to 1000 times

Only available at A5II Series

(6 V/Rated rotational speed Default)

Speed zero clamp input is enabled.

Only available at A5I Series

Speed arrival etc.

direction)

Available

Available

Available

torque Default)

switching etc.

Differential input

1/1000 times to 1000 times

1/40 times to 160 times

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1







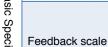




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A/B

Encoder feedback

feedback

Environment

Control method

Control signal

Analog signal

Pulse signal

Communication

Safety function

Front panel

Regeneration

Dynamic brake

Control mode

*2 Not applicable to 2DOF control system.

function

5

conr

Internal velocity command Soft-start/down function

Analog

input

Control input

Control output

Pulse

input

Analog

Damping Control

2DOF settings

Control input

Control output

input

control

Max. command pulse

Input pulse signal format

(Division/Multiplication of

Torque limit command input

Torque feed forward input

Velocity command input

Torque limit command input

Torque feed forward input

frequency

Electronic gear

command pulse)

Smoothing filter

Instantaneous Speed Observer

Zero-speed clamp

Instantaneous Speed Observer

Speed Control filter

control

Full-closed

control

2DOF settings Control input

input

Control output Analog

Torque command input

Speed limit function

Control input

Control output Max. command pulse

frequency Input pulse signal format Pulse Electronic gear (Division/ input Multiplication of command

pulse) Smoothing filter Torque limit command input Analog input Torque feed forward input

Setup range of division/multiplication of feedback scale **Damping Control**

Auto tuning

function

Division of encoder feedback pulse Hard error Protective

Traceability of alarm data

Soft error

accordance with the rigidity setting. Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc. Excess position deviation, command pulse division error, EEPROM error

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A5II, A5 series (Speed, Position, Torque, Full-Closed type

-15 %

-15 %

(Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)

5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)

Both operating and storage: 20 % to 85 %RH (free from condensation*1)

50 Hz/60 Hz

Single phase, 100 V to 120 V

Single phase. 100 V to 120 V

Single/3-phase, 200 V to 240 V

3-phase, 200 V to 230 V

Single phase, 200 V to 240 V

Single phase, 200 V to 230 V

Storage temperature: -20 °C to 65 °C

IGBT PWM Sinusoidal wave drive

DC 24 V ± 15 %

Lower than 1000 m

Renishaw plc

General purpose 10 inputs

General purpose 6 outputs

Connection with PC etc.

Used for functional safety.

(1) 5 keys (2) LED (6-digit)

1:1 communication

A B G and H-frame

C-frame to F-frame:

H-frame: External only

*1 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

2 outputs (Analog monitor: 2 output)

3-phase, 380 V to 480 V

Ambient temperature: 0 °C to 55 °C (free from freezing)

17-bit (131072 resolution) absolute encoder. 7-wire serial

Manufacturers that support serial communication scale:

A/B phase, initialization signal defferential input.

3 inputs (16Bit A/D: 1 input, 12Bit A/D: 2 inputs)

2 inputs (Photo-coupler input, Line receiver input)

1: n communication up to 31 axes to a host.

4 outputs (Line driver: 3 output, open collector: 1 output)

no built-in regenerative resistor (external resistor only)

Switching among the following 7 mode is enabled.

(6) Speed/Torque control (7) Full-closed control

(1) Position control (2) Speed control (3) Togue control

(4) Position/Speed control (5) Position/Torque control

Built-in regenerative resistor (external resistor is also enabled.)

A-frame to G-frame: Built-in (external resistor is also available to G-frame)

20-bit (1048576 resolution) incremental encoder, 5-wire serial

DR. JOHANNES HEIDENHAIN GmbH Fagor Automation S.Coop.

The function of general-purpose input is selected by parameters.

The function of general-purpose output is selected by parameters.

Magnescale Co., Ltd. Mitutoyo Corporation Nidec Sankyo Corporation

(3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))

A5IIE, A5E series (Position control type)

		100 V	Main circuit		Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz			
	100 V	Control circuit		Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz				
			Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz			
	Input power	000.1/	circuit	E-frame to F-frame	3-phase, 200 V to 230 V			
	ower	200 V	Control	A-frame to D-frame	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz			
			circuit	E-frame to F-frame	Single phase, 200 V to 230 V +10 % 50 Hz/60 Hz			
		400 V	Main circuit	D-frame to F-frame	3-phase, 380 V to 480 V			
		400 V	Control circuit	D-frame to F-frame	DC 24 V ± 15 %			
Basic	J		temperature		Ambient temperature: 0 °C to 50 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)			
sic Sp	Env	ironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation*1)			
Specifications			Alti	tude	Lower than 1000 m			
ations			Vibr	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)			
, o	Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive			
	Enc	coder feed	dback		20-bit (1048576 resolution) incremental encoder, 5-wire serial			
	Pa	Control	oignal	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.			
	Parallel I/O	Control signal		Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.			
		Analog	oianal	Input	none			
	connector	Analog	sigriai	Output	2 outputs (Analog monitor: 2 output)			
	ctor	D. I		Input	2 inputs (Photo-coupler input, Line receiver input)			
	Pulse signal Outr		Output	4 outputs (Line driver: 3 output、open collector: 1 output)				
	Communication USB function		USB	Connection with PC etc.				
	Front panel			(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)				
	Regeneration			A, B-frame: no built-in regenerative resistor (external resistor only) C-fram to F-frame: Built-in regenerative resistor (external resistor is also enabled.)				
	Dyr	namic bra	ke		Built-in			
	Cor	ntrol mod	е		(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control			

^{*1} Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

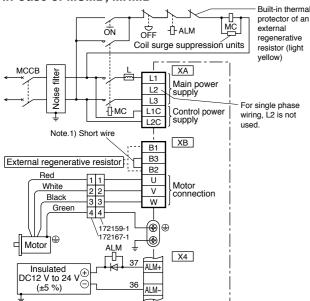
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		Control input		(1) Deviation counter clear (2) Command pulse inhibitation (3) Electric gear (4) Damping control switching etc.		
		Control outp	out	Positioning complete (In-position) etc.		
		Pulse input	Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps		
	Position contro		Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)		
	control		mput	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 times to 1000 times
П				Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input	
Function		Instantaneous Speed Observer		Available		
ă		Damping Control		Available		
		2DOF settin	ngs	Only available at A5IE Series		
		Auto tuning		The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting.		
	င္ပ	Division of e	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).		
	Common	Protective	Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.		
		function	Soft error	Excess position deviation, command pulse division error, EEPROM error etc.		
		Traceability of alarm data		The alarm data history can be referred to.		

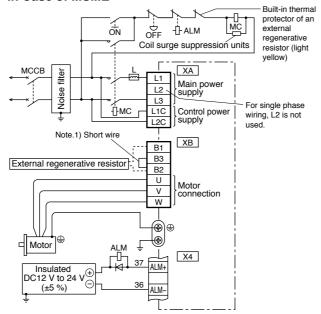
Wiring Diagram

In Case of Single phase, A-frame to D-frame, 100 V / 200 V type





· In Case of MSME



Frame Short wire		Built-in	Connection of the connector XB		
No.			In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open between B2-B3	
C-frame D-frame		with	Remove the short wire accessory from between B2-B3. Connect an external regenerative	Shorted between B2-B3 with an attached short wire	

Note.1)

Built-in thermal

protector of an

regenerative

resistor (light

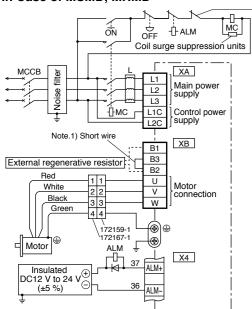
external

Frame Short wire		Built-in	Connection of the connector XB		
No.			In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open between B2-B3	
C-frame D-frame		with	Remove the short wire accessory from between B2-B3. Connect an external regenerative resistor between B1-B2	Shorted between B2-B3 with an attached short wire	

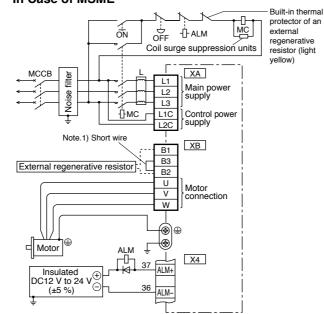
In Case of 3-phase, A-frame to D-frame, 200 V type

· In Case of MSMD. MHMD

Note.1)



· In Case of MSME



Note.1)

Frame	Short wire	Built-in	Connection of the connector XB		
			In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open between B2-B3	
C-frame D-frame		with	Remove the short wire accessory from between B2-B3. Connect an external regenerative register between B1-B2.	Shorted between B2-B3 with an attached short wire	

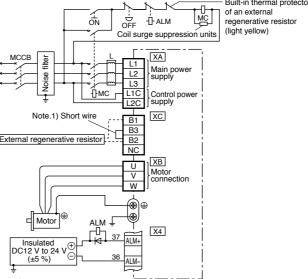
Note.1)

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Frame Short wire		Built-in	Connection of the connector XB		
No.			In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open between B2-B3	
C-frame D-frame		with	Remove the short wire accessory from between B2-B3. Connect an external regenerative resistor between B1-B2	Shorted between B2-B3 with an attached short wire	

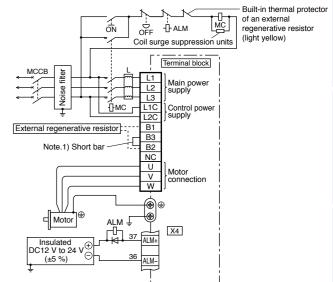
^{*} Refer to P.186, P.187, Specifications of Motor connector.

In Case of 3-phase, E-frame, 200 V type



Note.	1)			
Frame	Short wire	Built-in	Connection of the connector XC	
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor
E-frame	with	with	Remove the short wire accessory from between B2-B3. Connect an external regenerative resistor between B1-B2	Shorted between B2-B3 with an attached short wire

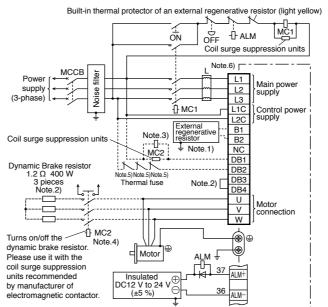
In Case of 3-phase, F-frame, 200 V type



Note.1)

Frame	Short bar	Built-in regenerative resistor	Connection of terminal block		
	(Accessory)		In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
F-frame	with	with	Remove the short bar accessory from between B2-B3. Connect an external regenerative resistor between B1-B2	Shorted between B2-B3 with an attached short bar	

In Case of 3-phase, G-frame, 200 V type



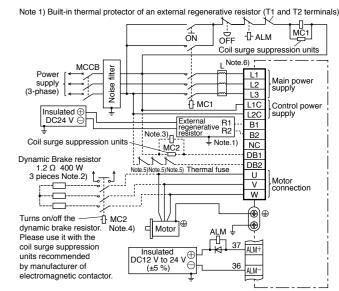
Note.1) About regenerative resistor

Frame	Short bar	Built-in	Connection of terminal block				
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.			
G-frame without without		without	Connect an external regenerative resistor between B1-B2	Open between B1-B2			
Note.2) About dynamic brake resistor							
Frame	Short bar	Built-in	Connection of terminal block				
No.	(Accessory)		In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor			
			Remove attached short bar between DR2 DR4	Shorted with attached short bar			

		16912101	an external regenerative resistor.	an external regenerative resistor.				
without without vithout vithou								
e.2	e.2) About dynamic brake resistor							
ne	Short bar	Built-in	Connection of terminal block		;			
).	(Accessory)	dynamic brake resistor.	In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.				

Connect external dynamic brake resistor as shown above.

In Case of 3-phase, H-frame, 200 V type



Note.1) About regenerative resistor

Frame	(Accessory) regenerative In case of using	iinai diock		
No.			iii dadd di ddiiig	In case of not using an external regenerative resistor.
H-frame	without	without	(External regenerative resistor terminal) - Terminal R1, R2 connect to B1, B2 - Terminal T1, T2 connection as shown above - Terminal 24 V, 0 V connect to DC power supply of DC24 V E terminal connect to the ground	Open between B1-B2

Specification of external regenerative resistor, please refer to P.139, "Options Components

Note.2) About dynamic brake resistor

	-	-		
Frame	Short bar	Built-in	Connection of terminal block	
No.	(Accessory)	dynamic brake resistor.	In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor
H-frame	without	without	Connect external dynamic brake resistor as shown above.	Open between DB1-DB2

<common for G & H frame>

Note.3) Magnetic contactor MC2 must be the same rating as the contactor MC1 in the main circuit.

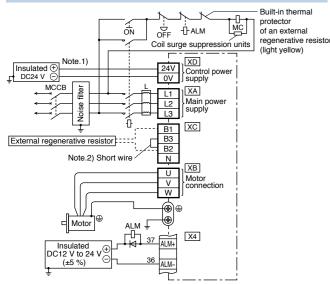
- Note.4) Servo may be turned on in the external sequence if the contact deposits: to protect the system, provide the auxiliary contact.
- Note.5) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor.

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Note.6) Reactor should be prepared by the customer.

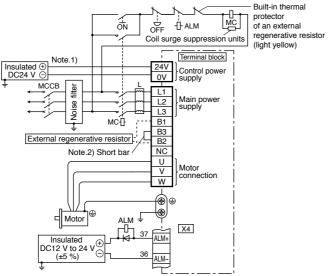
Wiring Diagram

In Case of 3-phase, D-frame and E-frame, 400 V type



Note.1) Shielding the circuit is recommended for the purpose of noise reduction. Note.2)

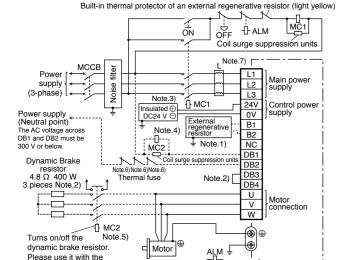
		•				
	Frame	Short wire	Built-in regenerative resistor	Connection of the connector XC		
	No.	(Accessory)		In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
1	E-frame	with	with	Remove the short wire accessory from between B2-B3. Connect an external regenerative resistor between B1-B2	Shorted between B2-B3 with an attached short wire	



Note.1) Shielding the circuit is recommended for the purpose of noise reduction. Note.2)

Frame	Short bar	Built-in	Connection of terminal block		
	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
F-frame	with	with	Remove the short bar accessory from between B2-B3. Connect an external regenerative resistor between B1-B2	Shorted between B2-B3 with an attached short bar	

In Case of 3-phase, G-frame, 400 V type



Note.1) About regenerative resistor

coil surge suppression

by manufacturer of

Frame	Short bar	Built-in	Connection of	terminal block		
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.		
G-frame	without	without	Connect an external regenerative resistor between B1-B2	Open between B1-B2		
Note.2) About dynamic brake resistor						
Frame	Short bar	Short bar Built-in	Connection of terminal block			

In case of using an external dynamic brake resistor

Remove attached short bar

en DB3-DB4

Insulated

<common for G & H frame>

namic brake

Note.3) Shielding the circuit is recommended for the purpose of noise reduction.

Note 4) Magnetic contactor MC2 must be the same rating as the contactor MC1 in the main circuit.

Note.5) Servo may be turned on in the external sequence if the contact deposits: to protect the system, provide the auxiliary contact.

Note.6) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor.

In case of not using

Shorted with attached short bar

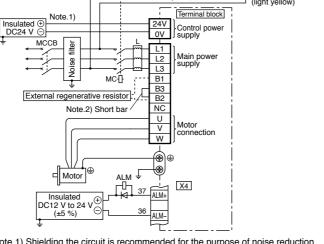
between DB3-DB4

Open between DB1-DB2

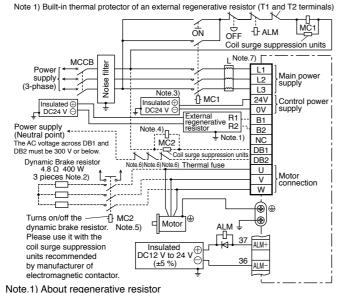
Note.7) Reactor should be prepared by the customer.

* Refer to P.186, P.187, Specifications of Motor connector

In Case of 3-phase, F-frame, 400 V type



In Case of 3-phase, H-frame, 400 V type



Frame	Short bar	Built-in regenerative resistor	Connection of terminal block		
No.	(Accessory)		iii dadd di ddiiig	In case of not using an external regenerative resistor	
H-frame	without	without	(External regenerative resistor terminal) • Terminal R1, R2 connect to B1, B2 • Terminal T1, T2 connection as shown above • Terminal 24 V,0 V connect to DC power supply of DC24 V • E terminal connect to the ground	Open between B1-B2	

ication of external regenerative resistor, please refer to P.139, "Options Components Note.2) About dynamic brake resistor

		,	-			
	Frame	Short bar	Built-in	Connection of terminal block		
		(Accessory)	dynamic brake resistor.	In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.	
-	H-frame	without	without	Connect external dynamic brake resistor as shown above.	Open between DB1-DB2	

Outline Description of Safe Torque Off (STO)

When not constructing the safety circuit, use the supplied safety bypass plug.

Wiring to the Connector, X3 (Excluding A5IIE, A5E Series)

The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

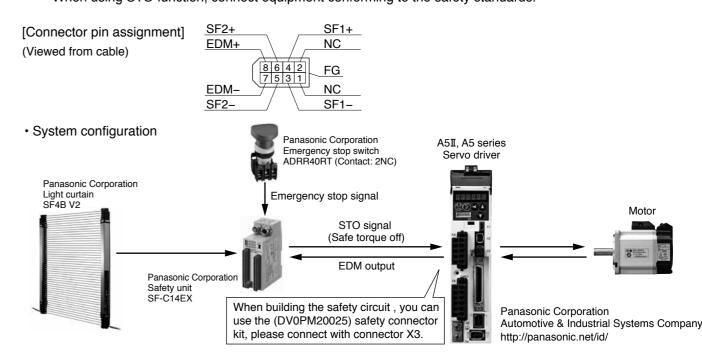
When STO function operates, the servo driver turns off the servo ready output signal (S-RDY) and enters

This is an alarm condition and the 7-seg LED on the front panel displays the error code number.

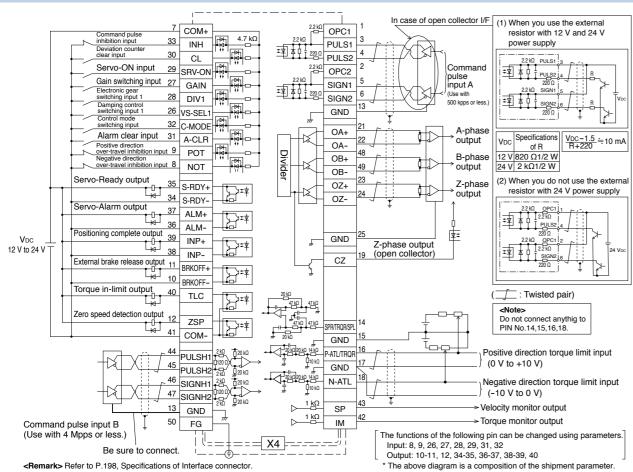
Connecting the host controller can configure a safety circuit that controls the safety functions.

Safety Precautions

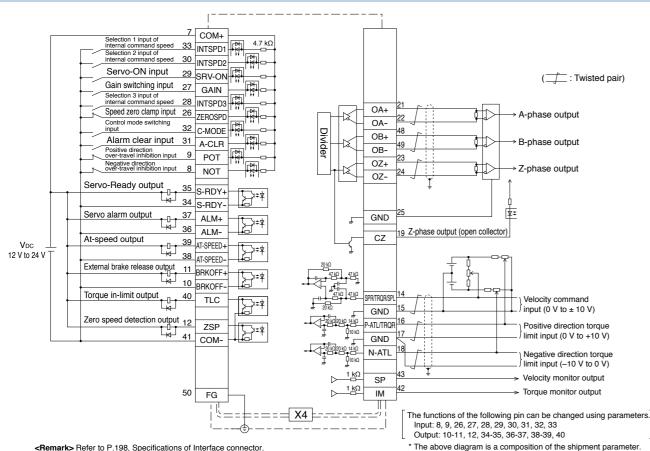
- · When using the STO function, be sure to perform equipment risk assessment to ensure that the system conforms to the safety requirements.
- · Even while the STO function is working, the following potential safety hazards exist. Check safety in risk assessment.
- · The motor may move when external force (e.g. gravity force on vertical axis) is exerted on it. Provide an external brake, etc., as necessary to secure the motor. Note that the purpose of motor with brake is holding and it cannot be used for braking application.
- When parameter Pr5.10 Sequence at alarm is set to free run (disable dynamic brake), the motor is free run state and requires longer stop distance even if no external force is applied. Make sure that this does not cause any problem.
- · When power transistor, etc., becomes defective, the motor will move to the extent equivalent of 180 electrical angle (max.). Make sure that this does not cause any problem.
- · The STO turns off the current to the motor but does not turn off power to the servo driver and does not isolate it. When starting maintenance service on the servo driver, turn off the driver by using a different disconnecting device.
- External device monitor (EDM) output signal is not a safety signal. Do not use it for an application other
- Dynamic brake and external brake release signal output are not related to safety function. When designing the system, make sure that the failure of external brake release during STO condition does not result in
- When using STO function, connect equipment conforming to the safety standards.



Wiring Example of Position Control Mode



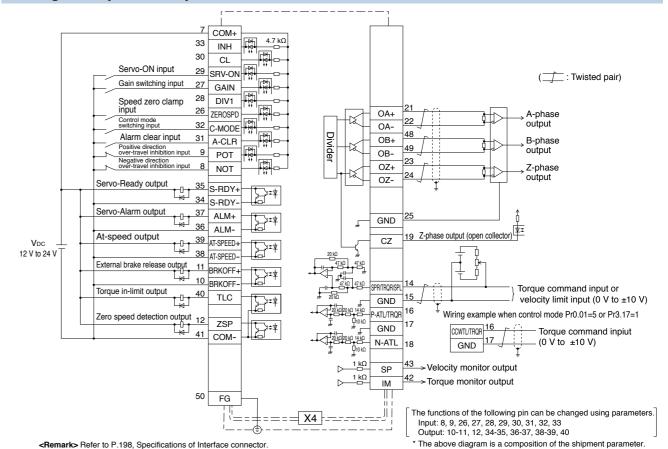
Wiring Example of Velocity Control Mode (Excluding A5IIE, A5E series)



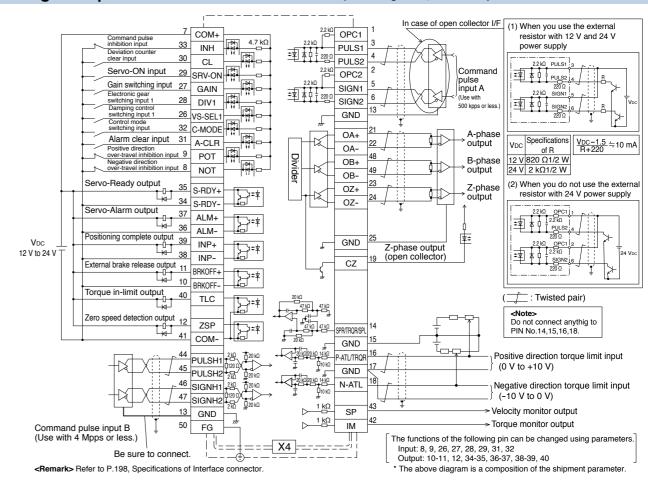
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The above diagram is a composition of the shipment parameter.

Wiring Example of Torque Control Mode (Excluding A5IIE, A5E series)



Wiring Example of Full-closed Control Mode (Excluding A5IIE, A5E series)



Wiring to the Connector, X6

A5 Family

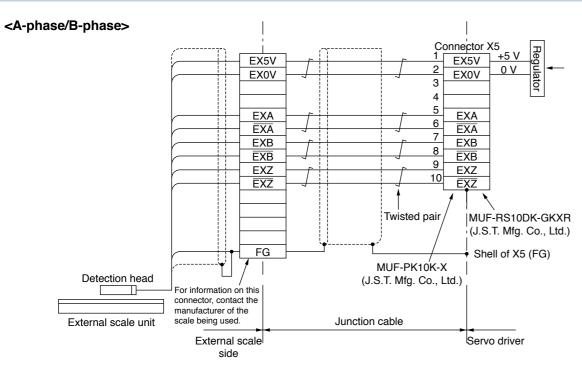
Applicable External Scale

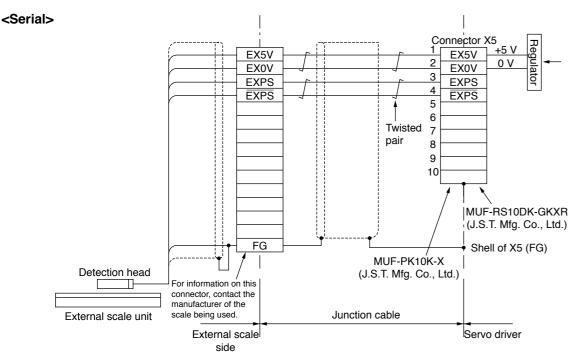
The manufacturers applicable external scales for this product are as follows.

Wiring to the Connector, X5 (Excluding A5IIE, A5E series)

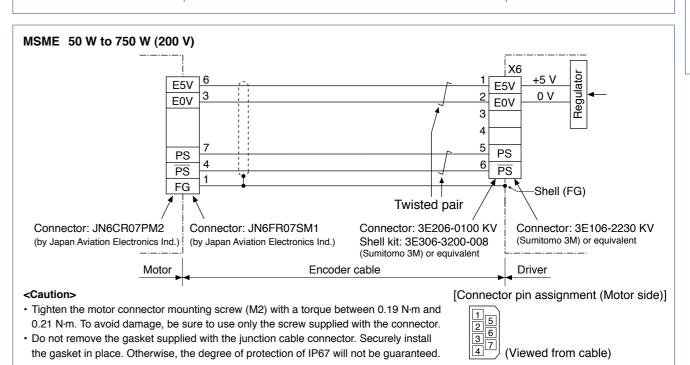
- DR. JOHANNES HEIDENHAIN GmbH
- · Fagor Automation S.Coop.
- · Magnescale Co., Ltd.
- Mitutoyo Corporation
- Nidec Sankyo Corporation
- Renishaw plc
- * For the details of the external scale product, contact each company.

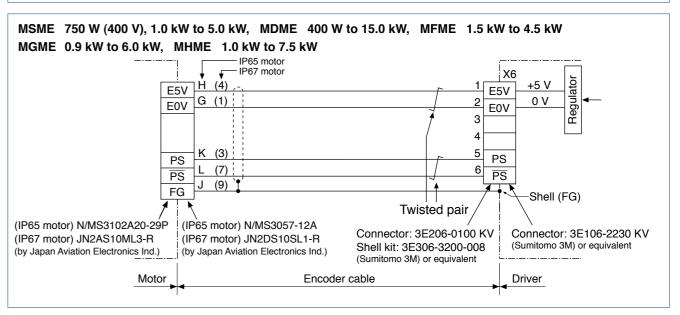
Wiring Diagram of X5





In Case of 20-bit Incremental Encoder MSMD 50 W to 750 W, MHMD 200 W to 750 W X6 White +5 V E5V E5V 2 <u>E0V</u> Black 0 V E0V Light blue PS PS Purple PS PS FG -Shell (FG) Twisted pair 172168-1 172160-1 Connector: 3E206-0100 KV Connector: 3E106-2230 KV (by Tyco Electronics) (by Tyco Electronics) (Sumitomo 3M) or equivalent Shell kit: 3E306-3200-008 Motor (Sumitomo 3M) or equivalent Motor Encoder cable Driver





[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

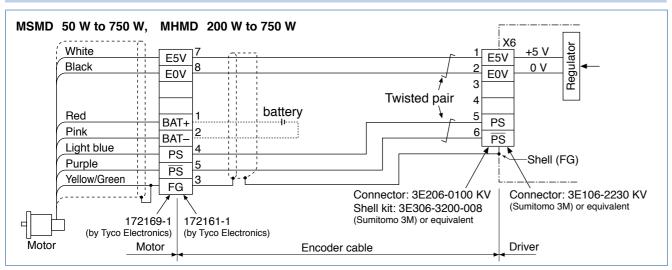
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

Japan Molex Inc.

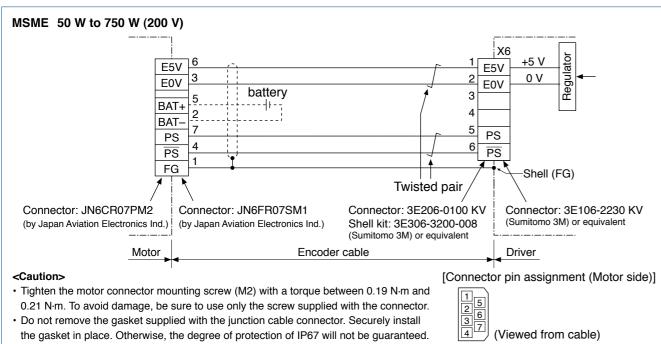
Connector XB 06JFAT-SAXGF J.S.T. Mfg. Co., Ltd.

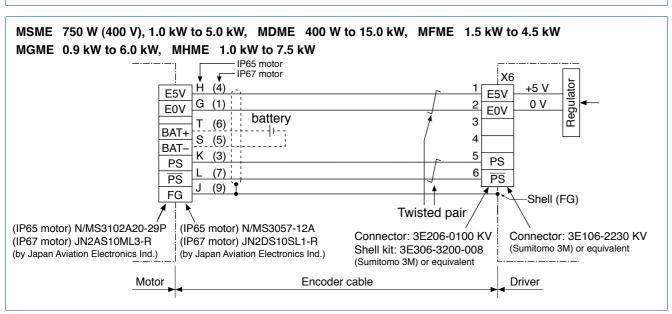
A5 Family

In Case of 17-bit Absolute Encoder (A5IE, A5E series does not correspond.)



Wiring to the Connector, X6



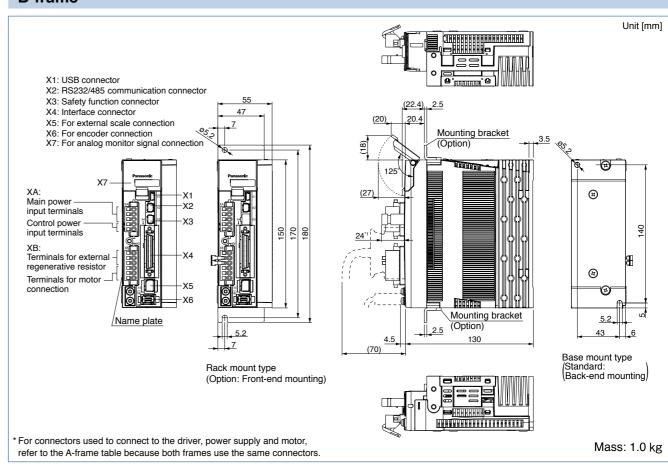


[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

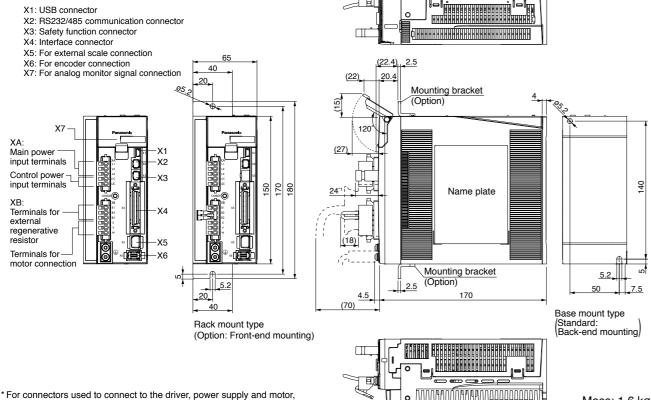
A-frame Unit [mm] X1: USB connector X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector X5: For external scale connection X6: For encoder connection Mounting bracket X7: For analog monitor signal connection (Option) **₹** 🚱 XA: Main power input terminals -X2 Control power -X3 Terminals for external Terminals for motor connection -X5 **7**⊚-Mounting bracket 5.2 Name plate (Option) 5.2 _28 __6 Rack mount type Base mount type (Option: Front-end mounting) (Standard: Back-end mounting) Connector of driver side J.S.T. Mfg. Co., Ltd. J.S.T. Mfg. Co., Ltd. Connector XA S05B-F32SK-GGXR Connector XB S06B-F32SK-GGXR Connector X1 UB-M5BR-DMP14-4S (or equin ent) J.S.T. Mfg. Co., Ltd. 1-2040537-1 (or equivalent) Connector X3 2040537-1 (or equivalent Tyco Electronics Mass: 0.8 kg Connector X4 10250-52A2PF (or equivalent Sumitomo 3M J.S.T. Mfg. Co., Ltd. Connector of power and motor side (Attached to the driver) | A5II.A5 | A5IIE.A5E Connector X5 MUF-RS10DK-GKXR (or equivalent) Connector XA 05JFAT-SAXGF J.S.T. Mfg. Co., Ltd. Connector X6 3E106-2230 KV (or equivalent) Sumitomo 3M

B-frame

Connector X7 530140610 (or equivalent



- C-frame

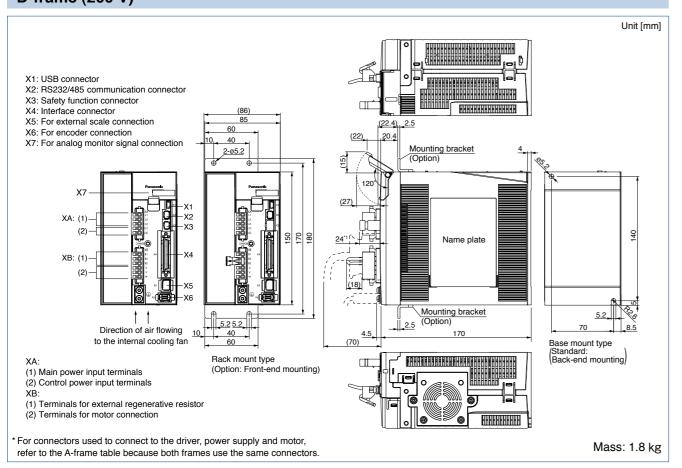


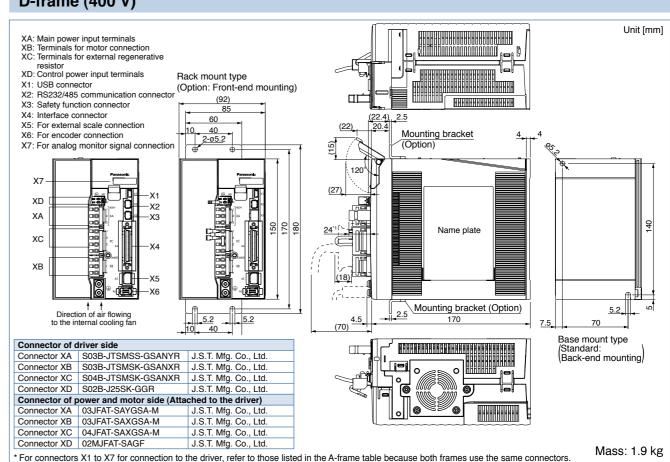
• The size of A5II, A5 series and A5IIE, A5E series is same.

*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

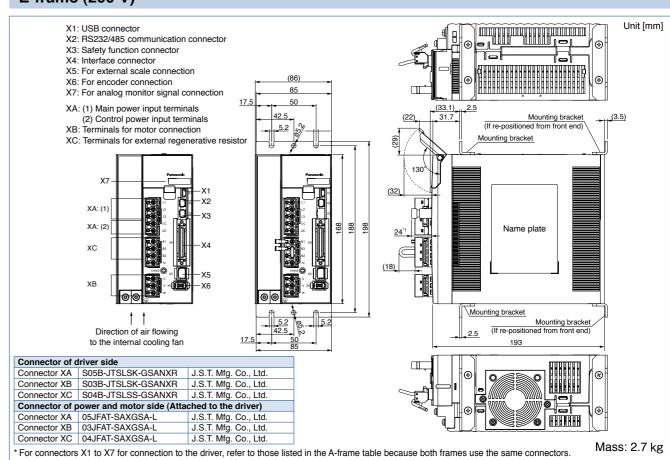
D-frame (200 V)

refer to the A-frame table because both frames use the same connectors.





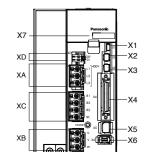
E-frame (200 V)



Mass: 1.6 kg

E-frame (400 V)

- X1: USB connector
- X2: RS232/485 communication connector
- X3: Safety function connector
- X4: Interface connector
- X5: For external scale connection
- X6: For encoder connection
- X7: For analog monitor signal connection
- XA: Main power input terminals
- XB: Terminals for motor connection
- XC: Terminals for external regenerative resistor
- XD: Control power input terminals



Direction of air flowing to the internal cooling fan

Connector XB S03B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd.

Connector of power and motor side (Attached to the driver)

J.S.T. Mfg. Co., Ltd.

J.S.T. Mfg. Co., Ltd.

For connectors X1 to X7 for connection to the driver, refer to those listed in the A-frame table because both frames use the same connectors.

42.5

Connector of driver side
Connector XA | S03B-JTSLSS-GSANYR | J.S.T. Mfg. Co., Ltd.

• The size of A5II, A5 series and A5IIE, A5E series is same.

*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

\Mounting bracket 193

(If re-positioned from front end)

Name plate

Mounting bracket

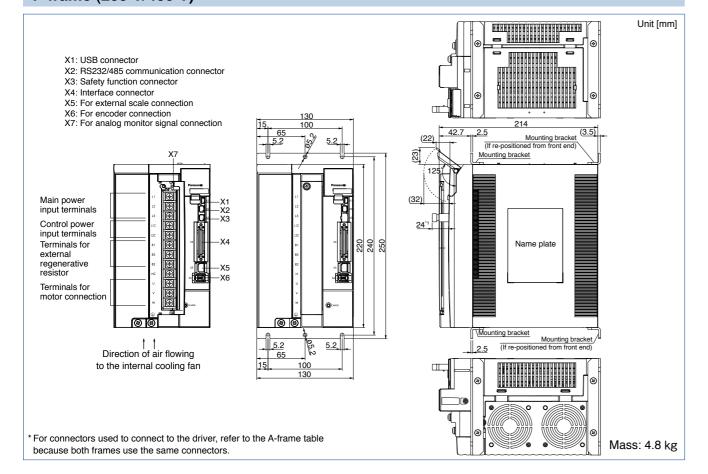
Connector XC 04JFAT-SAXGSA-L J.S.T. Mfg. Co., Ltd. Mass: 2.7 kg Connector XD 02MJFAT-SAGF J.S.T. Mfg. Co., Ltd.

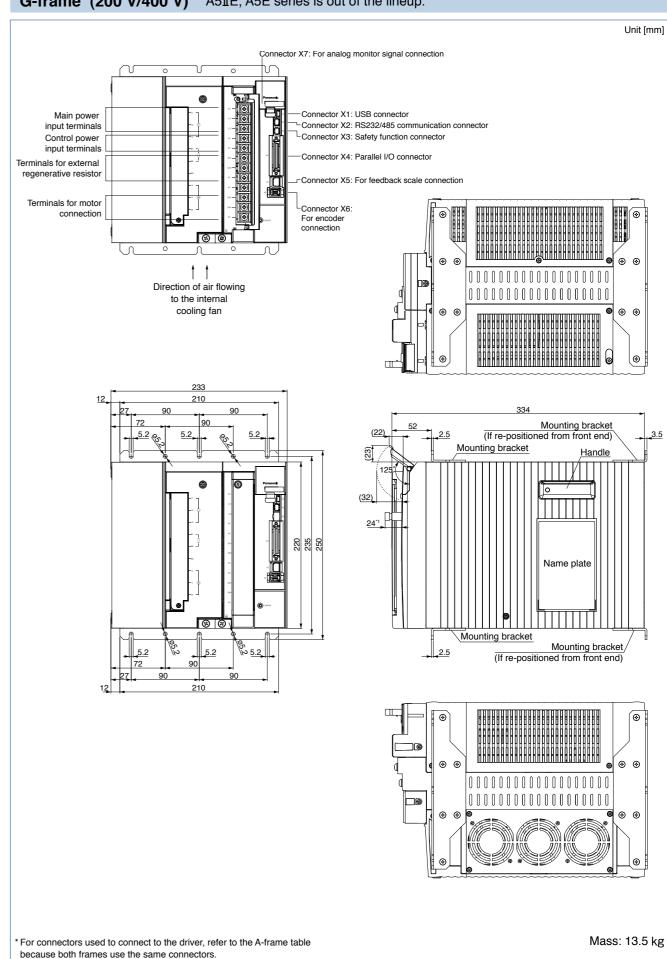
F-frame (200 V/400 V)

Connector XD S02B-J25SK-GGR

Connector XA 03JFAT-SAYGSA-L

Connector XB 03JFAT-SAXGSA-L





Features/Lineup

MSMD (100 V/200 V)

MHMD (100 V/200 V)

200 W to 750 W.....

MSME (100 V/200 V)

50 W to 750 W

1.0 kW to 5.0 kW.

1.0 kW to 15.0 kW.

MSME (200 V)

MDME (200 V)

MFME (200 V) 1.5 kW to 4.5 kW

MGME (200 V)

MHME (200 V)

MSME (400 V)

MDME (400 V) 400 W to 15.0 kW.

MFME (400 V) 1.5 kW to 4.5 kW ...

MGME (400 V) 0.9 kW to 6.0 kW ...

MHME (400 V)

IP67 motor

dimensions..

1.0 kW to 7.5 kW P.130

750 W to 5.0 kW.

1.0 kW to 7.5 kW

0.9 kW to 6.0 kW

50 W to 750 W

Motor Contents

. P.74

. P.80

. P.89

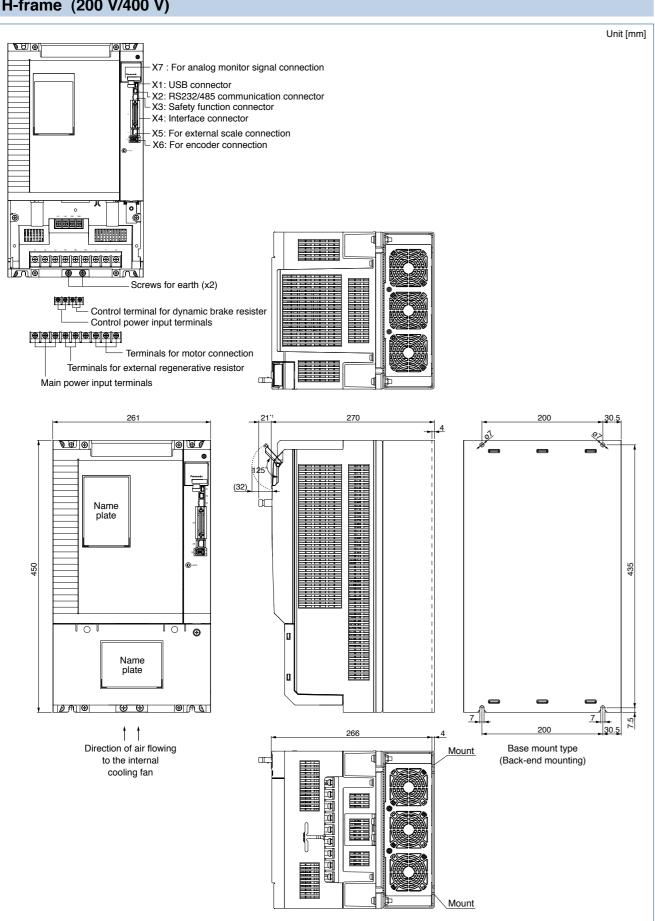
. P.92

. P.97

P.104

P.137

H-frame (200 V/400 V)



A5IE, A5E series is out of the lineup.

*1 The height of the safety by-pass provided plug is one of the 11 mm or 21 mm to connector X3.

Features

 Line-up IP65 motor: 50 W to 5.0 kW IP67 motor: 50 W to 15.0 kW

Max speed: 6000r/min (MSME 50 W to 750 W)

· Low inertia (MSME) to High inertia (MHME).

· Low cogging torque: Rated torque ratio 0.5 % (typical value).

• 20-bit incremental encoder (1048576 pulse)

• 17-bit absolute encoder (131072 pulse).

Motor Lineup

Small capacity



MSME Low inertia

Max. speed: 6000 r/min Rated speed: 3000 r/min Rated output: 50 W to

Enclosure: IP67



MSMD Low inertia

Max. speed: 5000 r/min : 4500 r/min(750 W) Rated speed: 3000 r/min Enclosure: IP65



High inertia

Max. speed: 5000 r/min : 4500 r/min(750 W) Rated speed: 3000 r/min 750 W(200 V) Rated output: 50 W to 750 W Rated output: 200 W to 750 W Enclosure: IP65



Low inertia

Max. speed: 5000r /min : 4500 r/min (from 4.0 kW)

Rated speed: 3000 r/min Rated output: 750 W(400 V), 1.0 kW to 5.0 kW

Enclosure: IP65, IP67



Middle inertia Max. speed: 3000 r/min 2000 r/min (from 11.0 kW) Rated speed: 2000 r/min

Rated output IP65: 400 W to 5.0 kW IP67: 400 W to 15.0 kW Enclosure: IP65, IP67

: 1500 r/min



MFME (Flat type)* Middle inertia

Max. speed: 3000 r/min Rated speed: 2000 r/min Rated output: 1.5 kW to 4.5 kW Enclosure: IP67



(Low speed/ High torque type) Middle inertia

Max. speed: 2000 r/min Rated speed: 1000 r/min Rated output IP65: 0.9 kW to 3.0 kW IP67: 0.9 kW to 6.0 kW Enclosure: IP65, IP67

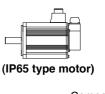


High inertia

Max. speed: 3000 r/min Rated speed: 2000 r/min : 1500 r/min(7.5 kW)

Rated output IP65: 1.0 kW to 5.0 kW IP67: 1.0 kW to 7.5 kW Enclosure: IP65, IP67

Middle capacity motor has the IP67 type.



(IP67 type motor) Part No.: M ME **** * *

C: IP65 motor 1: IP67 motor

		Motors with Gear Reducer
		Type and Specifications P.141
		Model No. designation P.142
r		The combination of the driver
		and the motorP.142
		Table of motor specifications P.143
		Torque Characteristics of Motor
		P.144
		Dimensions of Motor P.147
		Motor Specification
ct		Description
		Environmental Conditions P.182
		Notes on [Motor specification]

Permissible Load at

Built-in Holding Brake

Output Shaft...

For connectors used to connect to the driver, refer to the A-frame table

because both frames use the same connectors

Mass: 21.0 kg

				AC.	100 V	
Mataumaalal		IP65		MSMD5AZG1	MSMD5AZS1	
Motor model		IP67		_	-	
Ammliaalala	Model	A5II, A5 se	eries	MAD	>T1105	
Applicable driver *2	No.	A5IIE, A5I	E series	MAD ⊘T1105E	_	
unven	Fr	ame symb	ol	A-f	rame	
Power supply	capacit	y	(kVA)	().5	
Rated output			(W)		50	
Rated torque			(N·m)	0	.16	
Momentary M	ax. peal	k torque	(N·m)	0.48		
Rated current		(A	(rms))	1.1		
Max. current		(A	(o-p))	4.7		
Regenerative b	rake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0P4280		No limit Note)2		
Rated rotation	al spee	d ((r/min)	3000		
Max. rotationa	l speed	((r/min)	5000		
Moment of ine	rtia	Without b	orake	0.025		
of rotor (×10 ⁻⁴	kg·m²)	With bra	ake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3				30 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single	turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

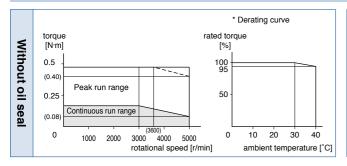
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

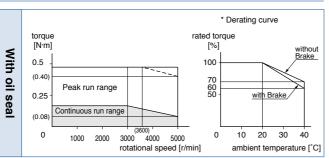
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

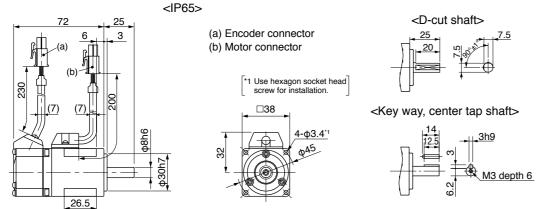




[Unit: mm]

Dimensions

Mass: 0.32 kg <Without Brake>



* For the dimensions with brake, refer to the right page.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

200 V MSMD 50 W [Low inertia, Small capacity]

Motor Specifications

Specifications

				AC2	00 V
		IP65		MSMD5AZG1□	MSMD5AZS1
Motor mode	:1	IP67		-	-
A	Model	A5II, A5	series	MAD	T1505
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1505E	-
unven	Fi	rame sym	bol	A-fr	ame
Power supp	ly capacit	у	(kVA)	0	.5
Rated outpu	ut		(W)	5	0
Rated torqu	е		(N·m)	0.	16
Momentary	Max. pea	k torque	(N·m)	0.4	48
Rated curre	nt	(A(rms))	1.1	
Max. curren	t		(A(o-p))	4.	.7
Regenerative	e brake	Without option No limit Not		t Note)2	
frequency (tim	es/min) Note)1	DV0P	4281	No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	0.025	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With b	rake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

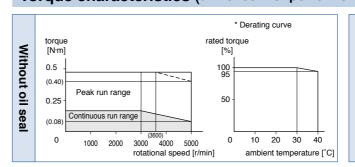
0.29 or more
35 or less
20 or less
0.3
1 or more
24±1.2

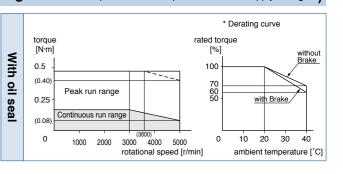
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

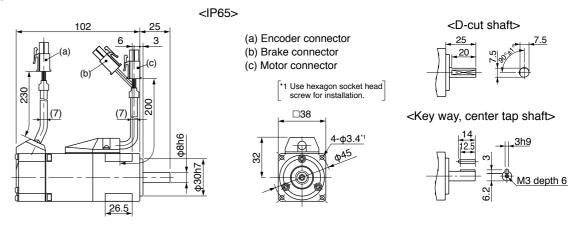
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

Mass: 0.53 kg <With Brake>



* For the dimensions without brake, refer to the left page.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. [Unit: mm]

			AC1	00 V	
Motor model		IP65		MSMD011G1□	MSMD011S1
*1		IP67		-	-
Amaliaabla	Model	A5II, A5 series		MAD	T1107
Applicable driver *2	No.	A5IIE, A	5E series	MAD ⊘T1107E	_
unver	Fr	ame sym	bol	A-fra	ame
Power supply	capacit	y	(kVA)	0	.4
Rated output			(W)	10	00
Rated torque			(N·m)	0.5	32
Momentary Ma	ax. peal	k torque	(N·m)	0.95	
Rated current		(.	A(rms))	1.7	
Max. current		((A(o-p))	7.2	
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0P	4280	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	brake	0.051	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

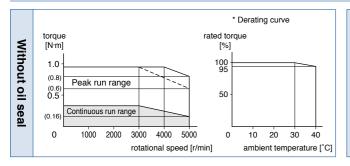
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

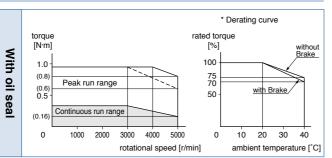
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

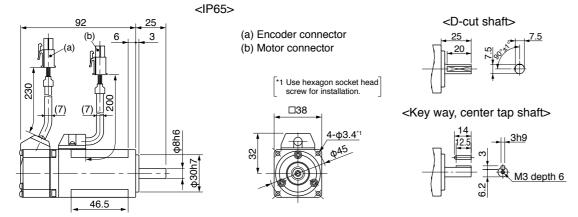




Dimensions

<Cautions>

Mass: 0.47 kg <Without Brake>



* For the dimensions with brake, refer to the right page.

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. [Unit: mm]

200 V MSMD 100 W [Low inertia, Small capacity]

Specifications

					AC2	00 V
			IP65		MSMD012G1□	MSMD012S1
Motor mod	*1		IP67		-	-
A		Model	A5 I I, A5	series	MAD	T1505
Applicable driver	*2	No.	A5IIE, A	5E series	MAD ⊘T1505E	_
ulivei		Fr	ame sym	bol	A-fra	ame
Power sup	ply o	capacity	y	(kVA)	0	.5
Rated outp	out			(W)	10	00
Rated torq	ue			(N·m)	0.:	32
Momentary	у Ма	ax. peal	k torque	(N·m)	0.9	95
Rated curr	ent		(A(rms))	1.1	
Max. curre	nt		((A(o-p))	4.	.7
Regenerati	ve b	rake	Without	option	No limi	t Note)2
frequency (ti			DV0P	4281	No limit Note)2	
Rated rotal	tiona	al spee	d	(r/min)	3000	
Max. rotati	onal	speed		(r/min)	5000	
Moment of	ine	rtia	Without	brake	0.051	
		With b	rake	0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
Resolution			n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

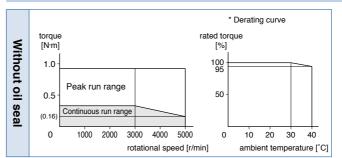
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

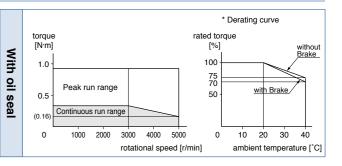
• Permissible load (For details, refer to P.183)

	During assembly During operation	Radial load P-direction (N)	147
		Thrust load A-direction (N)	88
		Thrust load B-direction (N)	117.6
		Radial load P-direction (N)	68.6
		Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

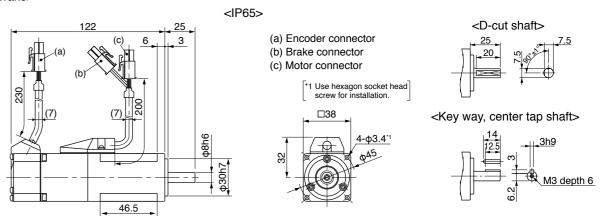
Torque characteristics (at AC200 V of power voltage)





Dimensions

<With Brake> Mass: 0.68 kg



* For the dimensions without brake, refer to the left page.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. [Unit: mm]

Motor model *1 P65 MSMD021G1 MSMD021S1					
Motor model *1 Applicable driver *2 Model driver *2 No. A5II, A5 series MBD T2110E — Frame symbol B-frame				AC1	00 V
Applicable driver *2 Model No. A5II, A5 series MBD T2110 Applicable driver *2 No. A5IIE, A5E series MBD T2110E — Frame symbol B-frame Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Momentary Max. peak torque (N·m) 1.91 Rated current (A(rms)) 2.5 Max. current (A(o-p)) 10.6 Regenerative brake frequency (times/min) Note)1 DVOP4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With out option Note)3 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5	Matar madal		IP65	MSMD021G1□	MSMD021S1
Applicable driver *2 Frame symbol B-frame Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Momentary Max. peak torque (N·m) 1.91 Rated current (A(rms)) 2.5 Max. current (A(o-p)) 10.6 Regenerative brake frequency (times/min) Note)1 DV0P4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With out of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Recommended moment of inertia ratio of the load and the rotor Note)5 Rotary encoder specifications Note)5			IP67	-	_
Rated output (RVA)	A munica a la la	Model	A5II, A5 series	MBD<	T2110
Power supply capacity (kVA) 0.5 Rated output (W) 200 Rated torque (N·m) 0.64 Momentary Max. peak torque (N·m) 1.91 Rated current (A(rms)) 2.5 Max. current (A(o-p)) 10.6 Regenerative brake frequency (times/min) Note)1 DVOP4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With out paice of the load and the rotor Note)3 Rotary encoder specifications Note)5 20-bit Incremental Absolute		No.	A5IIE, A5E series	MBD ⊘T2110E	_
Rated output (W) 200 Rated torque (N·m) 0.64 Momentary Max. peak torque (N·m) 1.91 Rated current (A(rms)) 2.5 Max. current (A(o-p)) 10.6 Regenerative brake frequency (times/min) Note)1 DV0P4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With out brake 0.14 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	anver	Fr	ame symbol	B-fr	ame
Rated torque	Power supply	capacit	y (kVA)	0	.5
Momentary Max. peak torque (N·m) Rated current (A(rms)) Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) Max. rotational speed (r/min) Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Recommended moment of inertia ratio of the load and the rotor Note)5 Rotary encoder specifications Note)5 Note)5 1.91 1.91 1.91 1.91 1.91 1.91 10.6 No limit Note)2 No limit	Rated output		(W)	20	00
Rated current (A(rms)) 2.5 Max. current (A(o-p)) 10.6 Regenerative brake frequency (times/min) Note)1 DV0P4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake 0.14 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Retard current (A(o-p)) 10.6 No limit Note)2 Soundary on soundary Note)3 Note)5	Rated torque		(N·m)	0.	64
Max. current (A(o-p)) 10.6 Regenerative brake frequency (times/min) Note)1 DV0P4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With brake 0.14 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Respons Note (A(o-p)) 10.6 Note (A(o-p)) 1	Momentary Ma	ax. peal	k torque (N·m)	1.91	
Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) Max. rotational speed (r/min) Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Without option No limit Note)2 No limit Note)2 Note)2 Note)3 No limit Note)2 Note)2 Note)3 Note)5	Rated current		(A(rms))	2.5	
frequency (times/min) Note)1 DV0P4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Without brake 0.14 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 No limit Note)2 3000 Moment of inertia of the load and the rotor Note)3 Rotary encoder specifications Note)5	Max. current		(A(o-p))	10.6	
Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake 0.14 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	Regenerative b	rake	Without option	No limit Note)2	
Max. rotational speed (r/min) 5000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Without brake 0.14 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Moment of inertia of the load and the rotor Note)3 Rotary encoder specifications Note)5	frequency (times/r	min) Note)1	DV0P4283	No limit Note)2	
Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake 0.16 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Note)5 Note)5 On 14 On 16 30 times or less 17-bit Incremental Absolute	Rated rotation	al spee	d (r/min)	3000	
of rotor (×10 ⁻⁴ kg·m²) With brake 0.16 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	Max. rotationa	l speed	(r/min)	5000	
Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	Moment of ine	rtia	Without brake	0.14	
ratio of the load and the rotor Note)3 30 times or less Rotary encoder specifications Note)5 20-bit Incremental Absolute	of rotor (×10 ⁻⁴ kg·m²) With brake		0.16		
Hotary encoder specifications Note)5 Incremental Absolute				30 times or less	
Description was simple town 4040570 104070	Rotary encoder specifications Note)5				
Resolution per single turn 1048576 131072	R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

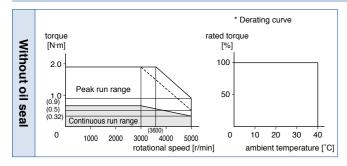
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

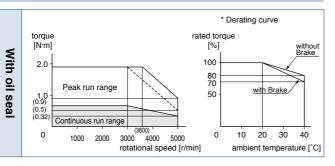
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
document	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

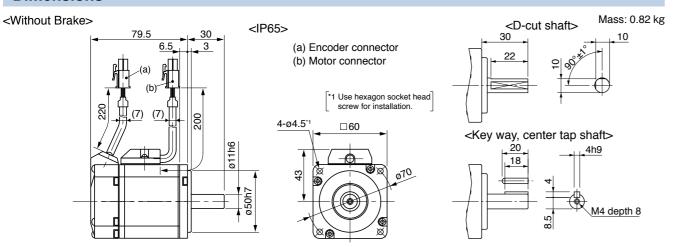
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* For the dimensions with brake, refer to the right page.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MSMD 200 W [Low inertia, Small capacity]

Specifications

				AC2	00 V
Matanasa		IP65		MSMD022G1□	MSMD022S1
Motor mode *	.	IP67		-	_
A	Model	A5 I I, A5	series	MAD	T1507
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1507E	_
diivei	Fr	ame sym	bol	A-fra	ame
Power supp	ly capacit	y	(kVA)	0	.5
Rated outpu	it		(W)	20	00
Rated torqu	е		(N·m)	0.0	64
Momentary	Max. peal	k torque	(N·m)	1.91	
Rated curre	nt	(A(rms))	1.6	
Max. current (A(o-p))			6.9		
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	0.14	
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

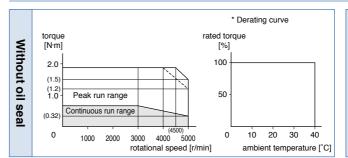
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

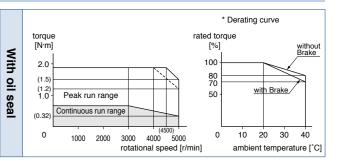
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
During operation	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

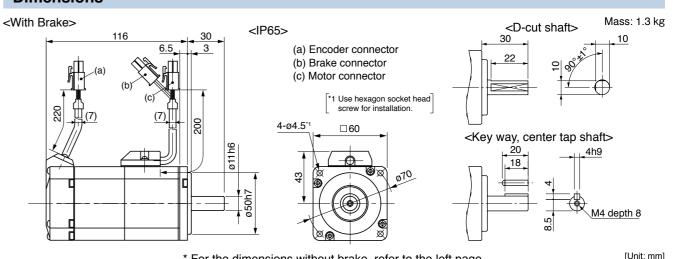
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



* For the dimensions without brake, refer to the left page.

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

				AC100 V		
IP65		MSMD041G1□	MSMD041S1□			
Motor model *1		IP67		-	_	
A constitue de la	Model	A5 I I, A5	series	MCD<	T3120	
Applicable driver *2	No.	A5IIE, A5E series		MCD ♦T3120E	_	
unven	Fr	ame sym	bol	C-fr	ame	
Power supply	capacit	у	(kVA)	0	.9	
Rated output			(W)	40	00	
Rated torque			(N·m)	1.	.3	
Momentary Max. peak torque (N·m)			3.8			
Rated current (A(rms))			4.6			
Max. current (A(o-p))			19.5			
Regenerative brake Without option		No limit Note)2				
frequency (times/	min) Note)1	DV0P	4282	No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	t brake	0.26		
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

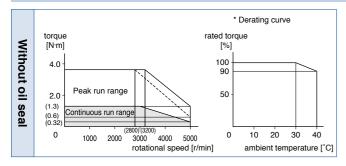
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

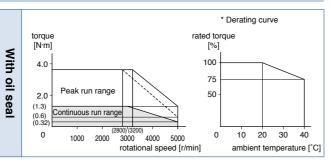
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

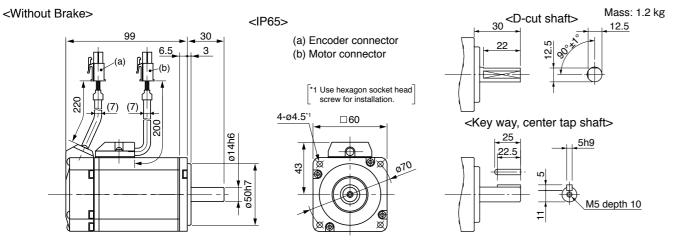
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* For the dimensions with brake, refer to the right page.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MSMD 400 W [Low inertia, Small capacity]

Specifications

			AC2	00 V	
Matanaaa		IP65		MSMD042G1□	MSMD042S1
Motor mode *		IP67		-	-
Annlinable	Model	A5 I I, A5	series	МВО	T2510
Applicable driver *	No.	A5IIE, A	5E series	MBD ⊘T2510E	_
diivci	Fr	ame sym	bol	B-fra	ame
Power supp	y capacit	y	(kVA)	0	.9
Rated outpu	t		(W)	40	00
Rated torque	Э		(N·m)	1.	.3
Momentary	Max. peal	k torque	(N·m)	3.8	
Rated curre	nt	(A(rms))	2.6	
Max. current (A(o-p))			11.0		
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of in	nertia	Without	brake	0.26	
of rotor (×10	⁻⁴ kg·m²)	With b	rake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

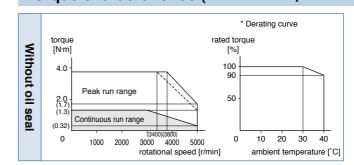
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2
• • • • • • •	1

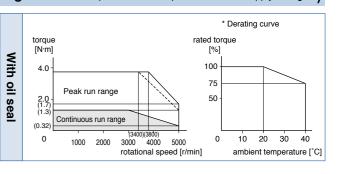
• Permissible load (For details, refer to P.183)

Radial load P-direction (N)	392
Thrust load A-direction (N)	147
Thrust load B-direction (N)	196
Radial load P-direction (N)	245
Thrust load A, B-direction (N)	98
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

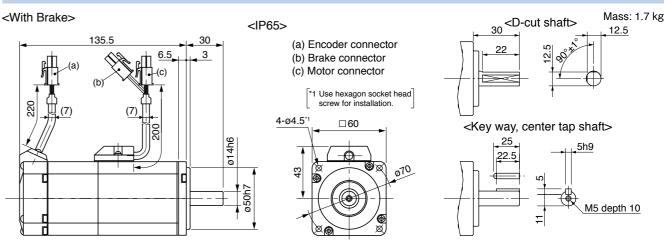
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



* For the dimensions without brake, refer to the left page.

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

[Unit: mm]

			AC2	00 V	
IP65		IP65	MSMD082G1□	MSMD082S1□	
Motor model *1		IP67	-	-	
Amaliaabla	Model	A5II, A5 series	MCD<	T3520	
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_	
unver	Fr	ame symbol	C-fra	ame	
Power supply	capacit	y (kVA)	1.	3	
Rated output		(W)	75	50	
Rated torque		(N·m)	2.4		
Momentary Ma	Momentary Max. peak torque (N·m)			7.1	
Rated current		(A(rms))	4.0		
Max. current		(A(o-p))	17.0		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/r	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	4500		
Moment of ine	rtia	Without brake	0.87		
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.97		
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.' Do not use this for braking the motor in motion.

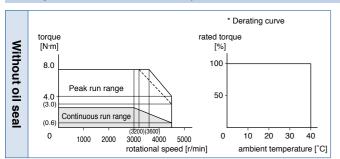
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

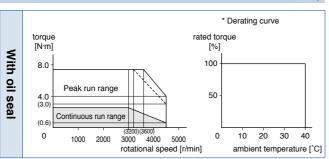
• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
assembly	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

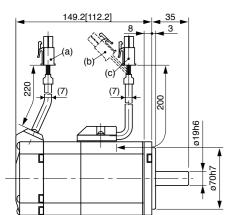
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

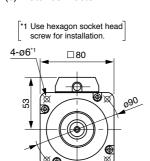




Dimensions



(a) Encoder connector (b) Brake connector (c) Motor connector *1 Use hexagon socket head



With brake/ 3.1 kg <Key way, center tap shaft>

Mass: Without brake/ 2.3 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

<IP65>

MEMO

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

			AC100 V		
Mataumaadal			MHMD021G1□	MHMD021S1	
Motor model *1		IP67		-	_
Amuliaabla	Model	A5I , A5 s	eries	MBD ◇T2110	
Applicable driver *2	No.	A5IIE, A5I	E series	MBD ⊘T2110E	_
unver	Fı	ame symb	ol	B-fra	ame
Power supply	capacit	y	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.	64
Momentary M	ax. pea	k torque	(N·m)	1.91	
Rated current		(A	(rms))	2.5	
Max. current		(A	۸(o-p))	10.6	
Regenerative I	orake	Without o	ption	No limit Note)2	
frequency (times/	min) Note)1	DV0P4	283	No limit Note)2	
Rated rotation	al spee	d ((r/min)	3000	
Max. rotationa	al speed	((r/min)	5000	
Moment of ine	ertia	Without I	orake	0.42	
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single	turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

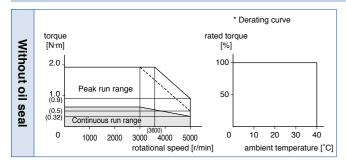
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

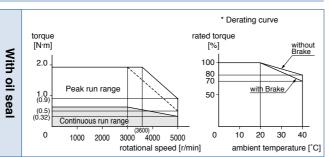
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

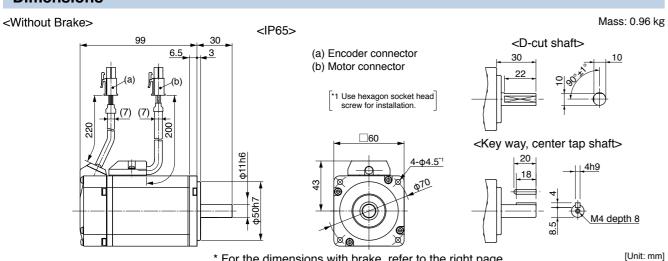
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



* For the dimensions with brake, refer to the right page.

Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V
M -t		IP65		MHMD022G1□	MHMD022S1
Motor mode *	•	IP67		-	-
A	Model	A5II, A5	series	MAD	T1507
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1507E	_
unvoi	Fi	rame sym	bol	A-fr	ame
Power supp	ly capacit	у	(kVA)	0	.5
Rated outpu	ıt		(W)	20	00
Rated torqu	е		(N·m)	0.0	64
Momentary	Max. pea	k torque	(N·m)	1.91	
Rated curre	nt	(A(rms))	1.6	
Max. curren	t		(A(o-p))	6.9	
Regenerative	e brake	Without option		No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	0.42	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolutio	n per sing	le turn	1048576	131072

200 V MHMD 200 W [High inertia, Small capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

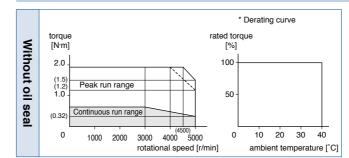
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

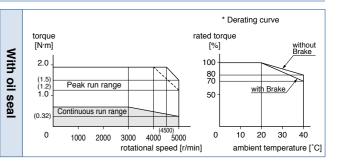
• Permissible load (For details, refer to P.183)

	During assembly	Radial load P-direction (N)	392
		Thrust load A-direction (N)	147
		Thrust load B-direction (N)	196
	During	Radial load P-direction (N)	245
	operation	Thrust load A, B-direction (N)	98

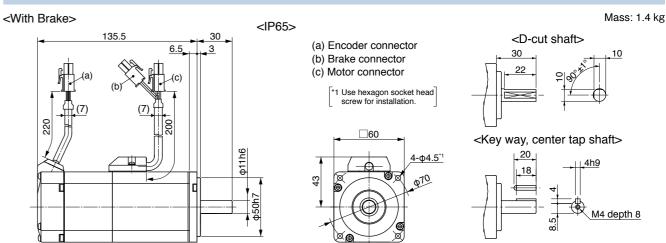
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* For the dimensions without brake, refer to the left page.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

			AC100 V		
		MHMD041G1□	MHMD041S1		
Motor model		IP67		-	_
A madia a la la	Model	A5 I I, A5 se	eries	MCD ⊘T3120	
Applicable driver *2	No.	A5IIE, A5E series		MCD ♦T3120E	_
unvei	Fr	ame symbo	ol	C-fr	ame
Power supply	capacit	/	(kVA)	0	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1.	.3
Momentary M	ax. peal	c torque	(N·m)	3.8	
Rated current		(A	(rms))	4.6	
Max. current		(A	(o-p))	19.5	
Regenerative b	orake	Without o	ption	No limit Note)2	
frequency (times/	min) Note)1	DV0P42	282	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without b	rake	0.67	
of rotor (×10 ⁻⁴	kg·m²)	With bra	ake	0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single	turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

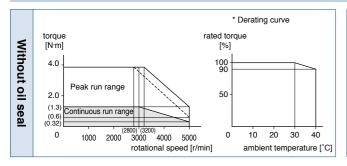
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

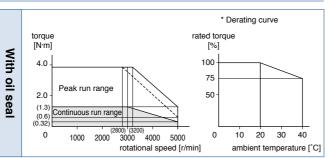
Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
accombiy	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

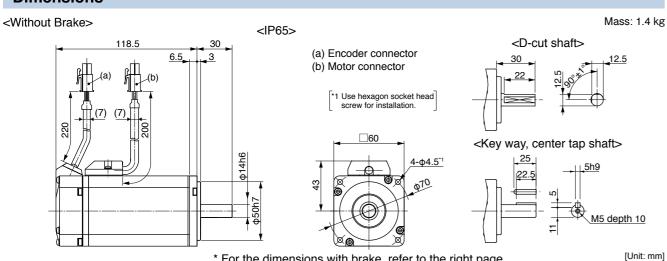
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



* For the dimensions with brake, refer to the right page.

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. 200 V MHMD 400 W [High inertia, Small capacity]

Motor Specifications

Specifications

				AC200 V		
		IP65		MHMD042G1□	MHMD042S1	
Motor mode *	:1	IP67		-	_	
A	Model	A5II, A5	series	МВО	T2510	
Applicable driver *	No.	A5IIE, A5E series		MBD ⊘T2510E	-	
divoi	Fı	rame sym	bol	B-fra	ame	
Power supp	ly capacit	у	(kVA)	0	.9	
Rated outpu	ut		(W)	40	00	
Rated torqu	е		(N·m)	1.	.3	
Momentary	Max. pea	k torque	(N·m)	3.8		
Rated curre	nt	(A(rms))	2.6		
Max. curren	t		(A(o-p))	11.0		
Regenerative	e brake	Without option		No limit Note)2		
frequency (tim	es/min) Note)1	DV0P4283		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	3000		
Max. rotatio	nal speed		(r/min)	5000		
Moment of i	nertia	Without	brake	0.67		
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With b	orake	0.70		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less				
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

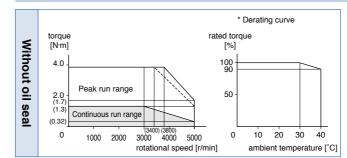
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

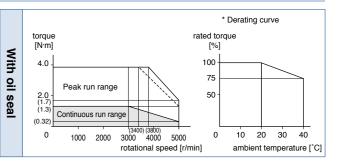
• Permissible load (For details, refer to P.183)

	During assembly During operation	Radial load P-direction (N)	392
		Thrust load A-direction (N)	147
		Thrust load B-direction (N)	196
		Radial load P-direction (N)	245
		Thrust load A, B-direction (N)	98

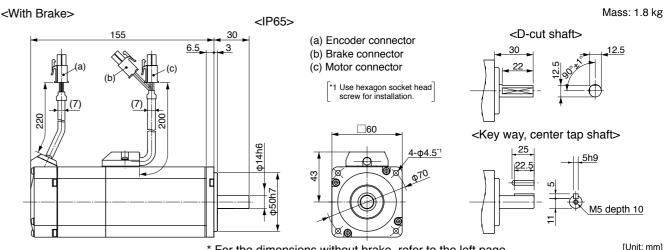
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* For the dimensions without brake, refer to the left page.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

			AC2	00 V	
		IP65	MHMD082G1	MHMD082S1	
Motor model *1		IP67	-	-	
Amaliaalala	Model	A5II, A5 series	MCD<	T3520	
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_	
unver	Fr	ame symbol	C-fr	ame	
Power supply capacity (kVA) 1.3		.3			
Rated output		(W)	75	50	
Rated torque		(N·m)	2	.4	
Momentary M	ax. peal	k torque (N·m)	7.1		
Rated current (A(rms))			4.0		
Max. current		(A(o-p))	17	17.0	
Regenerative b	Regenerative brake Without option		No lim	No limit Note)2	
frequency (times/	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	ated rotational speed (r/min)		min) 3000		
Max. rotationa	ıl speed	(r/min)	4500		
Moment of ine	ertia	Without brake	1.51		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	1.61		
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.) Do not use this for braking the motor in motion.

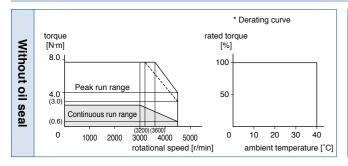
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

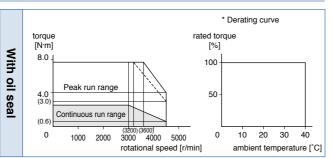
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	686
	Thrust load A-direction (N)	294
	Thrust load B-direction (N)	392
During operation	Radial load P-direction (N)	392
	Thrust load A, B-direction (N)	147

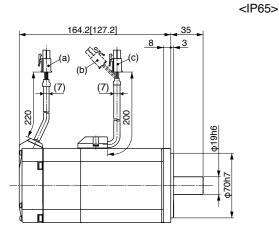
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

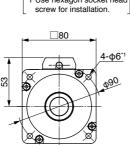


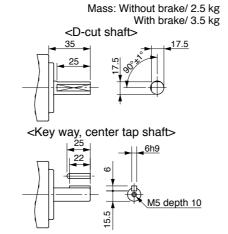


Dimensions



(a) Encoder connector (b) Brake connector (c) Motor connector *1 Use hexagon socket head screw for installation.





* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

MEMO

			AC100 V		
		IP65		-	-
Motor model *1		IP67		MSME5AZG1	MSME5AZS1
Annlinable	Model	A5I , A 5 s	eries	MAD ◇T110 5	
Applicable driver *2	No.	A5IIE, A5	E series	MAD ⊘T1105E	_
unver	Fr	ame symb	ol	A-fra	ame
Power supply	capacit	y	(kVA) 0.4		
Rated output			(W)	5	0
Rated torque			(N·m)	0.16	
Momentary Ma	ax. peal	k torque	(N·m)	0.48	
Rated current (A(rms))			1.1		
Max. current (A(o-p))			4.7		
Regenerative brake Without option		No limi	t Note)2		
frequency (times/i	min) Note)1	DV0P4	280	No limit Note)2	
Rated rotation	ated rotational speed (r/min) 3000		00		
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without I	brake	0.025	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single	e turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

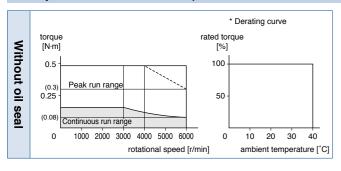
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

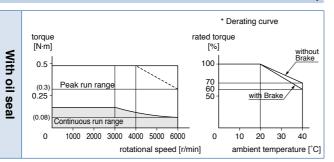
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



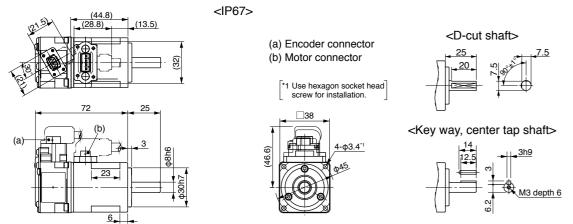


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

· Motor cables for opposite to output shaft cannot be used with 50 W motor.

Mass: 0.31 kg

[Unit: mm]



* For the dimensions with brake, refer to the right page.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V
Matawasala		IP65		-	-
Motor mode	:1	IP67		MSME5AZG1	MSME5AZS1
Annlinable	Model	Model A5II, A5 series		MAD	T1505
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1505E	-
divei	Fr	ame sym	bol	A-fra	ame
Power supp	ly capacit	y	(kVA)	0	.5
Rated outpu	ut		(W)	5	0
Rated torqu	е		(N·m)	0.	16
Momentary	Max. peal	k torque	(N·m)	0.48	
Rated curre	nt	(A(rms))	1.1	
Max. current (A(o-p))			4.7		
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4280		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	6000	
Moment of i	inertia	Without	brake	0.0	125
of rotor (×10	0 ⁻⁴ kg·m²)	With b	rake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072

200 V MSME 50 W [Low inertia, Small capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

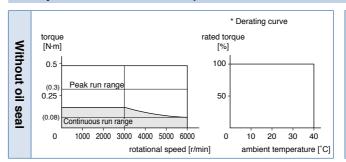
0.29 or more
35 or less
20 or less
0.3
1 or more
24±1.2

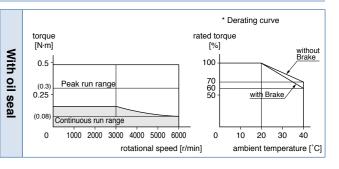
• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	147
During assembly	Thrust load A-direction (N)	88
docombry	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

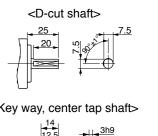
Torque characteristics (at AC200V of power voltage)

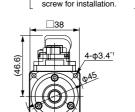




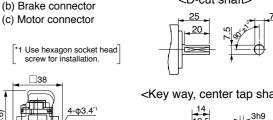
Dimensions < In Case of With Brake, Cable direction to output shaft.>

· Motor cables for opposite to output shaft cannot be used with 50 W motor.





(a) Encoder connector



<Key way, center tap shaft>

* For the dimensions without brake, refer to the left page.

[Unit: mm]

Mass: 0.51 kg

Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

			AC1	00 V
Motor model	IP65		-	-
WIOTOT MODE!		IP67	MSME011G1	MSME011S1
A mustic a late	Model	A5II, A5 series	MAD ◇T1107	
Applicable driver *2	No.	A5IIE, A5E series	MAD ⊘T1107E	_
unver	Fı	ame symbol	A-fra	ame
Power supply	capacit	y (kVA)	0	.4
Rated output		(W)	10	00
Rated torque		(N·m)	0.:	32
Momentary Ma	ax. pea	k torque (N·m)	0.95	
Rated current		(A(rms))	1.6	
Max. current		(A(o-p))	6.9	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4280	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	6000	
Moment of ine	rtia	Without brake	0.051	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

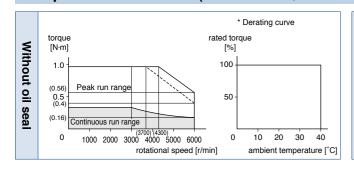
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

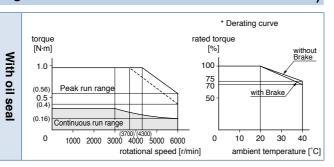
Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	147
During assembly	Thrust load A-direction (N)	88
accombiy	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

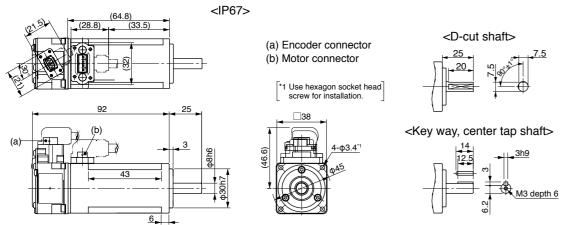




Dimensions < In Case of Without Brake, Cable direction to output shaft.>

· Motor cables for opposite to output shaft cannot be used with 100 W motor.

Mass: 0.46 kg



* For the dimensions with brake, refer to the right page.

Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. [Unit: mm]

200 V MSME 100 W [Low inertia, Small capacity]

Specifications

				AC2	00 V
		IP65		-	-
Motor mod	el *1	IP67		MSME012G1□	MSME012S1
	Mode	A5II, A5	series	MAD \diamondsuit T1505	
Applicable driver	*2 No.	A5IE, A	5E series	MAD◇T1505E	_
unvei	F	rame sym	bol	A-fra	ame
Power supp	oly capaci	ty	(kVA)	0.	.5
Rated outp	ut		(W)	10	00
Rated torqu	ıe		(N·m)	0.5	32
Momentary	Max. pea	k torque	(N·m)	0.95	
Rated curre	ent	(A(rms))	1.1	
Max. curre	nt		(A(o-p))	4.7	
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tir		DV0P4280		No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	3000	
Max. rotation	onal spee	d	(r/min)	6000	
Moment of	inertia	Without	brake	0.0	51
of rotor (x1	0 ⁻⁴ kg·m²)	With b	orake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3		tia Note)3	30 times or less		
Rotary enc	oder spec	ifications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per sin			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

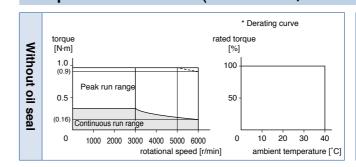
• Permissible load (For details, refer to P.183)

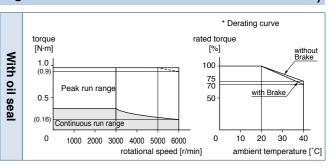
	Radial load P-direction (N)	147
During assembly	Thrust load A-direction (N)	88
docombry	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

<u>e</u>

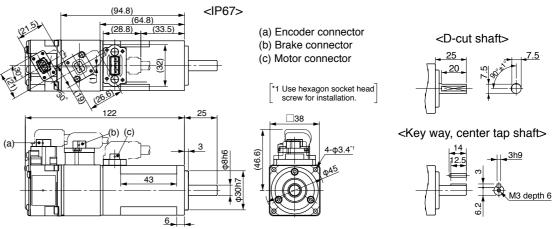




Dimensions < In Case of With Brake, Cable direction to output shaft.>

· Motor cables for opposite to output shaft cannot be used with 100 W motor.

Mass: 0.66 kg



* For the dimensions without brake, refer to the left page.

[Unit: mm]

Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

				AC1	00 V
		IP65		-	_
Motor model *1		IP67		MSME021G1□	MSME021S1
A	Model	A5II, A5 series		MBD ⊘ T2110	
Applicable driver *2	No.	A5IIE, A5	E series	MBD ⊘T2110E	_
divei	Fr	ame symb	ool	B-fra	ame
Power supply	capacit	y	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.64	
Momentary Ma	ax. peal	k torque	(N·m)	1.91	
Rated current		(A	(rms))	2.5	
Max. current		(/	۹(o-p))	10.6	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/n	nin) Note)1	DV0P4283		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.14	
of rotor ($\times 10^{-4}$	kg·m²)	With br	rake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encode	r speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Re	esolutio	n per single	e turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

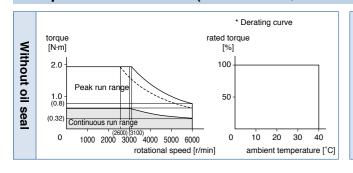
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

Permissible load (For details, refer to P.183)

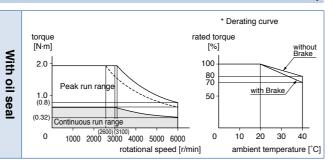
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

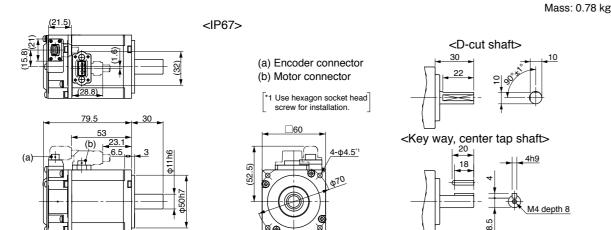


<Cautions>



[Unit: mm]

Dimensions < In Case of Without Brake, Cable direction to output shaft.>



* For the dimensions with brake, refer to the right page.

Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MSME 200 W [Low inertia, Small capacity]

Specifications

				AC2	00 V
Mataumaada		IP65		-	-
Motor mode	•	IP67		MSME022G1□	MSME022S1
A 15 15 1	Model	A5II, A5 series		MAD \diamondsuit T1507	
Applicable driver **	No.	A5IIE, A	5E series	MAD ⊘T1507E	-
unver	Fr	ame sym	bol	A-fra	ame
Power suppl	ly capacit	y	(kVA)	0	.5
Rated outpu	t		(W)	20	00
Rated torque	е		(N·m)	0.0	64
Momentary	Max. peal	k torque	(N·m)	1.91	
Rated currer	nt	(A(rms))	1.5	
Max. current	t	((A(o-p))	6.5	
Regenerative	e brake	Without option		No limit Note)2	
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	6000	
Moment of in	nertia	Without	brake	0.	14
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	0.	16
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single tu			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

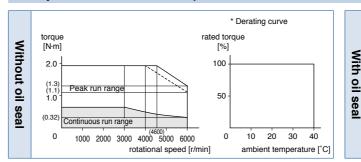
	•
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

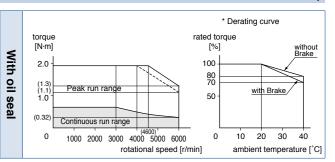
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

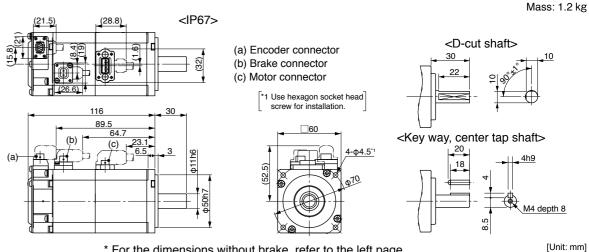
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions < In Case of With Brake, Cable direction to output shaft.>



* For the dimensions without brake, refer to the left page.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

			AC1	00 V
Motor model	IP65		-	-
*1		IP67	MSME041G1□	MSME041S1
Annlinabla	Model	A5II, A5 series	MCD<	T3120
Applicable 42	No.	A5IIE, A5E series	MCD ⊘T3120E	_
divei	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1.	.3
Momentary Max. peak torque (N·m)			3.8	
Rated current		(A(rms))	4.6	
Max. current	Max. current (A(o-p))		19.5	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4282	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	6000	
Moment of ine	rtia	Without brake	0.26	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

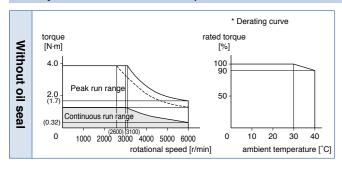
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

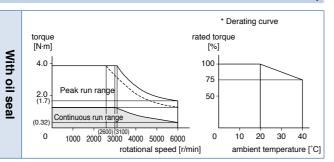
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
document	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

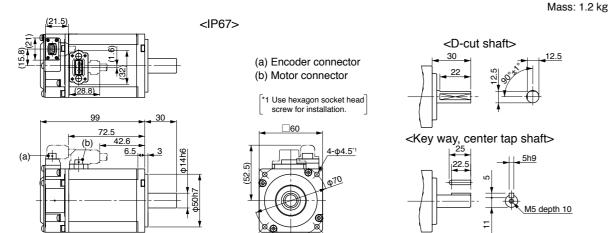
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions < In Case of Without Brake, Cable direction to output shaft.>



* For the dimensions with brake, refer to the right page.

[Unit: mm]

Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V
		IP65		-	-
Motor model		IP67		MSME042G1□	MSME042S1
	Model	A5II, A5	series	MBD()	T2510
Applicable driver *2	No.	A5IIE, A	5E series	MBD⇔T2510E	_
unver	Fr	ame sym	bol	B-fr	ame
Power supply	y capacit	у	(kVA)	0	.9
Rated output	t		(W)	40	00
Rated torque)		(N·m)	1.	.3
Momentary N	Max. peal	k torque	(N·m)	3.8	
Rated curren	nt	(A(rms))	2.4	
Max. current (A(o-p))		10.2			
Regenerative brake		Without option		No limi	t Note)2
frequency (time	s/min) Note)1	DV0P4283		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	6000	
Moment of in	ertia	Without	t brake	0.26	
of rotor (×10	⁻⁴ kg·m²)	With brake		0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encod	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
	n per sing	ıle turn	1048576	131072	

200 V MSME 400 W [Low inertia, Small capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

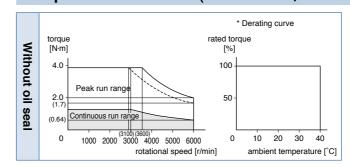
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

• Permissible load (For details, refer to P.183)

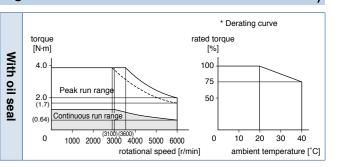
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
docombry	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

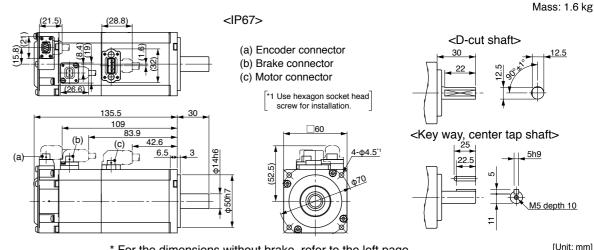
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



Dimensions < In Case of With Brake, Cable direction to output shaft.>



* For the dimensions without brake, refer to the left page.

				AC2	00 V
		IP65		-	-
Motor model *1		IP67		MSME082G1□	MSME082S1□
Ammliaabla	Model	A5II, A5	series	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E series		MCD ⊘T3520E	_
anver	Fr	ame sym	ıbol	C-fra	ame
Power supply	capacit	y	(kVA)	1.	.3
Rated output			(W)	75	50
Rated torque			(N·m)	2.4	
Momentary Max. peak torque (N·m)			7.1		
Rated current (A(rms))		4.1			
Max. current (A(o-p))		17.4			
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Withou	t brake	0.87	
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

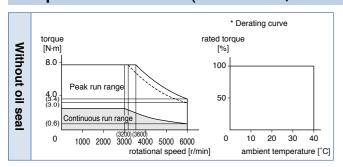
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

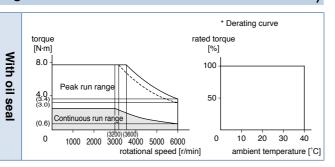
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	686
	Thrust load A-direction (N)	294
document	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

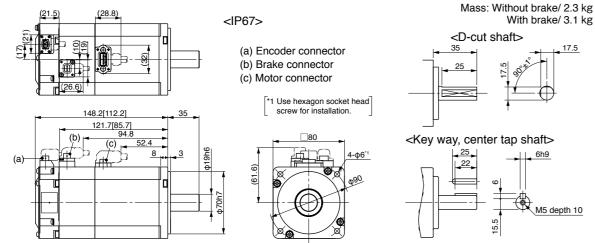
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions < In Case of With Brake, Cable direction to output shaft.>



* Figures in [] represent the dimensions without brake.

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V
Matanada		IP65		MSME102GC□	MSME102SC
Motor mode	:1	IP67		MSME102G1□	MSME102S1
A 11 11	Model	A5II, A5 series		MDD<	T5540
Applicable driver *	No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	_
unven	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.8
Rated outpu	ut		(W)	10	00
Rated torqu	е		(N·m)	3.	18
Momentary	Max. peal	k torque	(N·m)	9.55	
Rated curre	nt	(A(rms))	6.6	
Max. curren	t	((A(o-p))	2	8
Regenerative	e brake	Without option		No limi	t Note)2
frequency (tim	es/min) Note)1	DV0P4284		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	2.03	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	1048576	131072

200 V MSME 1.0 kW [Low inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

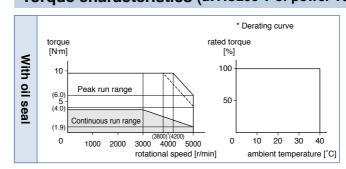
•	
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

45

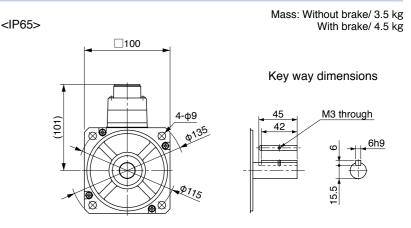
142[169]

97[124]

122[149]

66

(For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

			AC2	00 V	
Motor model		IP65		MSME152GC□	MSME152SC
*1		IP67		MSME152G1□	MSME152S1
Annliachla	Model	A5II, A5	series	MDD ⊘ T5540	
Applicable driver *2	No.	A5IIE, A5E series		MDD ⊘T5540E	_
divei	Fr	ame sym	bol	D-fra	ame
Power supply	capacit	y	(kVA)	2.	.3
Rated output			(W)	15	00
Rated torque			(N·m)	4.	77
Momentary Ma	ax. peal	k torque	(N·m)	14.3	
Rated current		(,	A(rms))	8.2	
Max. current		((A(o-p))	35	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	brake	2.84	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

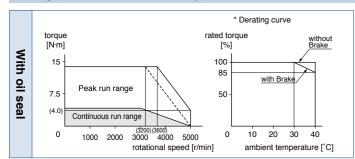
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

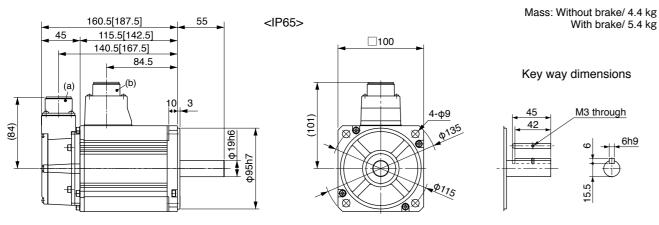
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



(For IP67 motor, refer to P.137.)



(a) Encoder connector

Dimensions

- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V	
M-4		IP65		MSME202GC□	MSME202SC	
Motor mode *	.	IP67		MSME202G1□	MSME202S1	
A I' I- I -	Model	A5 I I, A5	series	MED<	T7364	
Applicable driver *	No.	A5IIE, A	5E series	MED ⊘T7364E	_	
unven	Fr	ame sym	bol	E-fra	ame	
Power supp	ly capacit	у	(kVA)	3	.3	
Rated outpu	t		(W)	20	00	
Rated torque	е		(N·m)	6.:	37	
Momentary	Max. peal	k torque	(N·m)	19	19.1	
Rated curre	nt	(A(rms))	11.3		
Max. curren	t	((A(o-p))	4	8	
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0P4285		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	3000		
Max. rotation	nal speed		(r/min)	5000		
Moment of in	nertia	Without	brake	3.68		
of rotor (×10) ⁻⁴ kg·m²)	With brake		4.01		
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less			
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072	

200 V MSME 2.0 kW [Low inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

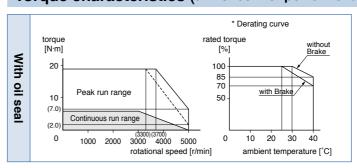
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

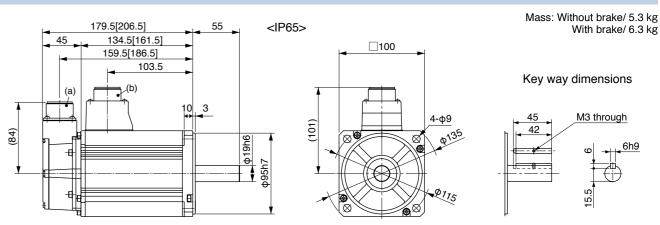
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC2	00 V
		IP65		MSME302GC□	MSME302SC□
Motor model		IP67		MSME302G1□	MSME302S1□
Amaliaabla	Model	A5II, A5	series	MFD♦	TA390
Applicable driver *2	No.	A5IIE, A	5E series	MFD ⊘TA390E	_
unven	Fı	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	4.	.5
Rated output			(W)	30	00
Rated torque			(N·m)	9.	55
Momentary M	ax. pea	k torque	(N·m)	28.6	
Rated current		(.	A(rms))	18.1	
Max. current	Max. current (A(o-p))		77		
Regenerative	brake	Without option		No limit Note)2	
frequency (times	/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	5000	
Moment of ine	ertia	Without	brake	6.50	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

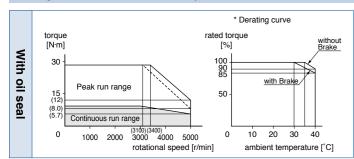
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

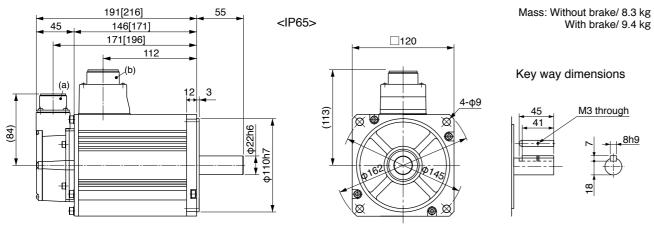
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V
N 4 - 4 - · · · · · · · · · · · · · · · · · ·		IP65		MSME402GC□	MSME402SC
Motor mode *	•	IP67		MSME402G1□	MSME402S1
A I' l. l .	Model	A5 I I, A5	series	MFD<	TB3A2
Applicable driver *	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_
unven	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	6	.0
Rated outpu	ıt		(W)	40	00
Rated torqu	е		(N·m)	12	2.7
Momentary	Max. peal	k torque	(N·m)	38.2	
Rated curre	nt	(A(rms))	19.6	
Max. curren	t	((A(o-p))	8	3
Regenerative	e brake	Without option		No limi	t Note)2
frequency (time	es/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	4500	
Moment of i	nertia	Without brake		12.9	
of rotor (×10) ⁻⁴ kg·m²)	With brake		14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

200 V MSME 4.0 kW [Low inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

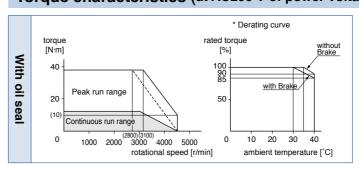
`	•	,
Sta	atic friction torque (N·m)	16.2 or more
En	gaging time (ms)	110 or less
Re	leasing time (ms) Note)4	50 or less
Ex	citing current (DC) (A)	0.90±10 %
Re	leasing voltage (DC) (V)	2 or more
Ex	citing voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

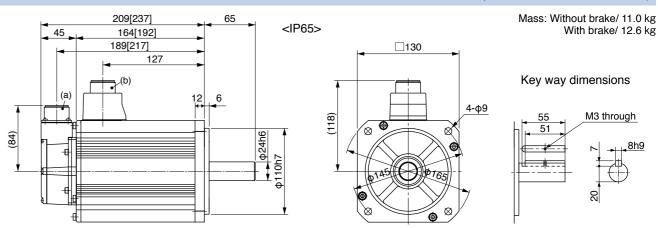
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC2	00 V
Motor model		IP65	ı	MSME502GC□	MSME502SC□
*1		IP67		MSME502G1□	MSME502S1
	Model	A5II, A5 series		MFD ⊘TB3A2	
Applicable driver *2	No.	A5IIE, A5E serie	s I	MFD ⊘TB3A2 E	_
unvoi	Fr	ame symbol		F-fra	ame
Power supply capacity (kVA))	7.	.5
Rated output		(W)	50	00
Rated torque		(N·m)	15.9	
Momentary Max. peak torque (N·m))	47.7	
Rated current		(A(rms))	24.0	
Max. current (A(o-p))				102	
Regenerative b	rake	Without option		357	
frequency (times/r	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake		17.4	
of rotor ($\times 10^{-4}$	kg·m²)	With brake		18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			3	15 times or less	
Rotary encoder specifications Note)5			5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn		1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

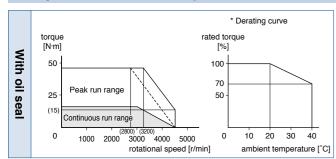
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

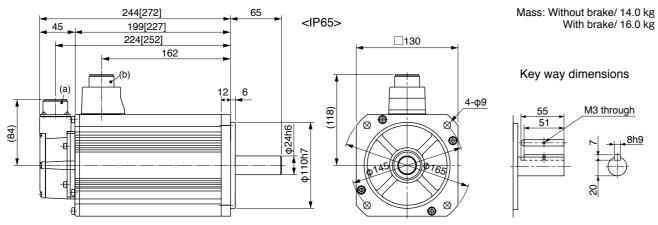
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

					AC2	00 V
			IP65		MDME102GC□	MDME102SC
Motor mod	el *1		IP67		MDME102G1□	MDME102S1
	Мо	del	A5II, A5 series		MDD ◇T3530	
Applicable driver	*2 No	-	A5IIE, A5E series		MDD ⊘T3530E	_
unver		Fr	ame sym	bol	D-fra	ame
Power sup	ply cap	acity	у	(kVA)	1.	.8
Rated outp	ut			(W)	10	00
Rated torqu	ue			(N·m)	4.	77
Momentary	/ Max. p	oeal	k torque	(N·m)	14.3	
Rated curre	ent		(.	A(rms))	5.7	
Max. current (A(o-p))		(A(o-p))	2	4		
Regenerativ	ve brake	Э	Without	option	No limit Note)2	
frequency (times/min) Note)1		lote)1	DV0P4284		No limit Note)2	
Rated rotal	tional s _l	pee	d	(r/min)	2000	
Max. rotation	onal sp	eed		(r/min)	3000	
Moment of	inertia		Without	brake	4.0	60
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		m²)	With b	rake	5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications		Note)5	20-bit Incremental	17-bit Absolute		
Resolution per s		n per sina	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

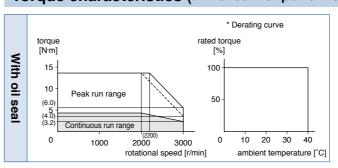
,
4.9 or more
80 or less
70 or less
0.59±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

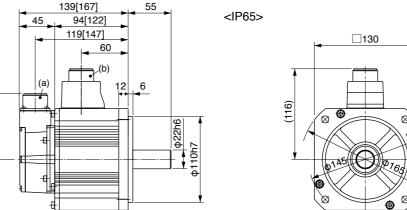
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.138.)



Key way dimensions

Mass: Without brake/ 5.2 kg

With brake/ 6.7 kg

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC200 V		
IP65		IP65	MDME152GC	MDME152SC		
Motor model *1		IP67	MDME152G1	MDME152S1		
	Model	A5II, A5 series	I, A5 series			
Applicable driver *2	No.	A5IIE, A5E series	MDD \diamondsuit T5540E	_		
unvei	Fr	ame symbol	D-fr	ame		
Power supply	capacit	y (kVA)	2	.3		
Rated output		(W)	15	00		
Rated torque		(N·m)	7.	7.16		
Momentary Ma	ax. peal	k torque (N·m)	21.5			
Rated current		(A(rms))	9.4			
Max. current		(A(o-p))	40			
Regenerative brake Wi		Without option	No limit Note)2			
frequency (times/n		DV0P4284	No limit Note)2			
Rated rotation	al spee	d (r/min)	2000			
Max. rotationa	l speed	(r/min)	3000			
Moment of ine	rtia	Without brake	6.70			
of rotor ($\times 10^{-4}$	kg·m²)	With brake	7.99			
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encode	r speci	fications Note)5	20-bit Incremental	17-bit Absolute		
Re	esolutio	n per single turn	1048576	131072		

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

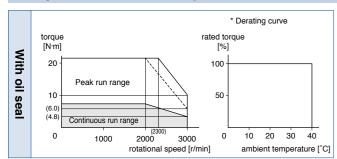
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

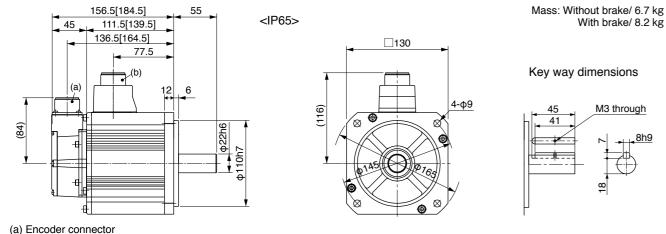
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.138.)



(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V
M -4		IP65		MDME202GC	MDME202SC
Motor mode	:1	IP67		MDME202G1□	MDME202S1
	Model	A5II, A5 series		MED ⊘T7364	
Applicable driver *	No.	A5IIE, A5E series		MED ⊘T7364E	-
unver	Fr	ame sym	bol	E-fra	ame
Power supp	ly capacity	y	(kVA)	3.	.3
Rated outpu	ut		(W)	20	00
Rated torqu	е		(N·m)	9.	55
Momentary	Max. peal	k torque	(N·m)	28.6	
Rated curre	nt	(A(rms))	11.5	
Max. curren	nt		(A(o-p))	4	9
Regenerative brake		Without option		No limi	t Note)2
frequency (tim	nes/min) Note)1	DV0P4285		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	inertia	Without	t brake	8.	72
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With b	orake	10	0.0
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		le turn	1048576	131072	

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

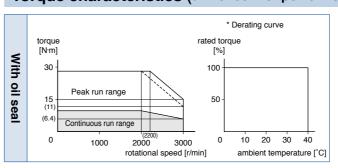
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

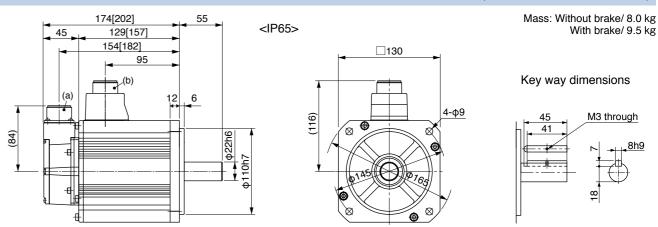
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC200 V	
Matauraadal		IP65	MDME302GC□	MDME302SC□
Motor model *1		IP67	MDME302G1□	MDME302S1
A 1: 1.1	Model	A5II, A5 series	MFD◇	TA390
Applicable *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_
dilvei	Fr	ame symbol	F-fr	ame
Power supply of	capacity	y (kVA)	4	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14.3	
Momentary Ma	ıx. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	17.4	
Max. current (A(o-p))		74		
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotationa	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of iner	rtia	Without brake	12.9	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

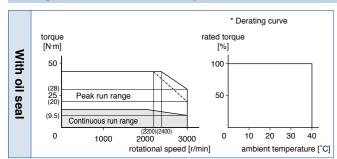
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

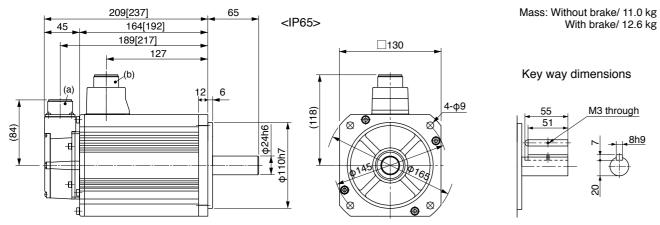
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
Matanasa		IP65		MDME402GC□	MDME402SC
Motor mode *	.	IP67		MDME402G1□	MDME402S1
A	Model	A5II, A5 series		MFD ♦TB3A2	
Applicable driver *	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_
unven	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	6	.0
Rated output	ıt		(W)	40	00
Rated torque	е		(N·m)	19).1
Momentary	Max. peal	k torque	(N·m)	57.3	
Rated curre	nt	(A(rms))	21.0	
Max. current (A(o-p))			8	9	
Regenerative	e brake	Without	option No limit Note)2		t Note)2
frequency (times/min) Note)1		DV0P4285×2		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	37.6	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	42.9	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

200 V MDME 4.0 kW [Middle inertia, Middle capacity]

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

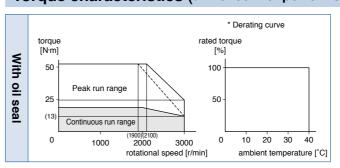
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

Radial load P-direction (N)	1666
Thrust load A-direction (N)	784
Thrust load B-direction (N)	980
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



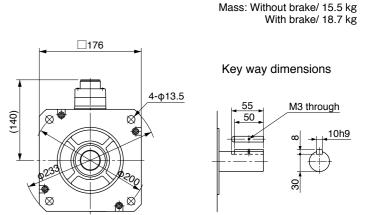
Dimensions

178[207]

133[162]

158[187]

(For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

<IP65>

			AC2	00 V
Motor model		IP65	MDME502GC	MDME502SC
*1		IP67	MDME502G1□	MDME502S1
Applicable	Model	A5II, A5 series	MFD ⊘TB3A2	
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	7	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23.9	
Momentary Ma	ax. peal	k torque (N·m)	71.6	
Rated current		(A(rms))	25.9	
Max. current (A(o-p))		110		
Regenerative b	rake	Without option	120	
frequency (times/n	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotations	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of ine	rtia	Without brake	48.0	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

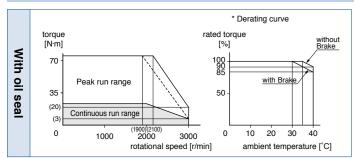
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

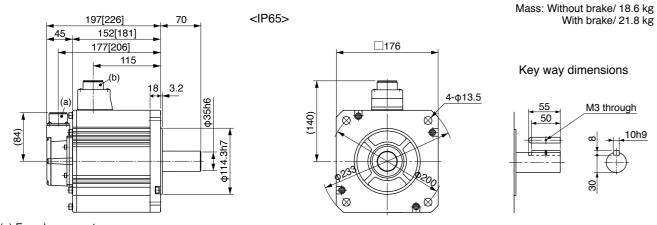
During assembly During operation	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
Mataumaada		IP65		-	_
Motor mode	.	IP67		MDME752G1□	MDME752S1
A 15 15 1	Model	A5 I I, A5	series	ries MGD \diamondsuit TC3B4	
Applicable driver **	No.	A5IIE, A	5E series	_	_
diivei	Fr	ame sym	bol	G-fr	ame
Power suppl	ly capacit	y	(kVA)	1	1
Rated outpu	t		(W)	75	00
Rated torque	е		(N·m)	47	7.8
Momentary I	Max. peal	k torque	(N·m)	119	
Rated currer	nt	(A(rms))	44.0	
Max. current (A(o-p))			16	165	
Regenerative	e brake	Without	option	No limit Note)2	
frequency (time	es/min) Note)1	DV0P4285×3		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without	brake	101	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

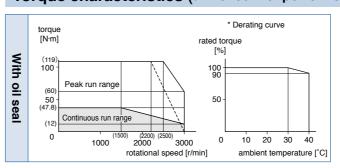
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

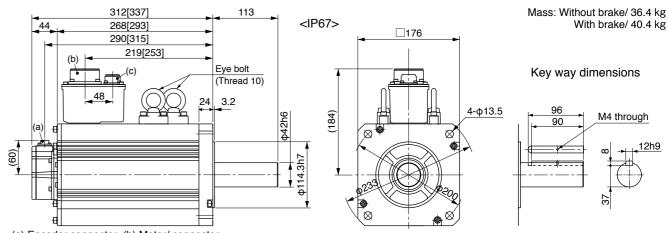
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC2	00 V
		IP65	-	-
Motor model *1		IP67	MDMEC12G1	MDMEC12S1
A	Model	A5II, A5 series	MHD◇	TC3B4
Applicable driver *2	No.	A5IIE, A5E series	-	-
unver	Fr	ame symbol	H-fr	ame
Power supply	capacit	y (kVA)	1	7
Rated output		(W)	110	000
Rated torque		(N·m)	70	0.0
Momentary Ma	ax. peal	k torque (N·m)	175	
Rated current		(A(rms))	54.2	
Max. current		(A(o-p))	203	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM20058	No limit Note)2	
Rated rotation	al spee	d (r/min)	1500	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	212	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	220	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

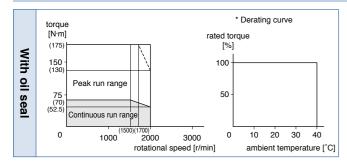
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

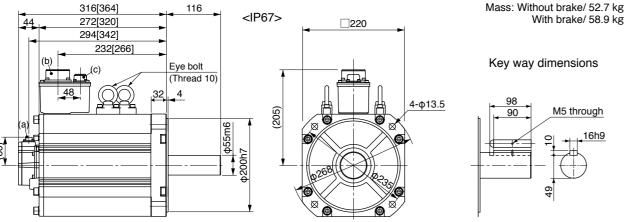
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.47.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V
Materia		IP65		-	-
Motor mode *	.	IP67		MDMEC52G1	MDMEC52S1
Annlinable	Model	Model A5II, A5 series		MHD◇	TC3B4
Applicable driver *	No.	A5IIE, A5E series		_	_
diivoi	Fr	ame sym	bol	H-fr	ame
Power supp	ly capacit	y	(kVA)	2	2
Rated outpu	t		(W)	150	000
Rated torque	е		(N·m)	95	5.5
Momentary	Max. peal	k torque	(N·m)	224	
Rated curre	nt	(.	A(rms))	66.1	
Max. current	t	((A(o-p))	236	
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0PM20058		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	2000	
Moment of in	nertia	Without	brake	302	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		311	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolutio	Resolution per single turn			131072

200 V MDME 15.0 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

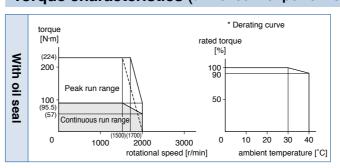
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

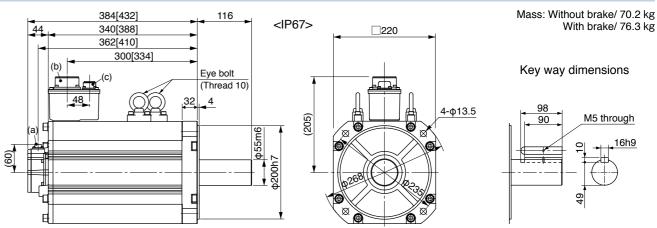
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
docombry	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.47.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC2	00 V
		IP65		-	-
Motor model *1		IP67		MFME152G1□	MFME152S1
A 11 11	Model	A5II, A5 series		MDD<	T5540
Applicable driver *2	No.	A5IIE, A	5E series	MDD ♦ T5540E	_
unver	Fr	ame sym	ıbol	D-fra	ame
Power supply	capacit	у	(kVA)	2.	.3
Rated output			(W)	15	00
Rated torque			(N·m)	7.	16
Momentary M	ax. peal	k torque	(N·m)	21.5	
Rated current		((A(rms))	7.5	
Max. current			(A(o-p))	32	
Regenerative b	orake	Without option		100	
frequency (times/	min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	ıl speed		(r/min)	3000	
Moment of ine	ertia	Withou	t brake	18.2	
of rotor (×10 ⁻⁴	kg·m²)	With I	orake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

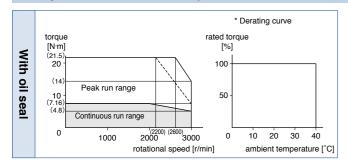
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

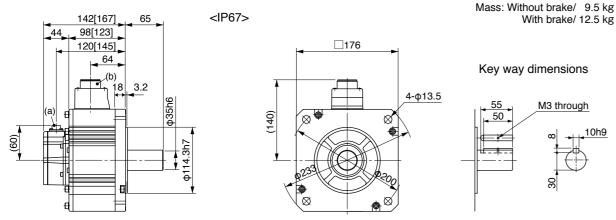
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
Mataumaada		IP65		-	-
Motor mode *	.	IP67		MFME252G1□	MFME252S1
A	Model	A5 I I, A5	series	MED<	T7364
Applicable driver *	No.	A5IIE, A	5E series	MED ⊘T7364E	_
diivci	Fr	ame sym	bol	E-fra	ame
Power supp	ly capacit	y	(kVA)	3	.8
Rated outpu	t		(W)	25	00
Rated torque	е		(N·m)	11	.9
Momentary	Max. peal	k torque	(N·m)	30.4	
Rated curre	nt	(A(rms))	13.4	
Max. current	t	((A(o-p))	5	7
Regenerative	e brake	Without	option	n 75	
frequency (time	es/min) Note)1	DV0P4285		No limi	t Note)2
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without	brake	35.8	
of rotor (×10) ⁻⁴ kg·m²)	With brake		45.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

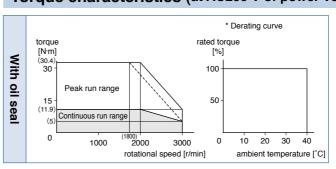
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
Releasing voltage (DC) (V)	2 or more

• Permissible load (For details, refer to P.183)

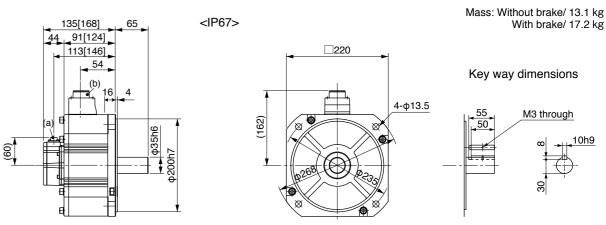
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC200 V	
Mataumaadal	IP65		-	-
Motor model *1		IP67	MFME452G1□	MFME452S1
A constitue de la	Model	A5II, A5 series	MFD ◇TB3A2	
Applicable 42	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
divei	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	6	.8
Rated output		(W)	45	00
Rated torque		(N·m)	21	.5
Momentary Ma	ax. peal	k torque (N·m)	54.9	
Rated current		(A(rms))	24.7	
Max. current		(A(o-p))	10	05
Regenerative b	rake	Without option	67	
frequency (times/	min) Note)1	DV0P4285×2	375	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine		Without brake	63.1	
of rotor (×10 ⁻⁴	kg·m²)	With brake	70.9	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

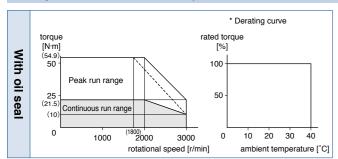
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

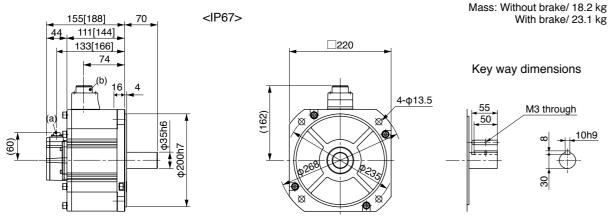
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
		IP65		MGME092GC□	MGME092SC
Motor mode) :1	IP67		MGME092G1□	MGME092S1
	Model	A5II, A5 series		MDD ◇T 5540	
Applicable driver	No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	_
unven	Fı	ame sym	bol	D-fr	ame
Power supp	ly capacit	у	(kVA)	1.	.8
Rated outpo	ut		(W)	90	00
Rated torqu	ie		(N·m)	8.	59
Momentary	Max. pea	k torque	(N·m)	19.3	
Rated curre	ent	(.	A(rms))	7.6	
Max. currer	nt		(A(o-p))	2	4
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim		DV0P	4284	No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of	inertia	Without	brake	6.70	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	7.9	99
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specificatio		fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution		n per sing	le turn	1048576	131072

200 V MGME 0.9 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

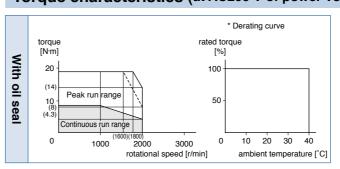
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

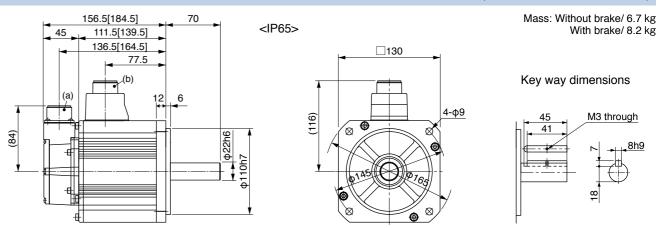
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC200 V	
		MGME202GC□	MGME202SC□	
Motor model *1		IP67	MGME202G1□	MGME202S1□
A marking labels	Model	A5II, A5 series	MFD<	TA390
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_
dilvei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	3	.8
Rated output		(W)	20	00
Rated torque		(N·m)	19).1
Momentary Ma	ax. peal	k torque (N·m)	47.7	
Rated current		(A(rms))	17.0	
Max. current (A(o-p))			60	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	30.3	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	35.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

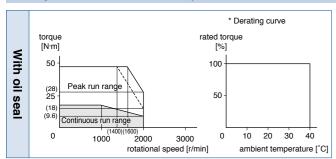
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

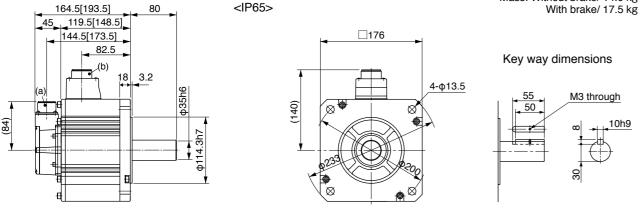
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)

Mass: Without brake/ 14.0 kg



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
Matanaaala		IP65		MGME302GC□	MGME302SC
Motor mode *	•	IP67		MGME302G1□	MGME302S1
A	Model	A5II, A5 series		MFD⇔TB3A2	
Applicable driver *	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
divoi	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	4.	.5
Rated outpu	ıt		(W)	30	00
Rated torque	е		(N·m)	28	3.7
Momentary	Max. peal	k torque	(N·m)	71.7	
Rated curre	nt	(A(rms))	22.6	
Max. current (A(o-p))			8	0	
Regenerative	e brake	Without	option	No limit Note)2	
frequency (time	es/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	nertia	Without brake		48.4	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With b	rake	53.7	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

200 V MGME 3.0 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

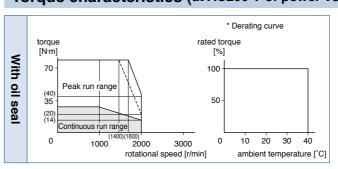
,
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

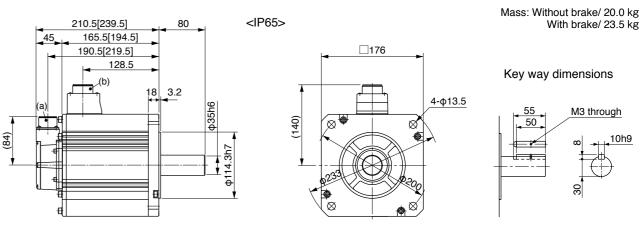
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC200 V	
Motor model	IP65		_	_	
wiotor model *1		IP67	MGME452G1□	MGME452S1	
A 11 11	Model	A5II, A5 series	MFD ⊘TB3A2		
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_	
unver	Fr	ame symbol	F-fr	ame	
Power supply	capacit	y (kVA)	7	.5	
Rated output		(W)	45	00	
Rated torque		(N·m)	43.0		
Momentary Ma	ax. peal	k torque (N·m)	107		
Rated current		(A(rms))	29.7		
Max. current (A(o-p))			110		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/i	min) Note)1	DV0P4285×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	1000		
Max. rotationa	l speed	(r/min)	2000		
Moment of ine	rtia	Without brake	79.1		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	84.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

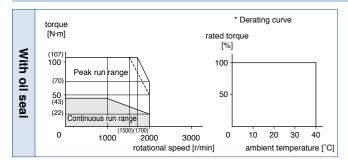
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

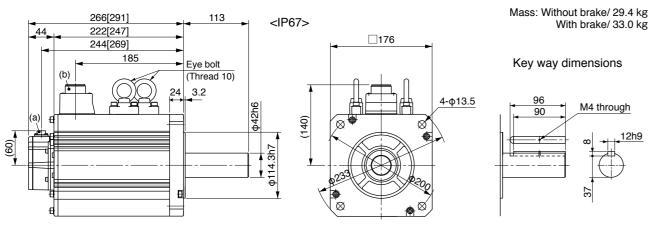
During assembly During operation	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
	Radial load P-direction (N)	1470
	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
Mataumada		IP65		-	-
Motor mode	₹1	IP67		MGME602G1□	MGME602S1
	Model	A5II, A5 series		MGD◇	TC3B4
Applicable driver *	No.	A5IIE, A	5E series	_	-
diivoi	F	rame sym	bol	G-fr	ame
Power supp	ly capacit	У	(kVA)	9	.0
Rated outpo	ut		(W)	60	00
Rated torqu	ie		(N·m)	57	'.3
Momentary	Max. pea	k torque	(N·m)	143	
Rated curre	ent	(A(rms))	38.8	
Max. current (A(o-p))		14	19		
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tim	nes/min) Note)1	DV0P4	285×4	No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotation	nal speed	l	(r/min)	2000	
Moment of	inertia	Without	brake	101	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1048576	131072

200 V MGME 6.0 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

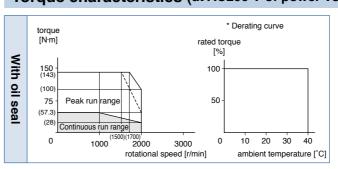
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

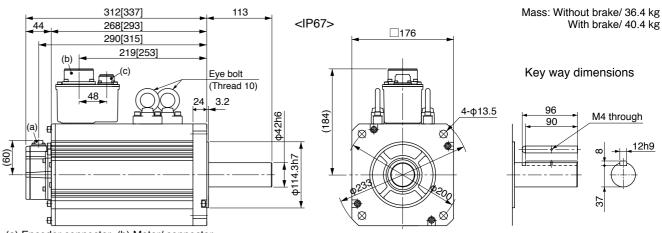
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC2	00 V
Motor model *1		IP65	MHME102GC□	MHME102SC
		IP67	MHME102G1□	MHME102S1
	Model	A5II, A5 series	MDD<	T3530
Applicable driver *2	No.	A5IIE, A5E series	MDD ⊘T3530E	_
dilvei	Fr	ame symbol	D-fra	ame
Power supply	capacit	y (kVA)	1.	.8
Rated output		(W)	10	00
Rated torque		(N·m)	4.77	
Momentary M	lax. peal	k torque (N·m)	14.3	
Rated current	:	(A(rms))	5.7	
Max. current (A(o-p))		24		
Regenerative	brake	Without option	83	
frequency (times	/min) Note)1	DV0P4284	No limit Note)2	
Rated rotation	nal spee	d (r/min)	2000	
Max. rotation	al speed	(r/min)	3000	
Moment of inc	ertia	Without brake	24.7	
of rotor (×10	¹ kg·m²)	With brake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
F	Resolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

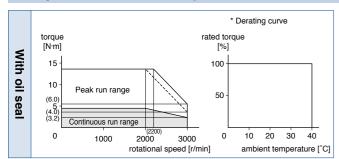
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

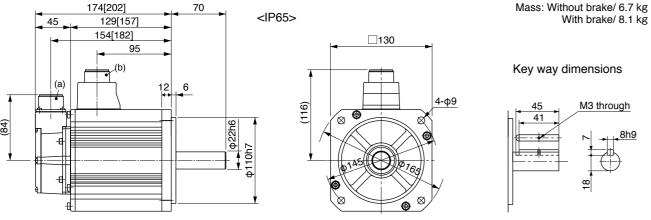
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
Matawasada	-1	IP65		MHME152GC	MHME152SC
Motor mode	ÐI ⊭1	IP67		MHME152G1	MHME152S1
A 1: 1- 1	Mode	A5II, A5	series	MDD<	T5540
Applicable driver	No.	A5IIE, A	5E series	MDD ⊘T5540E	-
unven	F	rame sym	ıbol	D-fr	ame
Power supp	oly capac	ty	(kVA)	2	.3
Rated outpo	ut		(W)	15	00
Rated torqu	ıe		(N·m)	7.	16
Momentary	Max. pea	ak torque	(N·m)	21	.5
Rated curre	ent	(A(rms))	9.4	
Max. currer	nt		(A(o-p))	40	
Regenerativ	e brake	Without	option	22	
frequency (tin	nes/min) Note	DV0P	4284	130	
Rated rotat	ional spe	ed	(r/min)	2000	
Max. rotation	nal spee	d	(r/min)	3000	
Moment of	inertia	Without	t brake	37.1	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	orake	38	3.4
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution pe		on per sind	ile turn	1048576	131072

200 V MHME 1.5 kW [High inertia, Middle capacity]

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

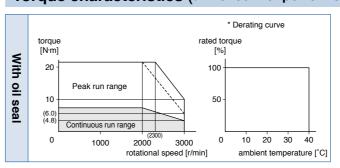
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

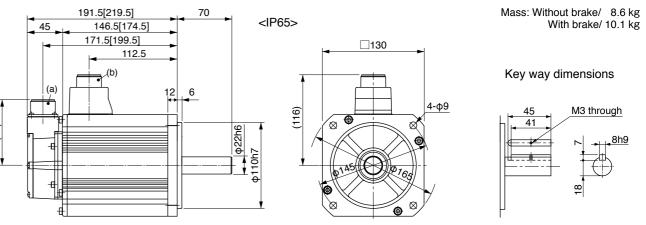
	Radial load P-direction (N)	980
During assemb	Thrust load A-direction (N)	588
documb	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC2	00 V	
Motor model		IP65	MHME202GC□	MHME202SC	
*1		IP67	MHME202G1□	MHME202S1	
A madia a la la	Model	A5II, A5 series	MED<	T7364	
Applicable 42	No.	A5IIE, A5E series	MED ⊘T7364E	_	
unver	Fr	ame symbol	E-fr	ame	
Power supply	capacit	y (kVA)	3	.3	
Rated output		(W)	20	00	
Rated torque		(N·m)	9.	9.55	
Momentary Ma	ax. peal	k torque (N·m)	28.6		
Rated current		(A(rms))	11.1		
Max. current		(A(o-p))	47		
Regenerative b	rake	Without option	45		
frequency (times/r	nin) Note)1	DV0P4285	142		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	57.8		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	59.6		
Recommender ratio of the loa			5 times or less		
Rotary encode	r speci	fications Note)5	20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1048576	131072	

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

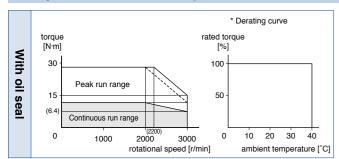
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly During	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

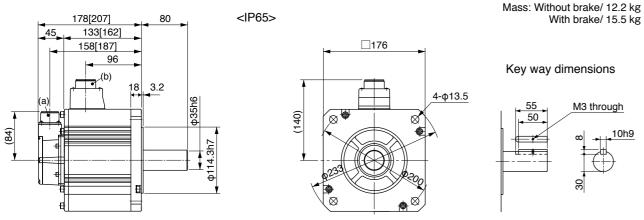
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions>
Reduce the moment of inertia ratio if high speed response operation is required.
Dimensions are subject to change without notice. Contact us or a dealer for the latest information.
Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC2	00 V	
M-4		IP65		MHME302GC□	MHME302SC
Motor mode	ÐI ⊭1	IP67		MHME302G1□	MHME302S1
	Model	A5II, A5	series	MFD◇	TA390
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TA390E	-
unven	Fi	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	4.	.5
Rated outpo	ut		(W)	30	00
Rated torqu	ie		(N·m)	14	.3
Momentary	Max. pea	k torque	(N·m)	43.0	
Rated curre	ent	(A(rms))	16.0	
Max. currer	nt	((A(o-p))	68	
Regenerativ	e brake	Without	t option 19		9
frequency (tin	nes/min) Note)1	DV0P4285×2		142	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	90.5	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	92	2.1
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072

200 V MHME 3.0 kW [High inertia, Middle capacity]

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

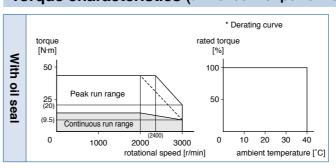
•	
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



3.2

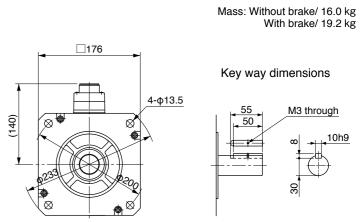
Dimensions

197[226]

177[206]

152[181]

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

<IP65>

			AC2	00 V		
Motor model		IP65		MHME402GC	MHME402SC	
*1		IP67		MHME402G1	MHME402S1	
Amaliaabla	Model	A5II, A5 series		MFD⇔TB3A2		
Applicable 42	No.	A5IIE, A5E series		MFD ⊘TB3A2E	_	
dilvei	Fr	ame sym	nbol	F-fra	ame	
Power supply	capacit	y	(kVA)	6.	.0	
Rated output			(W)	40	00	
Rated torque			(N·m)	19.1		
Momentary Ma	ax. peal	k torque	(N·m)	57.3		
Rated current		((A(rms))	21.0		
Max. current	Max. current (A(o-p))				89	
Regenerative b	rake	Without	option	17		
frequency (times/r	min) Note)1	DV0P4285×2		125		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia	Withou	t brake	112		
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	114		
Recommended moment of inertia ratio of the load and the rotor Note)3				5 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Re	esolutio	n per sing	gle turn	1048576	131072	

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

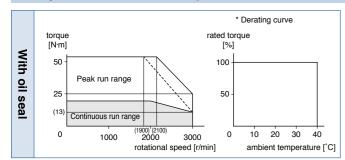
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

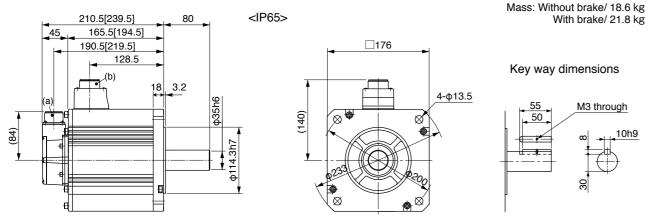
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC2	00 V		
		IP65			MHME502GC□	MHME502SC	
Motor mod	el *1		IP67		MHME502G1□	MHME502S1	
	N	/lodel	A5II, A5 series		MFD ⊘TB3A2		
Applicable driver	*2 N	lo.	A5IIE, A5E series		MFD ⊘TB3A2E	_	
unven		Fr	ame sym	bol	F-fra	ame	
Power sup	ply ca	pacity	/	(kVA)	7.	.5	
Rated outp	ut			(W)	50	00	
Rated torqu	ue			(N·m)	23	3.9	
Momentary	/ Max	. peal	c torque	(N·m)	71.6		
Rated curre	ent		(.	A(rms))	25.9		
Max. curre	nt		((A(o-p))	110		
Regenerativ	ve bra	ıke	Without option		1	10	
frequency (ti			DV0P4285×2		76		
Rated rotal	tional	spee	d	(r/min)	2000		
Max. rotation	onal s	speed		(r/min)	3000		
Moment of	inerti	а	Without	brake	16	162	
of rotor (x1	0 ⁻⁴ kg	g·m²)	With b	rake	16	64	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less				
Rotary encoder specifications Note)		Note)5	20-bit Incremental	17-bit Absolute			
Resolution			n per sina	le turn	1048576	131072	

200 V MHME 5.0 kW [High inertia, Middle capacity]

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

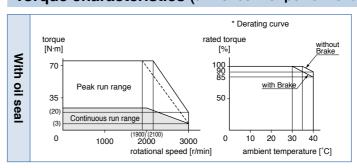
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

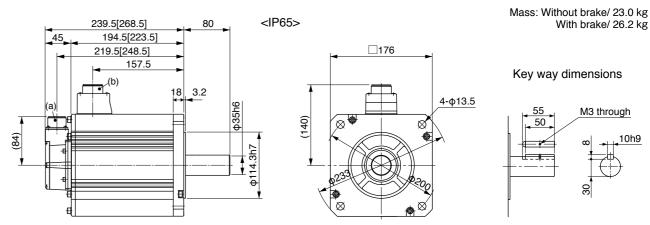
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC2	AC200 V		
		IP65	_	-		
Motor model *1		IP67	MHME752G1□	MHME752S1		
	Model	A5II, A5 series	MGD ♦TC3B 4			
Applicable *2	No.	A5IE, A5E series	_	_		
unvoi	Fr	ame symbol	G-fr	ame		
Power supply	capacit	y (kVA)	1	1		
Rated output		(W)	75	00		
Rated torque		(N·m)	47	47.8		
Momentary Ma	ax. peal	k torque (N·m)	119			
Rated current		(A(rms))	44.0			
Max. current		(A(o-p))	165			
Regenerative b	rake	Without option	No limit Note)2			
frequency (times/	min) Note)1	DV0P4285×4	No limit Note)2			
Rated rotation	al spee	d (r/min)	1500			
Max. rotationa	l speed	(r/min)	3000			
Moment of ine	rtia	Without brake	273			
of rotor (×10 ⁻⁴	kg·m²)	With brake	279			
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less				
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072		

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

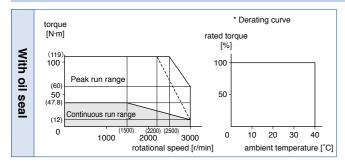
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

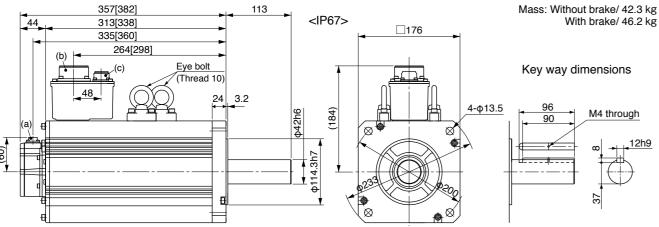
		Radial load P-direction (N)	2058
	During assembly	Thrust load A-direction (N)	980
	assembly	Thrust load B-direction (N)	1176
	During operation	Radial load P-direction (N)	1176
		Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
M - t - · · · · - · - d - l		IP65		MSME084GC□	MSME084SC
Motor model		IP67		MSME084G1□	MSME084S1
A II I. I .	Model	A5II, A5 series		MDD<	T2412
Applicable driver *2	No.	A5IIE, A5E series		MDD \diamondsuit T2412E	_
unver	Fr	ame sym	bol	D-fr	ame
Power suppl	y capacit	y	(kVA)	1.	.6
Rated outpu	t		(W)	75	50
Rated torque	Э		(N·m)	2.:	39
Momentary I	Max. peal	k torque	(N·m)	7.16	
Rated currer	nt	(A(rms))	2.4	
Max. current	t	((A(o-p))	10	
Regenerative	e brake	Without option		No limit Note)2	
frequency (time	es/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of ir	nertia	Without	brake	1.61	
of rotor (×10	⁻⁴ kg·m²)	With brake		1.93	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	1048576	131072

400 V MSME 750 W [Low inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

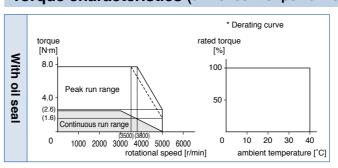
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



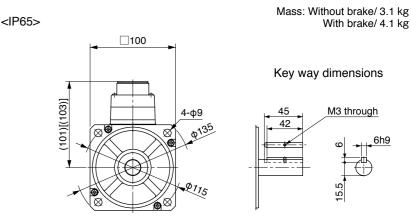
132.5[159.5]

87.5[114.5]

112.5[139.5] 56.5[53.5]

Dimensions

(For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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			AC4	00 V	
Motor model	IP65		MSME104GC	MSME104SC	
*1		IP67		MSME104G1□	MSME104S1
A constitue de la	Model	A5II, A5	series	MDD<	T3420
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T3420E	_
anver	Fr	ame sym	bol	D-fr	ame
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	3.18	
Momentary Ma	ax. peal	k torque	(N·m)	9.55	
Rated current		(A(rms))	3.3	
Max. current		((A(o-p))	14	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	brake	2.03	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

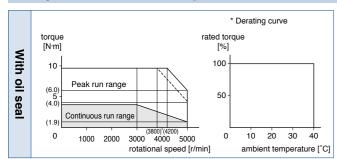
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

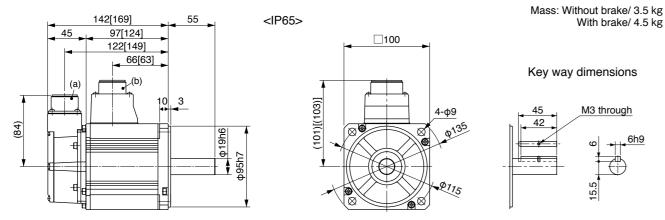
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
M-4		IP65		MSME154GC□	MSME154SC
Motor mode	ÐI ⊭1	IP67		MSME154G1□	MSME154S1
A 1: 1- 1	Model	A5II, A5	series	MDD<	T3420
Applicable driver	No. ⊧2	A5IIE, A5E series		MDD ⊘T3420E	-
unven	F	rame sym	bol	D-fra	ame
Power supp	oly capacit	ty	(kVA)	2.	.3
Rated outpo	ut		(W)	15	00
Rated torqu	ıe		(N·m)	4.	77
Momentary	Max. pea	k torque	(N·m)	14.3	
Rated curre	ent	(A(rms))	4.2	
Max. currer	nt		(A(o-p))	18	
Regenerativ	e brake	Without option		No limi	t Note)2
frequency (tin	nes/min) Note)	DV0PM20048		No limit Note)2	
Rated rotat	ional spee	ed	(r/min)	3000	
Max. rotation	nal speed	i	(r/min)	5000	
Moment of	inertia	Without brake		2.84	
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less			
Rotary enco	oder spec	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single tur			le turn	1048576	131072

400 V MSME 1.5 kW [Low inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

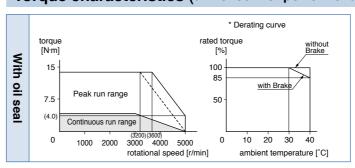
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

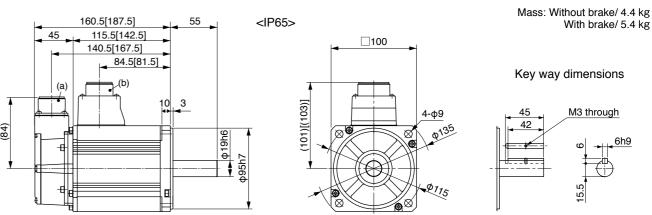
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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			AC4	00 V	
		IP65		MSME204GC□	MSME204SC□
Motor model *1	IP67		MSME204G1□	MSME204S1□	
A !! !- ! -	Model	A5II, A5 series		MED ◇ T4430	
Applicable 42	No.	A5IIE, A5E s	eries	MED ⊘T4430E	-
unver	Fr	ame symbol		E-fra	ame
Power supply	capacit	y (k	VA)	3	.3
Rated output			(W)	20	00
Rated torque		(N	l·m)	6.:	37
Momentary Ma	ax. peal	torque (N	l·m)	19.1	
Rated current		(A(rn	ns))	5.7	
Max. current (A(o-p))			-p))	24	
Regenerative b	rake	Without option		No limit Note)2	
frequency (times/r	nin) Note)1	DV0PM200	49	No limit Note)2	
Rated rotation	al spee	d (r/n	nin)	3000	
Max. rotationa	l speed	(r/n	nin)	5000	
Moment of ine	rtia	Without bra	ke	3.68	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	е	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3			ote)3	15 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Re	esolutio	n per single tu	ırn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

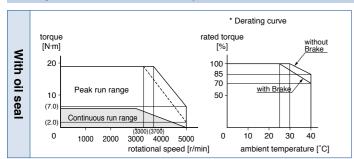
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

.	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
uooo.		Thrust load B-direction (N)	686
Durin		Radial load P-direction (N)	490
opera		Thrust load A, B-direction (N)	196

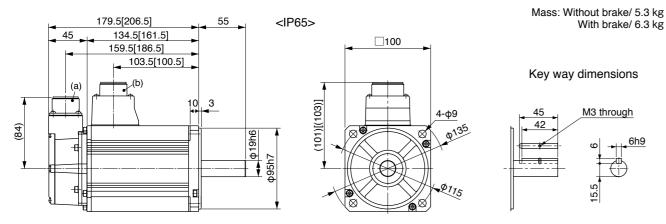
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
Mataumandal		IP65		MSME304GC□	MSME304SC
Motor mode *	•	IP67		MSME304G1□	MSME304S1
A	Model	A5II, A5	series	MFD◇	T5440
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_
unvoi	Fr	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	4.	.5
Rated outpu	ıt		(W)	30	00
Rated torqu	е		(N·m)	9.	55
Momentary	Max. peal	k torque	(N·m)	28.6	
Rated curre	nt	(A(rms))	9.2	
Max. current (A(o-p))		3	9		
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1			No limit Note)2	
Rated rotational speed (r/min)		3000			
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	6.50	
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolution per single turn			1048576	131072

400 V MSME 3.0 kW [Low inertia, Middle capacity]

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

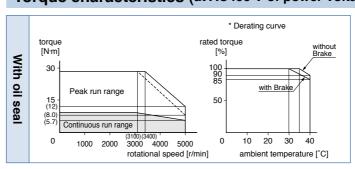
,	,
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

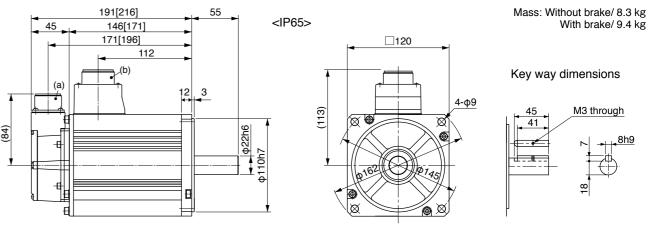
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.137.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AUT	00 V
Motor model	IP65		MSME404GC□	MSME404SC
*1		IP67	MSME404G1□	MSME404S1
A madia a la la	Model	A5II, A5 series	MFD◇	TA464
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
dilvei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6	.8
Rated output		(W)	40	00
Rated torque		(N·m)	12	2.7
Momentary Max. peak torque (N·m)			38.2	
Rated current (A(rms))			9.9	
Max. current (A(o-p))		42		
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/n	nin) Note)1	DV0PM20049×2	No limi	t Note)2
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	12.9	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encode	r speci	fications Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072

Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

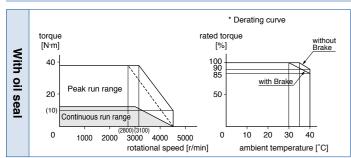
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

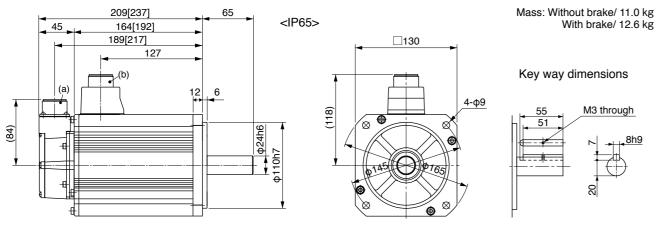
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



(For IP67 motor, refer to P.137.)



(a) Encoder connector

Dimensions

- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
Materianadal		IP65		MSME504GC□	MSME504SC
Motor model		IP67		MSME504G1□	MSME504S1
A L' l- L -	Model	A5 I I, A5	series	MFD ◇TA 464	
Applicable driver *2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unven	Fi	rame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	15	i.9
Momentary M	lax. pea	k torque	(N·m)	47.7	
Rated current	t	(A(rms))	12.0	
Max. current (A(o-p))			51		
Regenerative	brake	Without	option	357	
frequency (times	/min) Note)1	nin) Note)1 DV0PM20049×2		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	4500	
Moment of inc	ertia	Without brake		17.4	
of rotor (×10	4 kg·m²)	With brake		18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
F	Resolutio	n per sing	le turn	1048576	131072

400 V MSME 5.0 kW [Low inertia, Middle capacity]

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

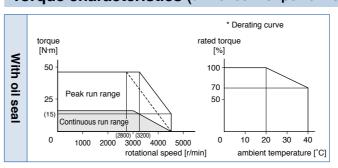
`	•	,
Sta	atic friction torque (N·m)	16.2 or more
En	gaging time (ms)	110 or less
Re	leasing time (ms) Note)4	50 or less
Ex	citing current (DC) (A)	0.90±10 %
Re	leasing voltage (DC) (V)	2 or more
Ex	citing voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

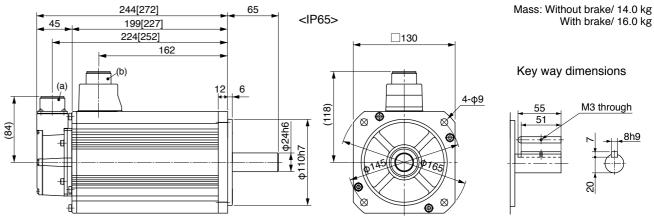
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	00 V	
		IP65	MDME044GC	MDME044SC	
Motor model *1		IP67	MDME044G1	MDME044S1	
Annlinable	Model	A5II, A5 series	MDD<	T2407	
Applicable driver *2	No.	A5IIE, A5E series	MDD ⊘T2407E	_	
diver	Fr	ame symbol	D-fr	ame	
Power supply c	apacit	y (kVA)	0	.9	
Rated output		(W)	40	00	
Rated torque		(N·m)	1.9	1.91	
Momentary Ma	x. peal	k torque (N·m)	5.73		
Rated current		(A(rms))	1.2		
Max. current		(A(o-p))	4.9		
Regenerative br	ake	Without option	No limi	t Note)2	
frequency (times/mi	in) Note)1	DV0PM20048	DPM20048 No limit Note)2		
Rated rotationa	ıl spee	d (r/min)	2000		
Max. rotational	speed	(r/min)	3000		
Moment of iner	tia	Without brake	1.61		
of rotor ($\times 10^{-4}$ k	⟨g·m²)	With brake	1.93		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		fications Note)5	20-bit Incremental	17-bit Absolute	
Re	solutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

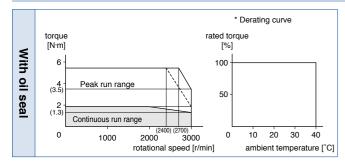
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

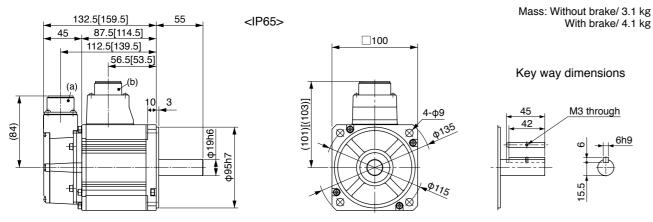
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

					AC4	00 V
N4 - 4			IP65		MDME064GC	MDME064SC
Motor mod	el *1		IP67		MDME064G1□	MDME064S1
	N	/lodel	A5II, A5	series	MDD ◇T240 7	
Applicable driver	*2 N	lo.	A5IIE, A	5E series	MDD ⊘T2407E	-
unver		Fr	ame sym	bol	D-fra	ame
Power sup	ply ca	pacity	/	(kVA)	1.	.2
Rated outp	ut			(W)	60	00
Rated torqu	ue			(N·m)	2.8	86
Momentary	/ Max	. peal	c torque	(N·m)	8.59	
Rated curre	ent		(.	A(rms))	1.5	
Max. curre	nt		((A(o-p))	6.5	
Regenerativ	ve bra	ke	Without	option	No limit Note)2	
frequency (ti	mes/min) Note)1	DV0PM	20048	No limit Note)2	
Rated rotat	tional	spee	d	(r/min)	2000	
Max. rotation	onal s	peed		(r/min)	3000	
Moment of	inerti	а	Without	brake	2.03	
of rotor (×1	0 ⁻⁴ kg	g·m²)	With b	rake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary enc	oder	specif	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolutio		n per sina	le turn	1048576	131072	

400 V MDME 600 W [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

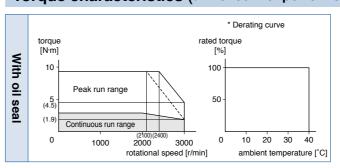
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

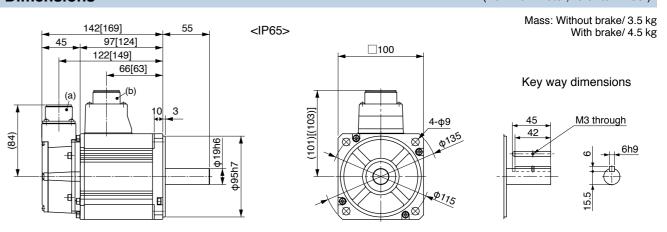
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

			AC4	00 V
Motor model	IP65		MDME104GC	MDME104SC
Motor model *1		IP67	MDME104G1	MDME104S1
Annlinghla	Model	A5II, A5 series	MDD<	T2412
Applicable *2	No.	A5IIE, A5E series	MDD \diamondsuit T2412E	-
unver	Fr	ame symbol	D-fr	ame
Power supply of	capacity	y (kVA)	1	.8
Rated output		(W)	10	00
Rated torque		(N·m)	4.	77
Momentary Ma	x. peal	k torque (N·m)	14.3	
Rated current		(A(rms))	2.8	
Max. current		(A(o-p))	12	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0PM20048 No limit Note)2		t Note)2
Rated rotationa	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of iner	tia	Without brake	4.60	
of rotor ($\times 10^{-4}$ l	kg·m²)	With brake	5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Re	esolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

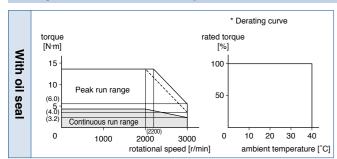
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

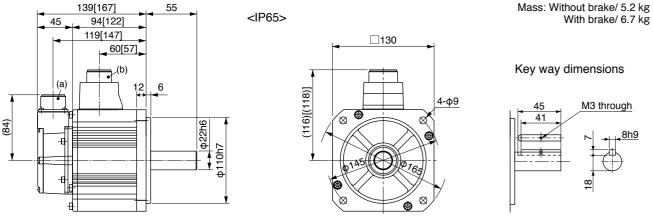
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
M-4	-1	IP65		MDME154GC	MDME154SC
Motor mode	el *1	IP67		MDME154G1□	MDME154S1
	Model	A5Ⅱ, A5	series	MDD<	T3420
Applicable driver	*2 No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	Fi	rame sym	bol	D-fr	ame
Power supp	oly capacit	у	(kVA)	2	.3
Rated outp	ut		(W)	15	00
Rated torqu	ıe		(N·m)	7.	16
Momentary	Max. pea	k torque	(N·m)	21.5	
Rated curre	ent	(A(rms))	4.7	
Max. currer	nt	((A(o-p))	2	0
Regenerativ	/e brake	Without	option	No limit Note)2	
frequency (tir	mes/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	onal speed	l	(r/min)	3000	
Moment of	inertia	Without	brake	6.70	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	7.9	99
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary enc	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolutio		n per sing	le turn	1048576	131072

400 V MDME 1.5 kW [Middle inertia, Middle capacity]

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

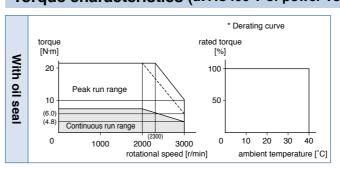
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

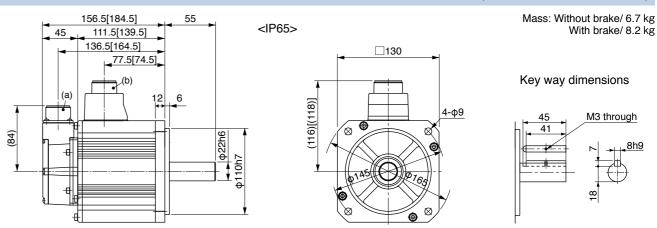
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC400 V		
		IP65		MDME204GC	MDME204SC
Motor model *1		IP67		MDME204G1	MDME204S1
A 12 11	Model	A5II, A5 series		MED<	T4430
Applicable driver *2	No.	A5IIE, A5E series		MED ⊘T4430E	-
unver	Fr	ame syml	bol	E-fra	ame
Power supply	capacit	у	(kVA)	3	.3
Rated output			(W)	20	00
Rated torque			(N·m)	9.55	
Momentary Ma	ax. peal	k torque	(N·m)	28.6	
Rated current (A(rms))			5.9		
Max. current (A(o-p))			25		
Regenerative b	Regenerative brake Without option		option	No limit Note)2	
frequency (times/r	nin) Note)1	DV0PM20049		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	8.72	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

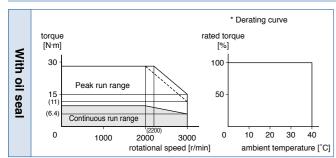
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

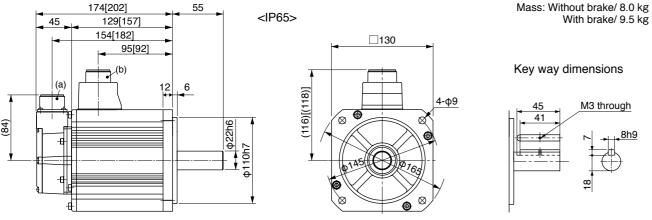
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
M-1		IP65		MDME304GC	MDME304SC
Motor mode *	.	IP67		MDME304G1	MDME304S1
Annlinable	Model	A5II, A5 series		MFD◇	T5440
Applicable driver *	No.	A5IIE, A5E series		MFD \diamondsuit T5440E	-
unvoi	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	4	.5
Rated output	ıt		(W)	30	00
Rated torqu	е		(N·m)	14	.3
Momentary	Max. peal	k torque	(N·m)	43.0	
Rated curre	nt	(A(rms))	8.7	
Max. current (A(o-p))			37		
Regenerative		Without	•	No limit Note)2	
frequency (time	es/min) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	12.9	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

400 V MDME 3.0 kW [Middle inertia, Middle capacity]

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

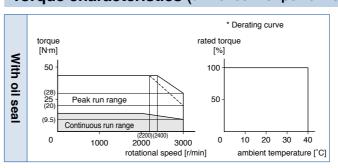
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

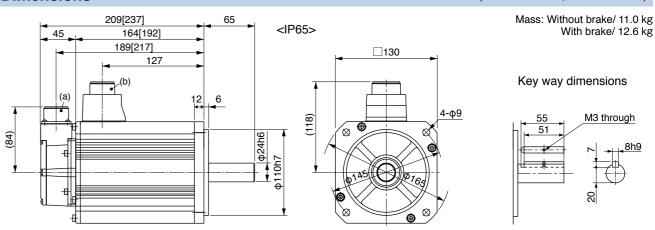
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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A5 Family

			AC4	AC400 V	
IP65		MDME404GC	MDME404SC		
Motor model *1		IP67	MDME404G1□	MDME404S1	
	Model	A5II, A5 series	MFD◇	TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_	
unver	Fr	ame symbol	F-fr	ame	
Power supply	capacit	y (kVA)	6	.8	
Rated output		(W)	40	00	
Rated torque		(N·m)	19	19.1	
Momentary Ma	ax. peal	k torque (N·m)	57.3		
Rated current (A(rms))			10.6		
Max. current (A(o-p))			4	45	
Regenerative brake Without option		No limit Note)2			
frequency (times/r	min) Note)1	DV0PM20049×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	37.6		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	42.9		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

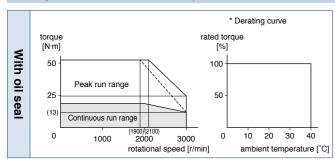
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly During operation	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

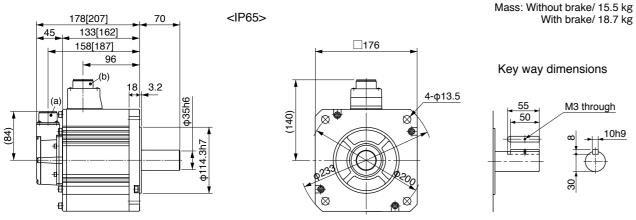
Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)

[Unit: mm]



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

400 V MDME 5.0 kW [Middle inertia, Middle capacity]

Specifications

			AC4	00 V	
Motor mode		IP65		MDME504GC	MDME504SC
wotor mode *	.	IP67		MDME504G1	MDME504S1
A 1: 1- 1 -	Model	A5II, A5 series		MFD ⊘TA46 4	
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unvei	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	7.	.5
Rated outpu	ıt		(W)	50	00
Rated torque	е		(N·m)	23	3.9
Momentary	Max. peal	k torque	(N·m)	71.6	
Rated curre	nt	(.	A(rms))	13.0	
Max. current (A(o-p))			5	5	
Regenerative	e brake	Without	option	120	
frequency (times/min) Note)1		DV0PM20049×2		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	48.0	
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

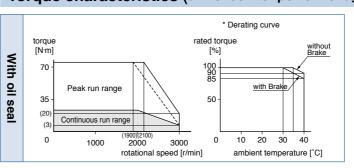
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

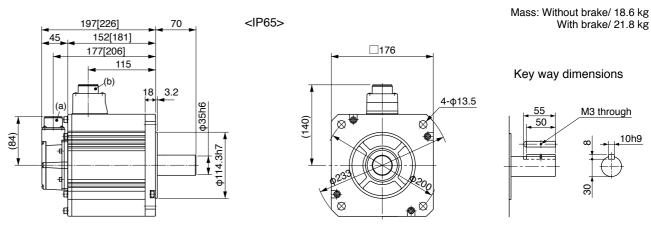
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC400 V	
IP65			-	-	
Motor model *1		IP67		MDME754G1□	MDME754S1
A II I I	Model	Model A5II, A5		MGD◇	TB4A2
Applicable driver *2	No.	A5IIE, A5E series		_	_
unver	Fr	rame symb	ool	G-fr	ame
Power supply	capacit	у	(kVA)	1	1
Rated output			(W)	75	00
Rated torque			(N·m)	47.8	
Momentary Max. peak torque (N·m)			119		
Rated current		(/	A(rms))	22	
Max. current (A(o-p))			83		
Regenerative brake Without option			option	No limit Note)2	
frequency (times/i	min) Note)1	DV0PM20	0049×3	No limit Note)2	
Rated rotation	al spee	d	(r/min)	1500	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	101	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	esolutio	n per singl	e turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

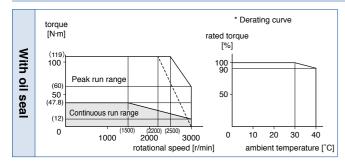
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

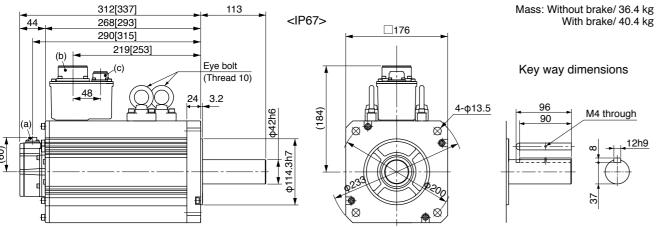
During assembly During	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
N 4 - 4	l-1	IP65		-	-
Motor mod	*1	IP67		MDMEC14G1□	MDMEC14S1
	Model	A5II, A5 series		MHD	TB4A2
Applicable driver	*2 No.	A5IIE, A	5E series	-	-
unven	F	rame sym	bol	H-fr	ame
Power sup	ply capaci	ty	(kVA)	1	7
Rated outp	out		(W)	110	000
Rated torq	ue		(N·m)	7	0
Momentary Max. peak torque (N·m)			175		
Rated current (A(rms))			27.1		
Max. current (A(o-p))			10)1	
Regenerati	ve brake	Without	option	No limit Note)2	
frequency (ti	imes/min) Note)	DV0PN	120059	No limit Note)2	
Rated rota	tional spee	ed	(r/min)	1500	
Max. rotati	onal speed	i	(r/min)	2000	
Moment of	inertia	Without	t brake	212	
of rotor (×1	10 ⁻⁴ kg·m²)	With b	orake	220	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

400 V MDME 11.0 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

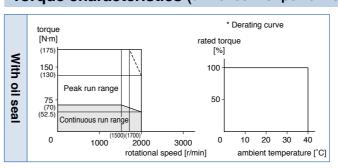
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

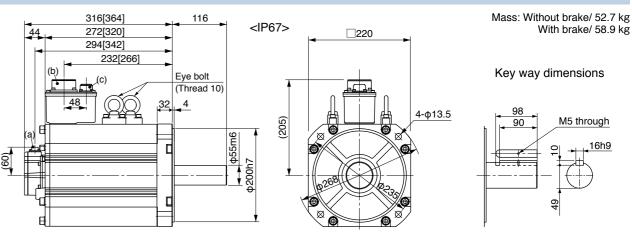
Radial load P-direction (N)	4508
Thrust load A-direction (N)	1470
Thrust load B-direction (N)	1764
Radial load P-direction (N)	2254
Thrust load A, B-direction (N)	686
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	00 V	
		IP65	_	-	
Motor model		IP67	MDMEC54G1	MDMEC54S1	
	Model	A5II, A5 series	MHD ◇TB4A2		
Applicable *2	No.	A5IIE, A5E series	_	-	
unven	Fr	ame symbol	H-fr	ame	
Power supply	capacit	y (kVA)	2	2	
Rated output (W)			150	000	
Rated torque		(N·m)	95.5		
Momentary Max. peak torque (N·m)			224		
Rated current		(A(rms))	33.1		
Max. current		(A(o-p))	11	118	
Regenerative b	orake	Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0PM20059	No limit Note)2		
Rated rotation	al spee	d (r/min)	1500		
Max. rotationa	ıl speed	(r/min)	2000		
Moment of ine	ertia	Without brake	302		
of rotor (×10 ⁻⁴	kg·m²)	With brake	211		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

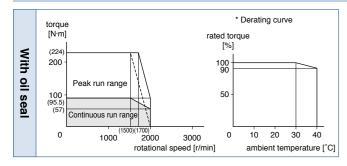
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

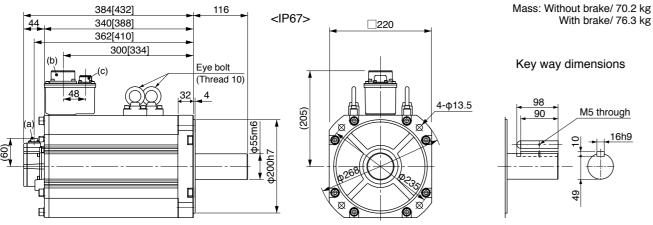
During assembly During	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.47.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
M - t - · · · · · · · · · · · · · · · · · ·		IP65		-	-
Motor mode	ÐI ⊧1	IP67		MFME154G1□	MFME154S1
	Model	A5II, A5	series	MDD<	T3420
Applicable driver	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	Fi	ame sym	bol	D-fra	ame
Power supp	oly capacit	y	(kVA)	2.	.4
Rated outp	ut		(W)	15	00
Rated torqu	ie		(N·m)	7.	16
Momentary	Max. pea	k torque	(N·m)	21.5	
Rated curre	ent	(A(rms))	3.8	
Max. current (A(o-p))			1	6	
Regenerativ	e brake	Without	option	10	00
frequency (tin	nes/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	18.2	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution p		n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

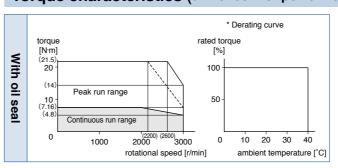
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
3 3 ()()	

• Permissible load (For details, refer to P.183)

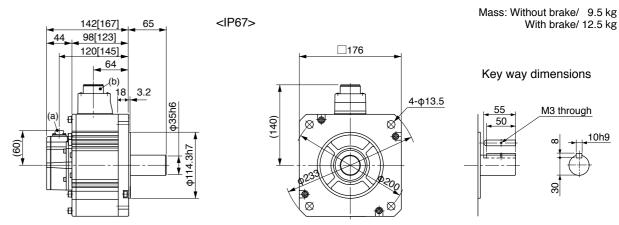
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	00 V
M-4		IP65	-	-
Motor model *1		IP67	MFME254G1□	MFME254S1
	Model	A5II, A5 series	MED<	T4430
Applicable driver *2	No.	A5IIE, A5E series	MED ⊘T4430E	_
divei	Fr	ame symbol	E-fr	ame
Power supply	capacit	y (kVA)	3	.9
Rated output		(W)	25	00
Rated torque		(N·m)	11.9	
Momentary Ma	ax. peal	k torque (N·m)	30.4	
Rated current		(A(rms))	6.7	
Max. current		(A(o-p))	29	
Regenerative b	rake	Without option	75	
frequency (times/r	nin) Note)1	DV0PM20049	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	35.8	
of rotor (×10 ⁻⁴	kg·m²)	With brake	45.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

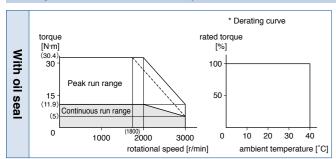
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

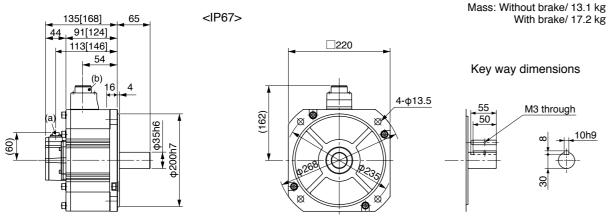
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

400 V MFME 4.5 kW Middle inertia, Middle capacity Flat type

Specifications

			AC4	00 V	
		IP65	-	-	
Motor model		IP67	MFME454G1	MFME454S1	
A 1: 1- 1	Model	A5II, A5 series	MFD◇	TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_	
unver	Fr	rame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	6	.9	
Rated output		(W)	45	00	
Rated torque		(N·m)	21	.5	
Momentary Ma	ax. peal	k torque (N·m)	54.9		
Rated current		(A(rms))	12.4		
Max. current		(A(o-p))	5	53	
Regenerative b	Regenerative brake		67		
frequency (times/r	nin) Note)1	DV0PM20049×2	375		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	63.1		
of rotor (×10 ⁻⁴	kg·m²)	With brake	70.9		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

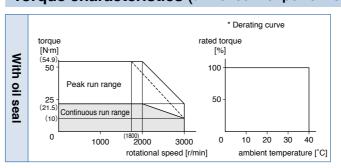
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

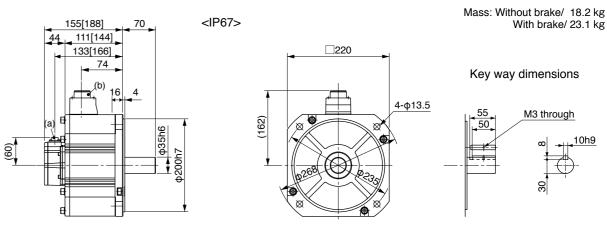
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC4	00 V
Motor model	IP65		MGME094GC□	MGME094SC□	
Wiotor model		IP67		MGME094G1□	MGME094S1□
	Model	A5II, A5	series	MDD ⊘ T3420	
Applicable driver *2	No.	A5IIE, A5	E series	MDD ⊘T3420E	_
unver	Fr	ame syml	bol	D-fr	ame
Power supply	capacit	у	(kVA)	1.	.8
Rated output			(W)	90	00
Rated torque			(N·m)	8.59	
Momentary M	ax. peal	k torque	(N·m)	19.3	
Rated current		(/	A(rms))	3.8	
Max. current (A(o-p))		12			
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without	brake	6.70	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

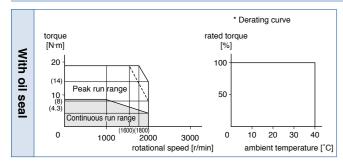
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	686
	Thrust load A, B-direction (N)	196

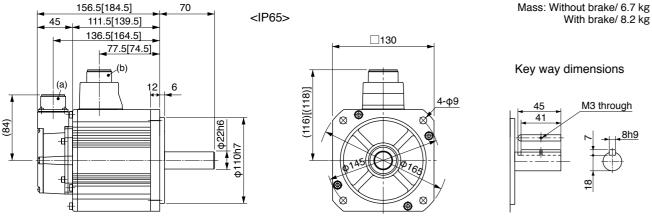
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
		IP65		MGME204GC□	MGME204SC
Motor mod	el *1	IP67		MGME204G1□	MGME204S1
	Mode	Model A5II, A5 series		MFD◇	T5440
Applicable driver	*2 No.	A5IIE, A	5E series	MFD ◇T5440 E	-
unven	F	rame sym	bol	F-fra	ame
Power sup	ply capaci	ty	(kVA)	3	.8
Rated outp	ut		(W)	20	00
Rated torqu	ne		(N·m)	19).1
Momentary	Max. pea	ak torque	(N·m)	47.7	
Rated curre	ent	(A(rms))	8.5	
Max. curre	nt		(A(o-p))	30	
Regenerativ	ve brake	Without	option	No limit Note)2	
frequency (tir		DV0PM2	0049×2	9×2 No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	1000	
Max. rotation	onal spee	d	(r/min)	2000	
Moment of	inertia	Without	brake	30.3	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		35.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications N		Note)5	20-bit Incremental	17-bit Absolute	
Resolution		on per sino	le turn	1048576	131072

400 V MGME 2.0 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

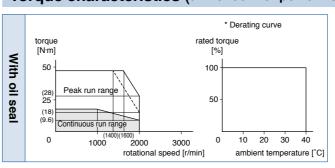
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

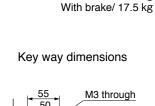
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

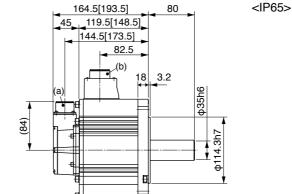


Dimensions

(For IP67 motor, refer to P.139.)



Mass: Without brake/ 14.0 kg



□176

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	00 V	
IP65		MGME304GC□	MGME304SC□		
Motor model *1		IP67		MGME304G1□	MGME304S1
	Model	A5II, A5 s	series	MFD◇	TA464
Applicable driver *2	No.	A5IIE, A5	E series	MFD \diamondsuit TA464E	_
unver	Fı	ame symb	ool	F-fra	ame
Power supply	capacit	y	(kVA)	4	.5
Rated output			(W)	30	00
Rated torque			(N·m)	28.7	
Momentary M	ax. pea	k torque	(N·m)	71.7	
Rated current		(A	A(rms))	11.3	
Max. current		(/	A(o-p))	40	
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0PM20	0049×2	No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without	brake	48.4	
of rotor ($\times 10^{-4}$	kg·m²)	With bi	rake	53.7	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single	e turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

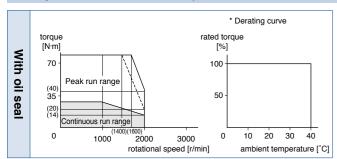
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

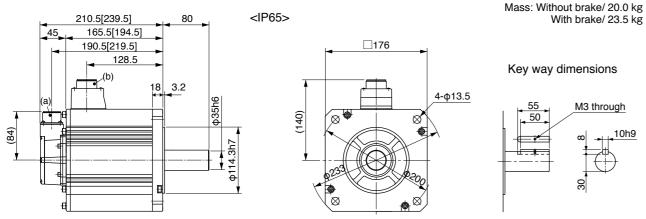
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
M		IP65		-	-
Motor model		IP67		MGME454G1□	MGME454S1
Analiaahla	Model	A5II, A5 series		MFD ◇TA46 4	
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_
diivei	Fr	ame sym	bol	F-fra	ame
Power suppl	y capacit	y	(kVA)	7.	.5
Rated outpu	t		(W)	45	00
Rated torque	Э		(N·m)	43	3.0
Momentary I	Max. peal	k torque	(N·m)	107	
Rated currer	nt	(A(rms))	14.8	
Max. current (A(o-p))			55		
Regenerative		Without	•	No limi	t Note)2
frequency (time	es/min) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1000	
Max. rotation	nal speed		(r/min)	2000	
Moment of in	nertia	Without	brake	79.1	
of rotor (×10	⁻⁴ kg·m²)	With b	rake	84.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

400 V MGME 4.5 kW [Middle inertia, Middle capacity]

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

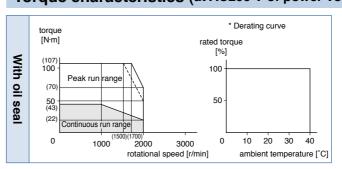
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

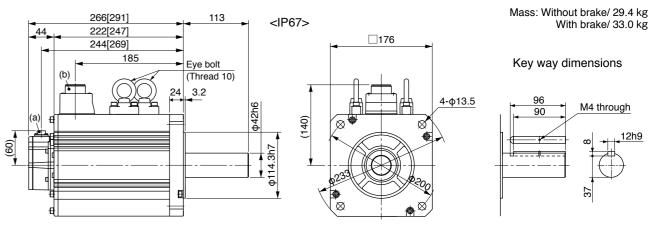
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1470
	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	AC400 V	
Motor model	IP65		_	-	
*1		IP67	MGME604G1□	MGME604S1	
A	Model	A5II, A5 series	MGD ⇔TB4A2		
Applicable driver *2	No.	A5IE, A5E series	-	_	
unver	Fı	ame symbol	G-fr	ame	
Power supply	capacit	y (kVA)	9	.0	
Rated output		(W)	60	00	
Rated torque		(N·m)	57	57.3	
Momentary Ma	ax. pea	k torque (N·m)	143		
Rated current (A(rms))			19.4		
Max. current (A(o-p))			74		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0PM20049×3	No limit Note)2		
Rated rotation	al spee	d (r/min)	1000		
Max. rotationa	l speed	(r/min)	2000		
Moment of ine	rtia	Without brake	101		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	107		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

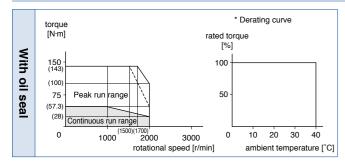
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

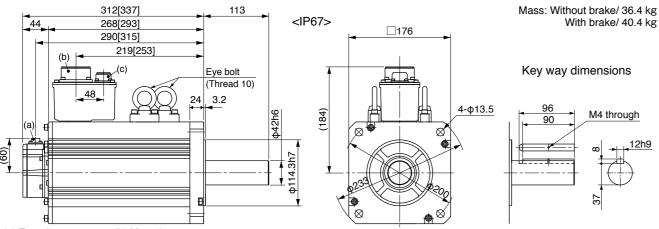
During assembly During operation	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
	Radial load P-direction (N)	1764
	Thrust load A, B-direction (N)	588

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
M-4		IP65		MHME104GC	MHME104SC
Motor mode *	.	IP67		MHME104G1□	MHME104S1
A I' l. l .	Model	A5II, A5 series		MDD<	T2412
Applicable driver *	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-
unver	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.8
Rated outpu	it		(W)	10	00
Rated torque	е		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated curre	nt	(A(rms))	2.9	
Max. current	t	((A(o-p))	1	2
Regenerative	e brake	Without	option	83	
frequency (time	es/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without	brake	24.7	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn		1048576	131072		

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

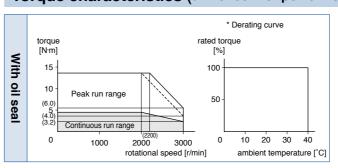
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

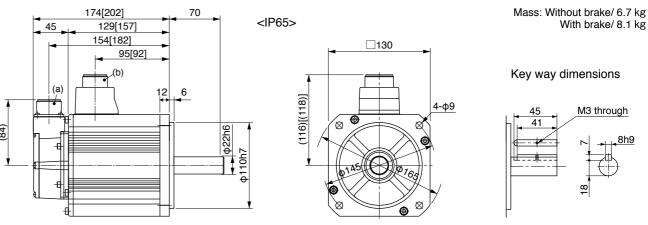
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
doodinbiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC400 V		
		IP65	MHME154GC	MHME154SC	
Motor model *1		IP67	MHME154G1	MHME154S1	
A !! !- ! -	Model	A5II, A5 series	MDD<	T3420	
Applicable *2	No.	A5IIE, A5E series	MDD ⊘T3420E	_	
unver	Fr	ame symbol	D-fr	ame	
Power supply of	capacit	y (kVA)	2	.3	
Rated output		(W)	15	00	
Rated torque		(N·m)	7.	16	
Momentary Ma	x. peal	k torque (N·m)	21.5		
Rated current		(A(rms))	4.7		
Max. current		(A(o-p))	20		
Regenerative br	rake	Without option	22		
frequency (times/m		DV0PM20048	130		
Rated rotationa	al spee	d (r/min)	2000		
Max. rotational	speed	(r/min)	3000		
Moment of iner	tia	Without brake	37.1		
of rotor ($\times 10^{-4}$ k	kg·m²)	With brake	38.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		fications Note)5	20-bit Incremental	17-bit Absolute	
Re	solutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

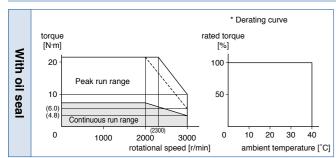
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

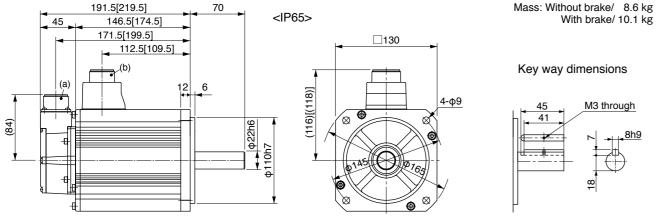
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC400 V		
Matauaraada		IP65		MHME204GC	MHME204SC
Motor mode *		IP67		MHME204G1□	MHME204S1
A 15 15 1	Model	A5II, A5 series		MED \ T4430	
Applicable driver **	No.	A5IIE, A5E series		MED ⊘T4430E	_
divei	Fr	ame sym	bol	E-fra	ame
Power suppl	y capacit	y	(kVA)	3	.3
Rated outpu	t		(W)	20	00
Rated torque	Э		(N·m)	9.	55
Momentary	Max. peal	k torque	(N·m)	28.6	
Rated currer	nt	(A(rms))	5.5	
Max. current	t	((A(o-p))	24	
Regenerative	e brake	Without option		45	
frequency (time	es/min) Note)1	DV0PM20048		142	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without brake		57.8	
of rotor (×10	⁻⁴ kg·m²)	With brake		59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less	
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolutio	n per sing	le turn	1048576	131072

400 V MHME 2.0 kW [High inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

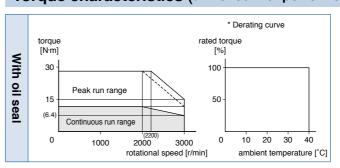
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

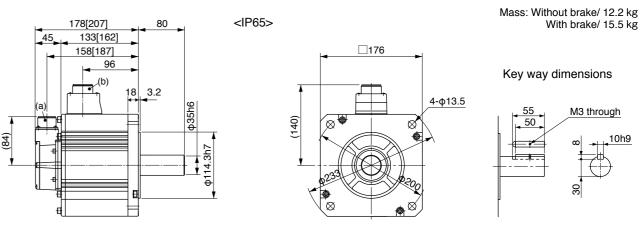
	Radial load P-direction (N)	1666
During assemb	Thrust load A-direction (N)	784
docume	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	n Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

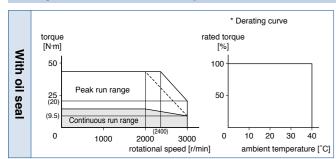
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

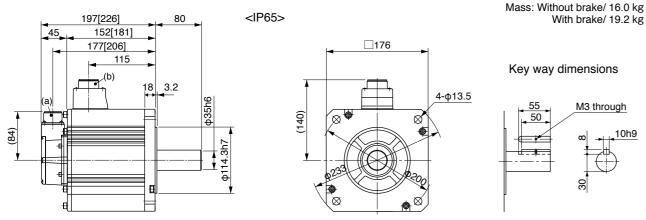
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC400 V		
		IP65			MHME404GC	MHME404SC
Motor mod	el *1		IP67		MHME404G1	MHME404S1
	Мс	odel	A5II, A5 series		MFD \diamondsuit TA464	
Applicable driver	*2 No).	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unvei		Fr	ame sym	bol	F-fra	ame
Power sup	ply cap	acit	y	(kVA)	6	.8
Rated outp	ut			(W)	40	00
Rated torqu	ue			(N·m)	19).1
Momentary	/ Max.	peal	k torque	(N·m)	57.3	
Rated curre	ent		(.	A(rms))	10.5	
Max. curre	nt		((A(o-p))	4	5
Regenerativ	ve brak	е	Without option		17	
frequency (tir			DV0PM20049×2		125	
Rated rotat	tional s	pee	d	(r/min)	2000	
Max. rotation	onal sp	eed		(r/min)	3000	
Moment of	inertia		Without brake		112	
of rotor (x1	0 ⁻⁴ kg·	m²)	With brake		114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary enc	oder s	pecit	fications	Note)5	20-bit Incremental	17-bit Absolute
	Reso	lutio	n per sing	le turn	1048576	131072

400 V MHME 4.0 kW [High inertia, Middle capacity]

Brake specifications (For details, refer to P.183)
 This brake will be released when it is energized. Do not use this for braking the motor in motion.

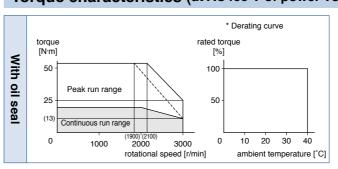
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

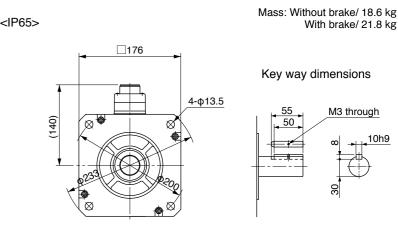
3.2

210.5[239.5]

190.5[219.5]

165.5[194.5]

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	00 V	
Motor model	IP65			MHME504GC	MHME504SC
*1		IP67		MHME504G1□	MHME504S1
	Model	odel A5II, A5 serie		MFD<	TA464
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_
divei	Fr	ame symbol	I	F-fra	ame
Power supply	capacit	y (kVA)	7.	.5
Rated output			(W)	50	00
Rated torque		(N·m)	23.9	
Momentary M	ax. peal	k torque (N·m)	71.6	
Rated current		(A(r	ms))	13.0	
Max. current		(A(o-p))	55	
Regenerative b	rake	Without op	tion	10	
frequency (times/	min) Note)1	DV0PM200	49×2	76	
Rated rotation	al spee	d (r	/min)	2000	
Max. rotationa	l speed	(r/	/min)	3000	
Moment of ine	rtia	Without br	ake	162	
of rotor (×10 ⁻⁴	kg·m²)	With bral	ke	164	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single t	turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

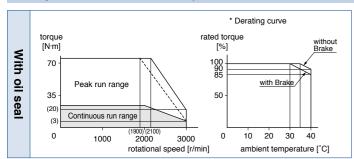
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

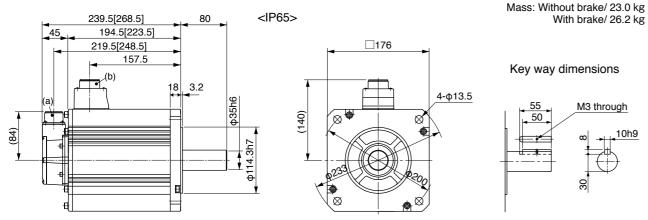
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

400 V MHME 7.5 kW [High inertia, Middle capacity]

			AC4	00 V		
Motor model		IP65		-	-	
*1		IP67		MHME754G1	MHME754S1	
Amaliaahla	Model	A5II, A5	series	MGD♦	TB4A2	
Applicable driver *2	No.	A5IIE, A5E series		-	-	
unver	Fi	rame symb	ool	G-fr	ame	
Power supply	y capacit	у	(kVA)	9.	.0	
Rated output			(W)	75	00	
Rated torque	!		(N·m)	47	'.8	
Momentary N	Лах. pea	k torque	(N·m)	119		
Rated curren	t	(A	A(rms))	22.0		
Max. current (A(o-p))			8	83		
Regenerative	brake	Without	option	No limi	t Note)2	
frequency (time	s/min) Note)1	DV0PM20	0049×3	No limit Note)2		
Rated rotatio	nal spee	d	(r/min)	1500		
Max. rotation	al speed		(r/min)	3000		
Moment of in	ertia	Without	brake	273		
of rotor (×10	⁴ kg·m²)	With b	rake	279		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

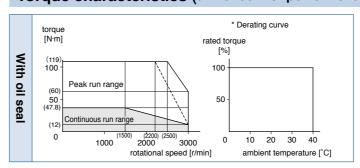
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

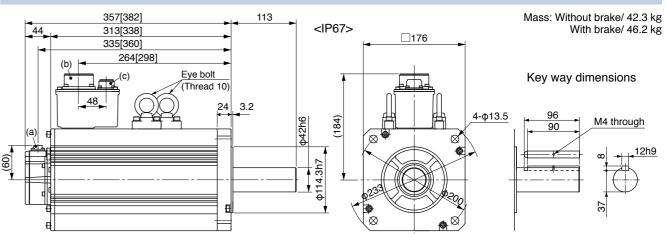
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

243[271]

199[227]

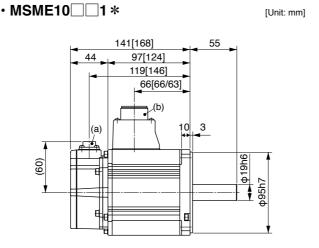
221[249]

162

A5 Family

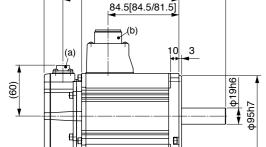
• MSME084 1 * [Unit: mm] 131.5[158.5] 87.5[114.5] 109.5[136.5] 56.5[53.5]

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

MSME15□□1* [Unit: mm] 159.5[186.5] 115.5[142.5] 137.5[164.5] 84.5[84.5/81.5]

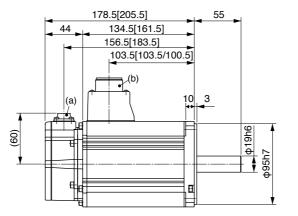


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

MSME20□□1*

IP67 motor (MSME 200 V/ 400 V type)

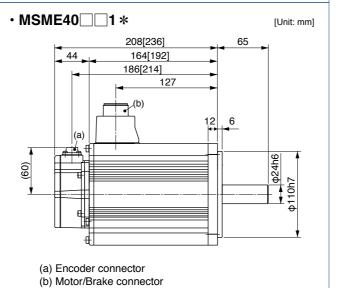
[Unit: mm]



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

MSME30□□1* [Unit: mm] 190[215] 44 146[171] 168[193]

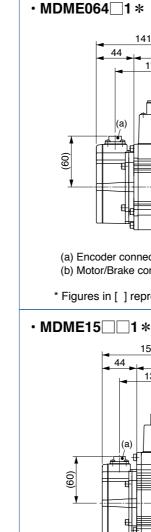
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



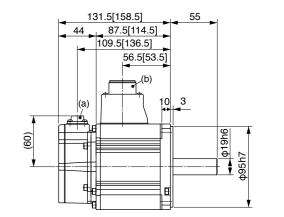
* Figures in [] represent the dimensions with brake.

137

* For motor specifications, refer to IP65 motor page.



• MDME044 □ 1 * [Unit: mm]



(a) Encoder connector

12

[Unit: mm]

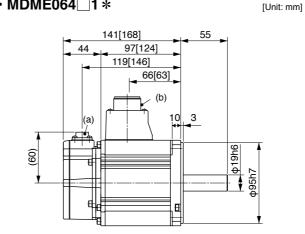
65

(b) Motor/Brake connector

MSME50□□1*

44

- * Figures in [] represent the dimensions with brake.
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (a) Encoder connector
- (b) Motor/Brake connector

44

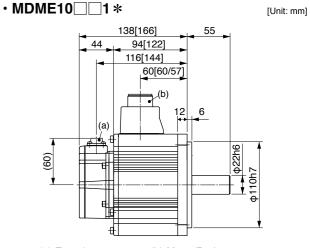
* Figures in [] represent the dimensions with brake.

155.5[183.5]

111.5[139.5]

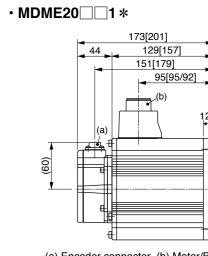
133.5[161.5]

77.5[77.5/74.5]



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

[Unit: mm]



(a) Encoder connector (b) Motor/Brake connector

138

[Unit: mm]

- * Figures in [] represent the dimensions with brake. If you find two figures in [],left figure is for 200 V and right figure is for 400 V.
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

^{*} For motor specifications, refer to IP65 motor page.

Dimensions

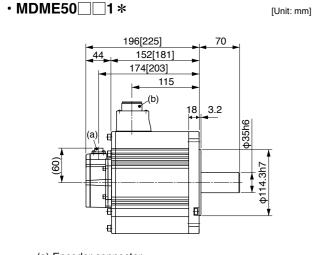
MDME40□□1*

• MDME30 ☐ 1 * [Unit: mm] 208[236] . 44 164[192] 186[214] 127

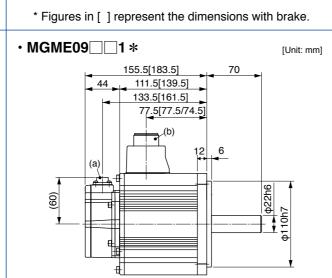
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

177[206] 133[162] 155[184] (a) Encoder connector (b) Motor/Brake connector

[Unit: mm]



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.
- MGME20□□1 * [Unit: mm] 163.5[192.5] 44 119.5[148.5] 141.5[170.5] 82.5
 - (a) Encoder connector
 - (b) Motor/Brake connector
 - * Figures in [] represent the dimensions with brake.

MGME30□□1 * [Unit: mm] 209.5[238.5] 165.5[194.5] 187.5[216.5] 128.5 (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake.

• MHME10□□1 * 00 (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V. MHME20□□1*

- (a) Encoder connector
 - (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

IP67 motor (MHME 200 V/ 400 V type)

173[201]

177[206]

133[162]

96

3.2

155[184]

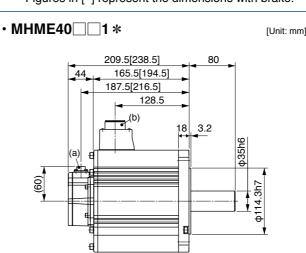
129[157]

95[95/92]

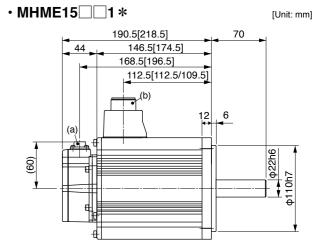
151[179]

[Unit: mm]

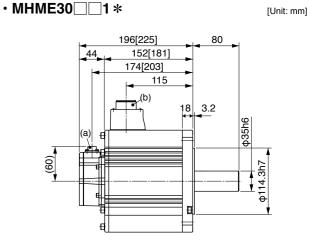
[Unit: mm]



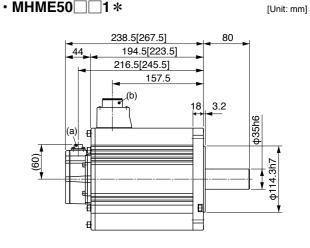
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

* For motor specifications, refer to IP65 motor page.

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^{*} For motor specifications, refer to IP65 motor page

Model Designation/ The Combination of the Driver and the Motor Motors with Gear Reducer

Motor rated output

02

04

08

2

Pulse counts

20-bit

17-bit

Symbol Specifications

Voltage specifications

Symbol Rated output

100 W

200 W

400 W

750 W

100 V

200 V

Resolution 1048576

131072

Motor Types with Gear Reducer

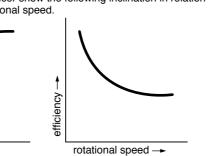


Type and Specifications

Reduction		Motor output (W)			Type of
ratio	100	200	400	750	reducer
1/5	•	•	•	•	
1/9	•	•	•	•	For high
1/15	•	•	•	•	precision
1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.

Efficiency of the gear reducer show the following inclination in relation
to output torque and rotational speed.



Specifications of Motor with Gear Reducer

Items		Specifications
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer
	Composition of gear	Planetary gear
	Gear efficiency	65 % to 85 %
Cook words ook	Lubrication	Grease lubrication
Gear reducer	Rotational direction at output shaft	Same direction as the motor output shaft
	Mounting method	Flange mounting
	Permissible moment of inertia of the load (conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor
	Protective structure	IP44 (at gear reducer)
	Ambient temperature	0 °C to 40 °C (free from condensation)
Consideration and	Ambient humidity	85 %RH (free from condensation) or less
Environment	Vibration resistance	49 m/s² or less (at motor frame)
	Impact resistance	98 m/s² or less

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output torque -

Motor types with gear reducer

,, ,						
Symbol	Reduction Motor output (W)			V)	Type of	
Syllibol	ratio	100	200	400	750	reducer
1N	1/5	•	•	•	•	
2N	1/9	•	•	•	•	For high
3N	1/15	•	•	•	•	precision
4N	1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.

Motor structure

Cumbal	Shaft Holding		g brake
Symbol	Key way	without	with
3	•	•	
4	•		•

Rotary encoder specifications

Format

Incremental

Absolute

Model Designation

MSMD

MSME

MHMD

Symbol

M S M

Type

Low inertia

100 W to 750 W

Low inertia

100 W to 750 W

High inertia

200 W to 750 W

The Combination of the Driver and the Motor with gear reducer

	100	V	200 V	
Motor output	Part No. of motor	Single phase, 100 V	Part No. of motor	Single/3-phase, 200 V
•	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver
100 W	MSME011□□□N	MADHT1107 MADKT1107	MSME012□□N	MADHT1505 MADKT1505
100 W	MSMD011□□□N	MADHT1107E MADKT1107E	MSMD012□□□N	MADHT1505E MADKT1505E
200 W	MSME021□□□N MSMD021□□□N	MBDHT2110 MBDKT2110	MSME022 N MSMD022 N MHMD022 N	MADHT1507 MADKT1507
200 W	MHMD021 \ \ \ \ \ \ \ \ \ \ \ \ \	MBDHT2110E MBDKT2110E		MADHT1507E MADKT1507E
400 W	MSME041 □ □ □ N MSMD041 □ □ □ N	MCDHT3120 MCDKT3120	MSME042□□□N MSMD042□□□N	MBDHT2510 MBDKT2510
400 W	MHMD041 \ \ \ \ \ \ \ \ \ \ \ \ \	MCDHT3120E MCDKT3120E	MHMD042 N	MBDHT2510E MBDKT2510E
750 W	_	_	MSME082□□□N MSMD082□□□N	MCDHT3520 MCDKT3520
750 44			MHMD082	MCDHT3520E MCDKT3520E

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Wire

5 7

^{*} S: can be used in incremental.

^{*} Motor specifications enter to $\square\square\square$ of the motor model number. Refer to "Model designation".

Torque Characteristics of Motor

Table of Motor Specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque	(motor + conv to moto		Ma w/o brake		Permissible radial load	Permissible thrust load
		(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J(×10 ⁻⁴		(k		(N)	(N)
	MSME01	(11)	1/5	75	600	1200	1.18	3.72	0.091	0.094	1.0	1.2	490	245
	MSME01 2N		1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
	MSME01 3N	100	1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
	MSME01 4N		1/25	80	120	240	6.27	19.0	0.0885	0.0915	2.15	2.35	1670	833
	MSME02 IN		1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
3	MSME02 2N		1/9	132	333	666	3.72	11.3	0.408	0.428	2.48	2.9	1180	588
MSME	MSME02 3N	200	1/15	132	200	400	6.27	18.8	0.44	0.46	2.88	3.3	1470	735
	MSME02 4N		1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
.OW	MSME04		1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia	MSME04 🗆 🗆 2N	,	1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
tia	MSME04	400	1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
	MSME04 □□□ 4N		1/25	332	120	240	26.4	79.2	0.56	0.58	4.4	4.8	2060	1030
	MSME082 □□ 1N		1/5	672	600	1200	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSME082 □□ 2N		1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 3N	750	1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082 □□ 4N		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01 🗆 🗆 1N		1/5	75	600	1000	1.18	3.72	0.091	0.094	1.02	1.23	490	245
	MSMD01 □□□ 2N	400	1/9	80	333	555	2.25	6.86	0.0853	0.0883	1.02	1.23	588	294
	MSMD01 🗆 🗆 3N	100	1/15	80	200	333	3.72	11.4	0.086	0.089	1.17	1.38	784	392
	MSMD01		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
	MSMD02 UUU 1N		1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
3	MSMD02 🗆 🗆 2N	000	1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02 🗆 🗆 3N	200	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
	MSMD02		1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low inerti	MSMD04 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
iner	MSMD04 □□□ 2N	400	1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
tia	MSMD04 □□□ 3N	400	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.56	0.58	4.4	4.9	2060	1030
	MSMD082 □□ 1N		1/5	672	600	900	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSMD082 □□ 3N	730	1/15	635	200	300	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSMD082 □□ 4N		1/25	635	120	180	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02 🗆 🗆 🗆 1N		1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02 🗆 🗆 2N	200	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02 3N	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
₹	MHMD02 🗆 🗆 4N		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04 🗆 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
	MHMD04 🗆 🗆 2N	400	1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
gh i	MHMD04 🗆 🗆 3N	700	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
High inertia	MHMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
tia	MHMD082 □□ 1N		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
	MHMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
	MHMD082 □□ 3N	130	1/15	635	200	300	30.4	91.2	2.21	2.31	6.3	7.1	1760	882
	MHMD082 □□ 4N		1/25	635	120	180	50.7	152	2.16	2.26	6.3	7.1	2650	1320

Table of Motor Specifications

MSM	E series	(100 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
	100 W	MSME011 1N torque [N-m] 4.0 Peak rur range Continuous run tange 500 10000 rotational speed [//min]	MSME011 2N torque [N·m] 8.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME011 3N torque [N.m] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [/rmin]	MSME011 4N torque [N-m] 20 Peak run range 10 Continuous run range 0 100 200 rotational speed [r/min]
100 V	200 W	MSME021 1N torque [N-m] 8.0 Peak rur range 4.0 Continuous run range 500 1000 rotational speed [r/min]	MSME0212N torque [N-m] 16.0 Peak run range Continuous run range 400 800 rotational speed [r/min]	MSME021 3N torque [N-m] 20 Peak run range 0 200 400 rotational speed [r/min]	MSME021 4N torque [N·m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	400 W	MSME041 1N torque [N-m] 20 Peak rur range Continuous run range 0 500 1000 rotational speed [r/min]	MSME041 2N torque [N·m] 40 Peak run range Continuous run range 800 rotational speed [r/min]	MSME041 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME041 4N torque [N-m] 80 Peak run range 40 Continuous run tange 0 100 200 rotational speed [r/min]
	100 W	MSME012 1N torque [N-m] 4.0 Peak rur range 2.0 Continuous run range 0 500 10000 rotational speed [//min]	MSME012 2N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 400 800 rotational speed [r/min]	MSME012 3N torque [N·m] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [/rmin]	MSME012 4N torque [N-m] 20 Peak run range 10 Continuous tun range 0 100 200 rotational speed [r/min]
	200 W	MSME022 1N torque [N·m] 8.0 Peak rur range 4.0 Continuous run tange 0 500 10000 rotational speed [r/min]	MSME022 2N torque [N·m] 16.0 Peak run range Continuous run range 0 400 rotational speed [r/min]	MSME022 3N torque [N·m] 20 Peak run range 0 200 400 rotational speed [r/min]	MSME022 4N torque [N·m] Peak run range Continuous tun range 0 100 200 rotational speed [r/min]
200 V	400 W	MSME042 1N torque [N-m] 20 Peak rur range Continuous run tange 0 500 1000 rotational speed [r/min]	MSME042 2N torque [N·m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME042 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME042 4N torque [N·m] 80 Peak rur range 40 Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MSME082 1N torque [N-m] 40 Peak rur range Continuous run range 0 500 1000 rotational speed [r/min]	MSME082 2N torque [N-m] 80 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME082 3N torque [N-m] 120 Peak run lange Continuous run range 0 200 400 rotational speed [r/min]	MSME082 4N torque [N-m] 160 Peak run range 0 100 200 rotational speed [r/min]

Dotted line represents the torque at 10 % less supply voltage.

^{*} Motor specifications enter to \square of the motor model number. Refer to "Model designation".

MSMD series (100 W to 750 W) Supply voltage to driver Motor output 1/5 1/9 1/15 1/25 MSMD011□□4N MSMD011□□1N MSMD011□□2N MSMD011□□3N 100 W $MSMD021 \square \square 1N$ MSMD021 2N MSMD021□□3N MSMD021□□4N 100 V 200 W MSMD041□□1N MSMD041□□2N MSMD041□□3N MSMD041 □ □ 4N 400 W MSMD012 1N MSMD012 2N MSMD012 3N MSMD012 4N 100 W MSMD022□□3N MSMD022 1N MSMD022 2N MSMD022 4N 200 W 200 V MSMD042□□2N MSMD042 3N MSMD042□□1N MSMD042 4N 400 W $MSMD082 \square \square 3N$ MSMD082□□4N MSMD082□□2N MSMD082□□1N 750 W

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Dotted line represents	the torque at 10 %	less supply voltage.

MHM	D series	(200 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
400 1/	200 W	MHMD021 1N torque [N·m] 8.0 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N-m] 16.0 Peak run lange 0 400 800 rotational speed [r/min]	MHMD021 3N torque [N-m] 20 Peak run range Contiruous run range 0 200 400 rotational speed [r/min]	MHMD021
100 V	400 W	MHMD041 1N torque [N-m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD041 2N torque [N·m] 40 Peak run range Continudus run tange 0 400 800 rotational speed [r/min]	MHMD041 3N torque [N-m] 60 Peak run range Contiruous run range 200 400 rotational speed [r/min]	MHMD041 4N torque [N-m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	200 W	MHMD022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	torque [N·m] 16.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MHMD022 3N torque [N-m] 20 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD022 4N torque [N·m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MHMD042 1N torque [N·m] 20 Peak run range 0 500 1000 rotational speed [r/min]	MHMD042 2N torque [N-m] 40 Peak run range Continuous run range 0 800 rotational speed [r/min]	MHMD042 3N torque [N·m] 60 Peak run range Continuous run range 200 200 400 rotational speed [r/min]	MHMD042 4N torque [N·m] Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MHMD082 1N torque [N·m] 40 Peak run range 1 Continuous run range 0 500 1000	MHMD082 2N torque [N-m] 80 Peak virun range virun rang	MHMD082 3N torque [N·m] 120 Peak run range Continuous Tun range 0 200 400	MHMD082 4N torque [N-m] 160 Peak run lange Contirtuous run range 0 100 200

Dotted line represents the torque at 10 % less supply voltage.

[Unit: mm]

MSME series

(Key way dimensions)

T(Key-way depth)

H

LC

[Unit: mm]

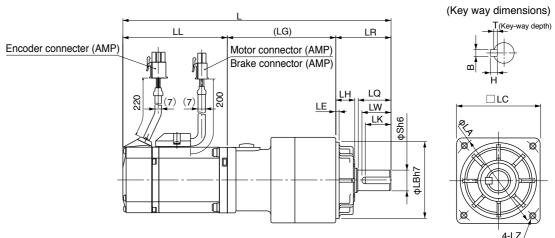
^{*} The figure represents the dimensions with brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т
MSME01		1/5	191.5	92													
WSWL01		1/3	221.5	122										67.5			
MSME01		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.0		4×4×16	2.5
	100		221.5	122	-							12					
MSME01		1/15	202	92										78			
			232	122								M6					
MSME01□□□4N		1/25	234	92	50	30	78	70	90	19	17	Depth	26	92		6×6×22	3.5
			264	122								20 M5					
MSME02□□□1N		1/5	184	79.5	32	20	52	50	60	12	10	Depth	18	72.5		4×4×16	2.5
			220.5	116								12					
MSME02□□□2N		1/9	219 255.5	79.5 116										89.5	3		
	200		229.5	79.5													
MSME02 3N		1/15	266	116													
			229.5	79.5										100			
MSME02□□□4N		1/25	266	116								M6	00				
			238.5	99	50	30	78	70	90	19	17	Depth 20	26			6×6×22	3.5
MSME04 1N		1/5	275	135.5													
		1 10	238.5	99										89.5			
MSME04 2N	400	1/9	275	135.5													
MSME04	400	1/15	249	99										100			
MSMEU4SN		1/15	285.5	135.5										100			
MSME04		1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4
WSWEU44N		1/23	300.5	135.5	01	40	30	30	113	24	10	20	33	104	3	0.77.00	4
MSME082□□1N		1/5	255.7	112.2	50	30	78	70	90	19	17	M6 Depth	26	93.5	3	6×6×22	3.5
WSWL002		175	291.7	148.2	30	30	70	70	30	13	''	20	20	30.5	0	UNUNEZ	0.0
MSME082□□2N		1/9	270.7	112.2										97.5			
	750	170	306.7	148.2										07.0			
MSME082 3N		1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4
		1/15	319.2	148.2				90	90 115		115 24 18	20		110			
MSME082□□4N		1/25	283.2	112.2													
			319.2	148.2													

Upper column: without brake [

Lower column: with brake

MSMD series



 * The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т
MCMD04		4 /5	191.5	92													
MSMD01		1/5	221.5	122										67.5			
MSMD01 = 2N		1/9	191.5	92	32	20	52	50	50 60	60 12	10	M5 Depth	18	67.5		4×4×16	2.5
	100	1/9	221.5	122	32	20	52	30	00	12	10	12	10			4x4x10	2.5
MSMD01□□□3N	100	1/15	202	92										78			
WISWIDOTSI4		1/13	232	122										70			
MSMD01 = 4N		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5
WISWIDOT 414		1/25	264	122	30	30	70	70	30	19	17	20	20	32		UXUXZZ	0.0
MSMD02□□□1N		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5
WISWIDUZIN		1/5	220.5	116	32	20	52	30	00	12	10	12	10	12.5		4x4x10	2.5
MSMD02□□□2N		1/9	219	79.5										89.5	3		
WISWIDUZZIV	200	173	255.5	116										03.5			
MSMD02□□□3N	200	1/15	229.5	79.5													
IIIOIIID02		.,,,	266	116										100			
MSMD02		1/25	229.5	79.5										100			
		0	266	116	50	30	78	70	90	19	17	M6 Depth	26			6×6×22	3.5
MSMD04		1/5	238.5	99								20					
			275	135.5										89.5			
MSMD04 = 2N		1/9	238.5	99													
	400		275	135.5													
MSMD04□□□3N		1/15	249	99										100			
			285.5	135.5								M8					
MSMD04□□□4N		1/25	264	99	61	40	98	90	115	24	18	Depth	35	104	5	8×7×30	4
			300.5	135.5								20 M6					
MSMD082□□1N		1/5	255.7	112.2	50	30	78	70	90	19	17	Depth	26	93.5	3	6×6×22	3.5
			292.7	149.2								20					
MSMD082□□2N		1/9	270.7	112.2										97.5			
	750		307.7	149.2								M8					
MSMD082□□3N		1/15 283.2 1 320.2 1		112.2	61	40	98	90	115	24	18	Depth	35		5	8×7×30	4
			149.2			96	98	5 90	90 113	0 113 24	24 10	20		110			
MSMD082□□4N		1/25		112.2													
			320.2	149.2													

Upper column: without brake

Lower column: with brake

[Unit: mm]

MHMD series

Encoder connecter (AMP)

Brake connector (AMP)

^{*} The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LW	(LG)	LE	Key way B×H×LK	Т					
			203.5	99								M5										
MHMD02 1N		1/5	240	135.5	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5					
		4 10	238.5	99										00.5								
MHMD02 2N	200	1/9	275	135.5										89.5								
MHMD02	200	1/15	249	99																		
MHMDU23N		1/15	285.5	135.5										100								
MHMD02		1/25	249	99										100	3							
		1/25	285.5	135.5	50	30	78	70	90	19	17	M6	26		Ü	6×6×22	3.5					
MHMD04		1/5	258	118.5	50	30	/0	70	90	19	17	Depth 20	20			0x0x22	3.5					
		1/5	294.5	155										89.5								
MHMD04 2N		1/9	258	118.5										09.5								
	400	1/9	294.5	155																		
MHMD04	400	1/15	268.5	118.5										100								
WINIVIDU4SIN		1/13	305	155										100								
		4 /05	283.5	118.5		40			445			M8	0.5	404	_	0 7 00						
MHMD04 4N		1/25	320	155	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4					
			270.7	127.2								M6										
MHMD082 1N		1/5	307.7	164.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5					
			285.7	127.2																		
MHMD082 2N	750	1/9	322.7	164.2										97.5								
	750	4/45	298.2	127.2		40			445		40	M8	0.5		_	0.7.00						
MHMD082 3N		1/15	335.2	164.2	61	40	98	90	115	15 24	18	Depth 20	35	110	5	8×7×30	4					
MUMPOOOTTAN		1/05	298.2	127.2														==	1	110		
MHMD082□□4N		1/25	298.2 127.2 335.2 164.2																			

Upper column: without brake	
Lower column: with brake	

MEMO

* For combination of elements of model number, refer to Index.

Features

- Line-up IP65 motor: 200 W to 5.0 kW
- Max speed: 5000 r/min (MSMJ, MHMJ)
- · Low inertia (MSME) to High inertia (MHME)
- 20-bit incremental encoder (1048576 pulse)
- 17-bit absolute encoder (131072 pulse).

[Please note]

Motors displayed at P.151 to P.181 are Special Order Product. Please contact us for more information.

Motor Lineup



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W) Rated speed: 3000 r/min Rated output: 200 W to 750 W

Enclosure : IP65



High inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W) Rated speed: 3000 r/min

Rated output: 200 W to 750 W

Enclosure : IP65



Low inertia

Max. speed : 5000 r/min : 4500 r/min

(from 4.0 kW)

Rated speed: 3000 r/min Rated output: 1.0 kW to 5.0 kW



Middle capacity



MGMF (Low speed/ High torque type) High inertia

Max. speed : 2000 r/min Rated speed: 1000 r/min

Rated output: IP65 0.9 kW to 3.0 kW

Enclosure : IP65



Middle inertia

Max. speed : 3000 r/min Rated speed: 2000 r/min

Rated output: IP65 1.0 kW to 5.0 kW

Enclosure : IP65



MHME High inertia

Max. speed : 3000 r/min

Enclosure : IP65

Rated speed: 2000 r/min Rated output: IP65 1.0 kW to 5.0 kW

Special Order Product

MSMJ (200 V)

200 W to 750 W....

1.0 kW to 5.0 kW P.164

MSME (200 V) 1.0 kW to 5.0 kW P.158

MDME (200 V)

MGME (200 V)

MHMJ (200 V)

200 W to 750 W..... .P.173

MHME (200 V)

Motor Contents

0.9 kW to 3.0 kW P.170

1.0 kW to 5.0 kW P.176

Special specifications

MSMJ, MHMJ **Special specifications** MSME, MDME, MGME, MHME

M: Special Order Product

Motor specifications MSMJ, MHMJ

M S M E 5 0 2 G C C M *

Voltage specifications

2: 200 V

Pulse counts Resolution Wires

1048576

131072

5

7

M A D K T 1 5 0 5

M A D K T 1 5 0 5 E **

	Sh	aft	Holding	g brake	Oil	seal
Symbol	Round	Key-way, center tap	without	with	without	with
Α	•		•		•	
В	•			•	•	
С	•		•			•
D	•			•		•
S		•	•		•	
Т		•		•	•	
U		•	•			•
٧		•		•		•

MSME, MDME, MGME, MHME

Symbol	Sh	aft	Holding	g brake	Oil seal				
Syllibol	Round	Key-way	without	with	without	with			
С	•		•			•			
D	•			•		•			
G		•	•			•			
Н		•		•		•			

* S: can be used in incremental.

Model Designation

Type

Low inertia (200 W to 750 W)

Low inertia (1.0 kW to 5.0 kW)

High inertia (0.9 kW to 3.0 kW)

High inertia (200 W to 750 W)

MHME High inertia (1.0 kW to 5.0 kW)

200 W

400 W

750 W

0.9 kW

1.0 kW

1.5 kW

2.0 kW

3.0 kW

4.0 kW

5.0 kW

Rotary encoder specifications

Format

Incremental

Absolute

Middle inertia (1.0 kW to 5.0 kW)

Servo Motor

Symbol

MSMJ

MSMF

MDMF

MGMF

MHMJ

02

04

08

09

10

15

20

30

40

50

Symbol

G

S

Motor rated output Symbol Rated output

<Cautions>

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

20-bit

17-bit

Design order

_	
Symbol	Specifications
С	IP65 motor (MSME, MDME, MGME, MHME)
1	IP65 motor (MSMJ, MHMJ)

Only position control

Servo Driver

Speed, Position, Torque, Full-closed type

Position control type

Frame symbol * ———						
Symbol	Frame					
MAD	Frame A					
MBD	Frame B					
MCD	Frame C					
MDD	Frame D					
MED	Frame E					
MFD	Frame F					

Series								
Symbol	Velocity, Position, Torque, Full-Closed type	Position control type						
K	A5 II series	A5 II E series						

Supply voltage specifications

Symbol Specifications 3-phase, 200 V Single/3-phase, 200 V

Power device Max. current rating

Symbol	Current rating
T1	10 A
T2	15 A
T3	30 A
T5	50 A
T7	75 A
TA	100 A
TB	150 A

 Current o	letector current	trating
Symbol	Specifications	

Special specifications

Special specifications

07 7.5 A 10 10 A 20 20 A 30 30 A 40 40 A 64 64 A 90 90 A A2 120 A

152

151

<Cautions> Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product 0.2 kW to 5.0 kW

A5 Family

Table of Part Numbers and Options: 0.2 kW to 5.0 kW

			Motor				Driver		Power			Optio	nal parts						
		_		Don't No.	Rating/	A5II series Part No.	A5IIE series Part No.		capacity	Encode	er Cable	Moto	r Cable	Brake Cable	External	Reactor	Noise Filter		
M	otor series	Power supply	Output (W)	Part No. Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type	(Position control type) Note) 2	Frame	(rated load) (kVA)	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3,7	without Brake Note) 3	with Brake Note) 3	Note) 3	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase		
	MSMJ		200	MSMJ022 □ 1 *	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	Approx. 0.5						DV0P227 DV0P220	DV0P4170		
(Leadwire) type	Cim ala	400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	MFECA 0**0EAM	MFECA 0**0EAE		MCA DEED	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM20042			
	3000 r/min	Single phase/	750	MSMJ082 □ 1 *	157	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042		
Low		3-phase 200 V	1000	MSME102 □ C * M	158	MDDKT5540	MDDKT5540E	_	Approx. 1.8						D) (0D 100 1	DV0P228 DV0P222	D) (0D (000		
5 5 5 1 5 1 5			1500	MSME152 □ C * M	159	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220		
٥	MSME 3000 r/min		2000	MSME202 □ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	-				_	DV0P4285 Note) 5	DV0P223	DV0PM20043		
	3000 1/111111	3-phase	3000	MSME302 □ C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5	-				-		DV0P224			
		200 V	4000	MSME402 ☐ C * M	162	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410		
			5000	MSME502 □ C * M	163	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5						,	Note) 6			
		Single phase/ 3-phase	1000	MDME102 □ C * M	164	MDDKT3530	MDDKT3530E	D-frame		MFMCD	MCD MFMCA		DV0P4284	DV0P222 DV0PM20047	DV0P4220				
A: L	MDME 20	200 V	1500	MDME152 ☐ C * M	165	MDDKT5540	MDDKT5540E			n	0**0ESE	0**2ECD				DV0P222			
		ı .	2000	MDME202 □ C * M	166	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3						DV0P4285 Note) 5	DV0P223	DV0PM20043		
		3-phase	3000	MDME302 □ C * M	167	MFDKTA390	MFDKTA390E		Approx. 4.5 Approx. 6	-		MEMOA			B) (2B)	DV0P224			
		200 V	4000	MDME402 ☐ C * M	168	MFDKTB3A2	MFDKTB3A2E	E Approx. 7.5		Approx. 7.5	-	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P225	DV0P3410		
		0	5000	MDME502 ☐ C * M	169	MFDKTB3A2	MFDKTB3A2E		F						-		Note) 6		
	MGME Low speed/\ High torque	Single phase/ 3-phase 200 V	900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E		e Approx. 1.8			эх. 1.8		MFMCD 0**2ECD	MFMCA **2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220
	type	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	F.	Approx. 3.8			MFMCA	MFMCA		DV0P4285	DV0P223	DV0D2410		
	1000 r/min	200 V	3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 4.5		0**3ECT	0**3FCT		×2 in parallel	DV0P224	DV0P3410			
	MHMJ		200	MHMJ022	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	.9 MFECA MF .9 0**0EAM 0**(MEEGA	ME	MOA	MEMOR		DV0P227 DV0P220	DV0P4170		
- I	(Leadwire) type	Single	400	MHMJ042 □ 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9		_			MFECA 0**0EAE		MFMCA 0**0EED	MFMCB 0**0GET	DV0P4283	DV0P228
-	3000 r/min	phase/ 3-phase	750	MHMJ082 ☐ 1 *	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042		
		200 V	1000	MHME102 □ C * M	176	MDDKT3530	MDDKT3530E	D-frame	Approx. 1.8				MFMCD	MFMCA		DV0D 100 1	DV0P228 DV0P222	DV0P4220	
			1500	MHME152 □ C * M	177	MDDKT5540	MDDKT5540E	D-mame	Approx. 2.3				0**2ECD	0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0F4220	
	MHME 2000 r/min		2000	MHME202 □ C * M	178	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 5	DV0P223	DV0PM2004		
	2000 I/IIIII	2 phase	3000	MHME302 □ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5	O OLOD	J JLOL	7 2205	2 2. 32			DV0P224			
		3-phase 200 V	4000	MHME402 □ C * M	180	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410		
			5000	MHME502 □ C * M	181	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5			3 3201			F	Note) 6			

Note) 1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.152)

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Note) 7 Please note that a battery is not supplied together with 17-bi absolute encoder cable (with battery box).

Please buy the battery part number "DV0P2990" separately.

	Title		Part No.	Pá	
Interface Cable			DV0P4360		
			DV0P4120	l	
			DV0P4121	197	
ntowfooo Comus	raian Cabl	_			
nterface Conve	rsion Cabi	е	DV0P4130		
			DV0P4131		
			DV0P4132	L	
Connector Kit	A-frame to Single row		DV0PM20032		
Supply Input Connection	D-frame	Double row type	DV0PM20033	2	
	E-frame		DV0PM20044		
Connector Kit	A-frame t	o D-frame	DV0PM20034		
for Motor Connection	E-frame		DV0PM20046	2	
Connector Kit for Regenerative Resistor	E-frame		DV0PM20045	_	
			DV0P4290	2	
			DV0P4310		
Connector Kit fo	r		DV0P4320	2	
Motor/Encoder (1	DV0P4330		
			DV0P4340	2	
			DV0P4380	2	
	RS485, F	15232	DV0PM20024	ľ	
	Safety	10202	DV0PM20025	ŀ	
				ľ	
Connector Kit	Interface		DV0P4350	_	
	External S	Scale	DV0PM20026		
	Encoder		DV0PM20010	1	
		onitor Signal	DV0PM20031	L	
Battery For Abso	olute Enco	der	DV0P2990	2	
Battery Box Not	te) 7		DV0P4430	ľ	
	A-frame		DV0PM20027		
Mounting	B-frame		DV0PM20028	١.	
Bracket	C-frame		DV0PM20029	2	
	D-frame		DV0PM20030	l	
			MFECA0**0EAD	t	
	without B	attery Box	MFECA0**0EAM	ŀ	
Encodor Coblo	Williout D	allery DOX	MFECA0**0ESD		
Encoder Cable		_		H	
	with Batte	ery Box	MFECA0**0EAE	ľ	
	Note) 7		MFECA0**0ESE	ľ	
			MFMCA0**0EED		
	without B	rake	MFMCD0**2ECD	ŀ	
Motor Cable	iout D	. 4110	MFMCE0**2ECD	L	
WICKOI CADIE	L		MFMCA0**3ECT		
	ith D		MFMCA0**2FCD		
	with Brak	е	MFMCA0**3FCT		
Brake Cable			MFMCB0**0GET	1	
	A-frame			f	
	B-frame		DV0P4283		
External	C-frame		D V OI 4200		
Regenerative			DV0D4004	2	
Resistor	D-frame		DV0P4284		
	E-frame		DV0P4285		
	F-frame			L	
Reactor	DV0P223), DV0P221, 3, DV0P224, 7, DV0P228,		2	
		0, DV0PM2		2	
		20, DV0PM2	0043	ľ	
Noise Filter	DV0P341	0		2	
Noise Filter	2			ſ	
	Single ph	ase	DV0P4190	,	
Noise Filter Surge Absorber		ase	DV0P4190 DV0P1450	2	

Cautions> Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Note) 2 Because A5IE series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

Note) 3 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m), (Example. 3 m: MFECA0030EAM)

Note) 4 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.

Note) 5 Other combinations exist, and refer to P.210 for details.

Note) 6 Reactor should be prepared by the user.

Cautions> Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC200 V			
Mataranadal		IP65		MSMJ022G1□	MSMJ022S1□	
Motor model *1		IP67		-	_	
Ampliaabla	Model	A5 I series		MADK	T1507	
Applicable driver *2	No.	A5IE series		MADKT1507E	_	
unvoi	Fr	ame symbol		A-fra	ame	
Power supply	capacit	y (kV	A)	0.	.5	
Rated output		()	N)	20	00	
Rated torque		(N·	m)	0.0	64	
Momentary M	ax. peal	k torque (N·	m)	1.91		
Rated current		(A(rm	s))	1.6		
Max. current		(A(o-	o))	6.9		
Regenerative I	orake	Without option	n	No limit Note)2		
frequency (times/	min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	al spee	d (r/m	in)	3000		
Max. rotationa	al speed	(r/m	in)	5000		
Moment of ine	ertia	Without brak	е	0.14		
of rotor (×10 ⁻⁴	kg·m²)	With brake		0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encode	er speci	fications Not	e)5	20-bit Incremental	17-bit Absolute	
F	esolutio	n per single tur	n	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

Permissible load (For details, refer to P.183)

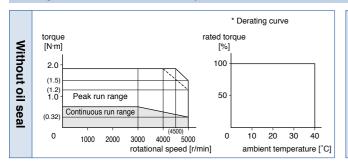
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
accombiy	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

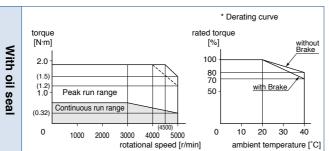
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MSMJ 200 W [Low inertia, Small capacity]

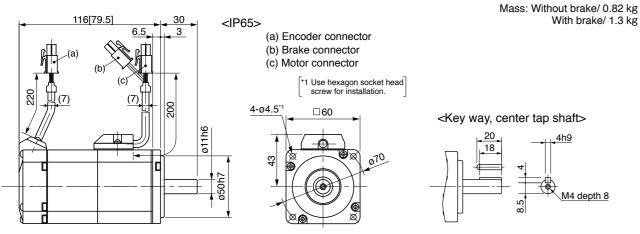
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MSMJ 400 W [Low inertia, Small capacity]

Please contact us for more information

Specifications

			AC200 V			
Mataumaad	-1	IP65		MSMJ042G1□	MSMJ042S1	
Motor mode	eI *1	IP67		-	-	
A 1: 1- 1 -	Model	A5II serie	s	MBDK	T2510	
Applicable driver	*2 No.	A5IIE ser	ries	MBDKT2510E	_	
unver	F	rame sym	bol	B-fra	ame	
Power supp	oly capacit	у	(kVA)	0	.9	
Rated outp	ut		(W)	40	00	
Rated torqu	ıe		(N·m)	1.	.3	
Momentary	Max. pea	k torque	(N·m)	3.8		
Rated curre	ent	(A(rms))	2.6		
Max. currer	nt		(A(o-p))	11.0		
Regenerativ	/e brake	Without option		No limit Note)2		
frequency (tir	mes/min) Note)1	DV0P4283		No limit Note)2		
Rated rotat	ional spee	d	(r/min)	3000		
Max. rotation	onal speed	l	(r/min)	5000		
Moment of	inertia	Without brake		0.26		
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	orake	0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

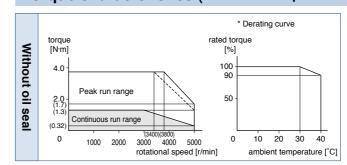
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

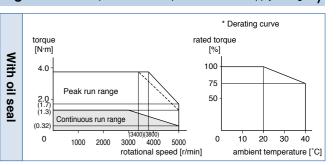
• Permissible load (For details, refer to P.183)

		Radial load P-direction (N)	392
	During assembly During operation	Thrust load A-direction (N)	147
		Thrust load B-direction (N)	196
		Radial load P-direction (N)	245
		Thrust load A, B-direction (N)	98

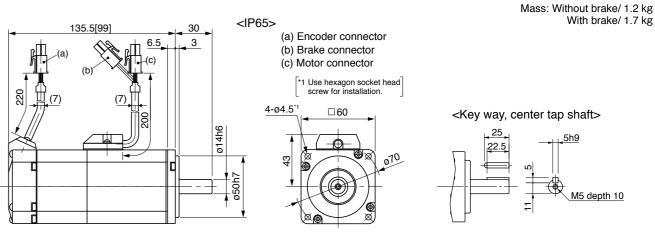
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MSME 1.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

			AC2	00 V
IP65			MSMJ082G1□	MSMJ082S1□
Motor model *1		IP67	-	-
Amaliaahla	Model	A5II series	MCDK	T3520
Applicable *2	No.	A5IIE series	MCDKT3520E	_
unver	Fr	ame symbol	C-fr	ame
Power supply of	capacit	y (kVA)	1	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2.4	
Momentary Ma	ax. peal	k torque (N·m)	7.1	
Rated current		(A(rms))	4.0	
Max. current		(A(o-p))	17.0	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0P4283	No limit Note)2	
Rated rotations	al spee	d (r/min)	3000	
Max. rotational	speed	(r/min)	4500	
Moment of ine	rtia	Without brake	0.87	
of rotor (×10 ⁻⁴ kg·m²) With brake		With brake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

Permissible load (For details, refer to P.183)

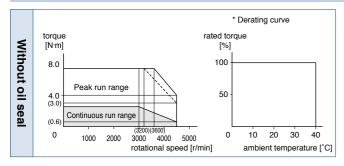
During assembly	Radial load P-direction (N)	686
	Thrust load A-direction (N)	294
accombiy	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

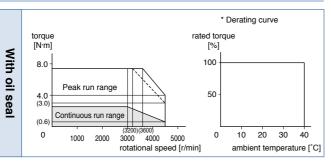
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MSMJ 750 W [Low inertia, Small capacity]

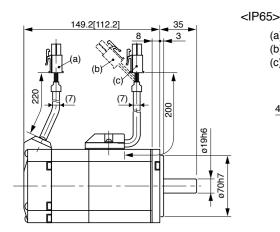
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





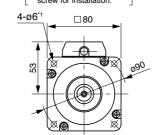
Dimensions



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

1 Use hexagon socket head



<Key way, center tap shaft>

Mass: Without brake/ 2.3 kg

With brake/ 3.1 kg

* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. **Special Order Product**

Specifications

				AC2	00 V	
Motor model		IP65		MSME102GC□M	MSME102SC□M	
wotor model		IP67		-	-	
A I' l. l .	Model	A5II series		MDDK	T5540	
Applicable driver *2	No.	A5IIE ser	ies	MDDKT5540E	-	
anvoi	Fr	ame sym	bol	D-fr	ame	
Power supply	capacit	y	(kVA)	1.	.8	
Rated output			(W)	10	00	
Rated torque			(N·m)	3.	18	
Momentary M	ax. peal	k torque	(N·m)	9.55		
Rated current		(.	A(rms))	6.6		
Max. current		((A(o-p))	2	28	
Regenerative I	brake	Without	option	No limi	t Note)2	
frequency (times	/min) Note)1	DV0P4284		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	2.03		
of rotor (×10 ⁻⁴ kg·m²) With brake		rake	2.35			
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
F	Resolutio	n per sing	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

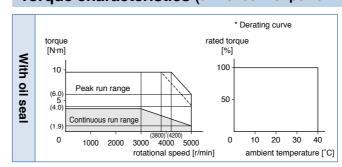
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

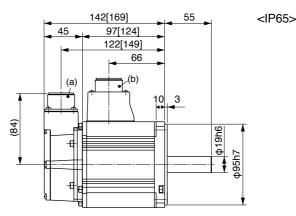
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

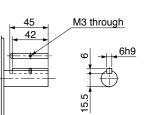


100

With brake/ 4.5 kg

Mass: Without brake/ 3.5 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MSME 2.0 kW [Low inertia, Middle capacity]

A5 Family

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V		
IP65			MSME152GC□M	MSME152SC□M		
Motor model *1		IP67		-	_	
A II I- I -	Model	A5II series		MDDK	T5540	
Applicable *2	No.	A5IIE series		MDDKT5540E	_	
unver	Fr	ame symbol		D-fr	ame	
Power supply	capacity	y (kV	۹)	2	.3	
Rated output		(V	V)	15	00	
Rated torque		(N·r	n)	4.	4.77	
Momentary Ma	ax. peal	torque (N·r	n)	14.3		
Rated current		(A(rms	;))	8.2		
Max. current		(A(o-p))	35		
Regenerative b	rake	Without optio	n	No limit Note)2		
frequency (times/n	nin) Note)1	DV0P4284		No limit Note)2		
Rated rotation	al spee	d (r/mi	n)	3000		
Max. rotational	speed	(r/mi	n)	5000		
Moment of ine	rtia	Without brake	9	2.84		
of rotor ($\times 10^{-4}$	kg·m²)	With brake		3.17		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less			
Rotary encoder specifications Note)5)5	20-bit Incremental	17-bit Absolute		
Re	esolutio	n per single turr	1	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

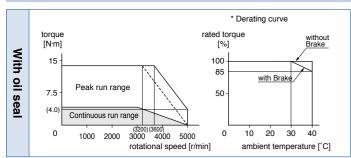
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

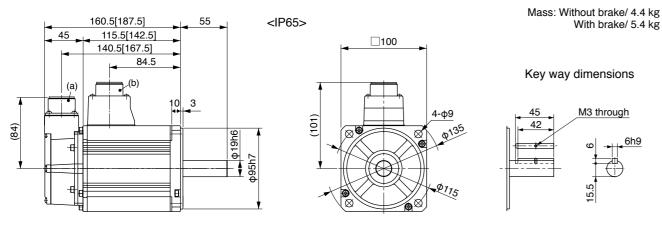
200 V MSME 1.5 kW [Low inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

Special Order Product

				AC2	00 V
M-4		IP65		MSME202GC□M	MSME202SC□I
Motor mode *	:1	IP67		-	_
A	Model	A5II serie	S	MEDK	T7364
Applicable driver *	No.	A5IIE series		MEDKT7364E	-
unven	Fi	ame sym	bol	E-fra	ame
Power supp	ly capacit	у	(kVA)	3	.3
Rated outpu	ut		(W)	20	00
Rated torqu	е		(N·m)	6.:	37
Momentary	Max. pea	k torque	(N·m)	19).1
Rated curre	nt	(A(rms))	11.3	
Max. curren	t	((A(o-p))	4	8
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4285		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	3.68	
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary encoder specifications No		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per s			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

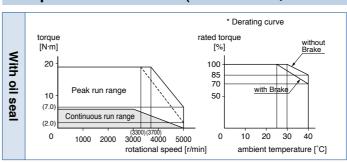
,
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

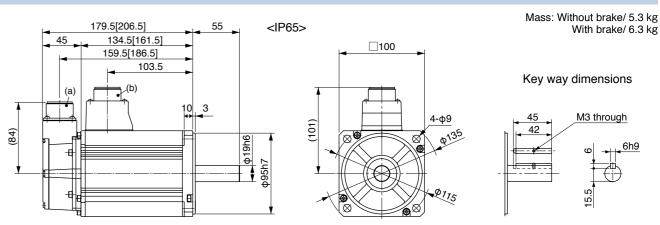
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V
		MSME302GC□M	MSME302SC□M	
Motor model *1		IP67	-	-
Amaliaahla	Model	A5I series	MFDKTA390	
Applicable 42	No.	A5IIE series	MFDKTA390E	_
divei	Fr	ame symbol	F-fra	ame
Power supply	capacity	y (kVA)	4	.5
Rated output		(W)	30	00
Rated torque		(N·m)	9.55	
Momentary Ma	ax. peal	k torque (N·m)	28.6	
Rated current		(A(rms))	18.1	
Max. current		(A(o-p))	77	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without brake	6.50	
of rotor (×10 ⁻⁴	kg·m²)	With brake	7.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

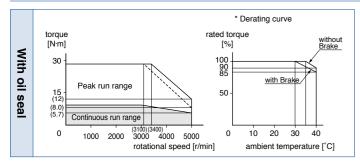
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

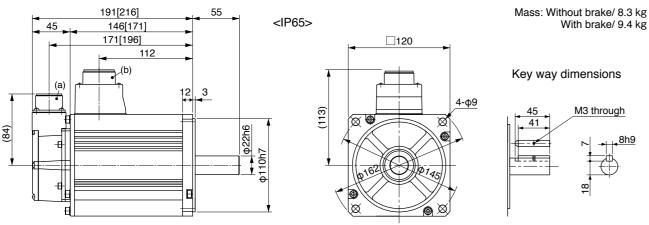
200 V MSME 3.0 kW [Low inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MSME 4.0 kW [Low inertia, Middle capacity]

Please contact us for more information

Specifications

					AC2	00 V
		IP65		MSME402GC□M	MSME402SC□	
Motor mod	1 e l *1		IP67		-	-
		Model	A5II serie	s	MFDK	TB3A2
Applicable driver	*2	No.	A5IIE ser	ries	MFDKTB3A2E	_
unven		Fr	ame sym	bol	F-fra	ame
Power sup	ply	capacity	/	(kVA)	6	.0
Rated outp	out			(W)	40	00
Rated torq	ue			(N·m)	12	2.7
Momentary	у Ма	ax. peal	c torque	(N·m)	38.2	
Rated curr	ent		(A(rms))	19.6	
Max. curre	ent			(A(o-p))	83	
Regenerati	ve b	rake	Without option		No limit Note)2	
, , , , , , , , , , , , , ,		DV0P4285×2		No limit Note)2		
Rated rota	tiona	al spee	d	(r/min)	3000	
Max. rotati	ional	speed		(r/min)	4500	
Moment of	f ine	rtia	Without	t brake	12.9	
of rotor (x1	10-4	kg·m²)	With b	orake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
	Re	esolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

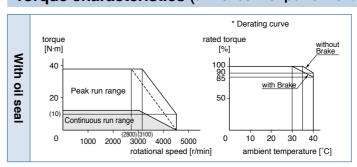
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

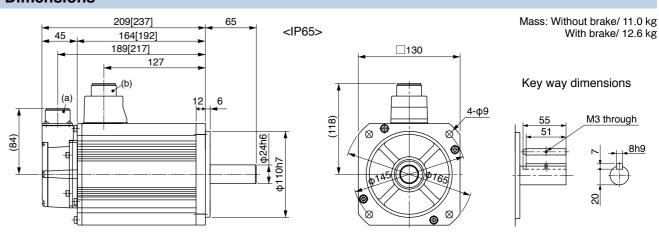
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				AC2	00 V
		IP65		MSME502GC□M	MSME502SC□M
Motor model		IP67		-	_
Amaliaalala	Model	A5II series		MFDKTB3A2	
Applicable driver *2	No.	A5IE series		MFDKTB3A2E	_
divoi	Fr	ame symbol		F-fra	ame
Power supply	capacit	y (kVA	۱)	7.	.5
Rated output		(V	V)	50	00
Rated torque		(N·n	1)	15.9	
Momentary M	ax. peal	k torque (N·n	1)	47.7	
Rated current		(A(rms))	24.0	
Max. current		(A(o-p))	102	
Regenerative b	orake	Without option	า	357	
frequency (times/	min) Note)1	DV0P4285×2	2	No limit Note)2	
Rated rotation	al spee	d (r/mir	1)	3000	
Max. rotationa	ıl speed	(r/mir	1)	4500	
Moment of ine	ertia	Without brake	,	17.4	
of rotor (×10 ⁻⁴	kg·m²)	With brake		18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3)3	15 times or less	
Rotary encoder specifications Note)5)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			ı	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

1	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

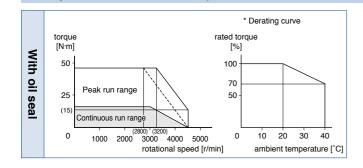
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

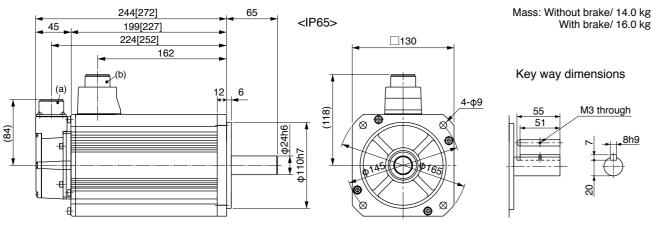
200 V MSME 5.0 kW [Low inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. **Special Order Product**

200 V MDME 1.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V
Matanaaa	-1	IP65		MDME102GC□M	MDME102SC N
Motor mode	€I *1	IP67		-	-
A 1: 1- 1 -	Model	A5II serie	S	MDDK	T3530
Applicable driver	No.	A5IIE ser	ies	MDDKT3530E	-
unven	F	rame sym	bol	D-fra	ame
Power supp	oly capacit	У	(kVA)	1.	.8
Rated outp	ut		(W)	10	00
Rated torqu	ıe		(N·m)	4.	77
Momentary	Max. pea	k torque	(N·m)	14.3	
Rated curre	ent	(A(rms))	5.7	
Max. currer	nt		(A(o-p))	24	
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tin	nes/min) Note)	DV0P4284		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	onal speed	I	(r/min)	3000	
Moment of	inertia	Without	brake	4.60	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With brake		5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specificati		fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single to			le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

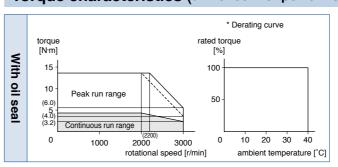
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

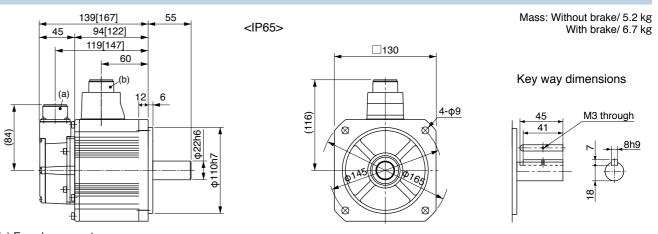
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V
		IP65	MDME152GC□M	MDME152SC□M
Motor model *1		IP67	-	-
A II I I	Model	A5II series	MDDK	T5540
Applicable 42	No.	A5IIE series	MDDKT5540E	_
unver	Fr	ame symbol	D-fra	ame
Power supply	capacit	y (kVA)	2.	.3
Rated output		(W)	15	00
Rated torque		(N·m)	7.	16
Momentary Ma	ax. peal	k torque (N·m)	21.5	
Rated current		(A(rms))	9.4	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4284	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	6.70	
of rotor (×10 ⁻⁴ kg·m ²)		With brake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

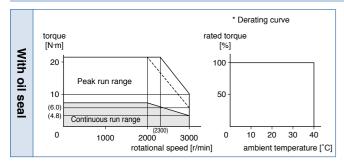
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

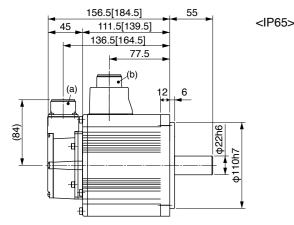
200 V MDME 1.5 kW [Middle inertia, Middle capacity]

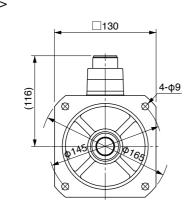
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



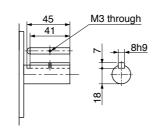
Dimensions





Mass: Without brake/ 6.7 kg With brake/ 8.2 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MDME 2.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

				AC200 V		
M - t - · · · · · · · · · · · · · · · · · ·		IP65		MDME202GC□M	MDME202SC_N	
Motor mode	€I *1		IP67		-	-
A	Мо	del	A5II serie	S	MEDKT7364	
Applicable driver	*2 No.		A5IIE series		MEDKT7364E	-
unven		Fr	ame sym	bol	E-fra	ame
Power supp	oly capa	acity	/	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ıe			(N·m)	9.	55
Momentary	Max. p	oeal	c torque	(N·m)	28.6	
Rated curre	ent		(A(rms))	11.5	
Max. currer	nt		((A(o-p))	49	
Regenerativ	e brake	9	Without	option	No limit Note)2	
frequency (tin	nes/min) N	ote)1	DV0P4285		No limit Note)2	
Rated rotat	ional sp	pee	d	(r/min)	2000	
Max. rotation	onal spe	eed		(r/min)	3000	
Moment of	inertia		Without	brake	8.72	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	10.0		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

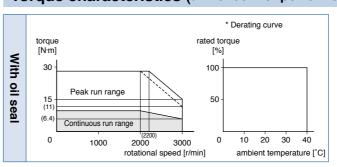
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

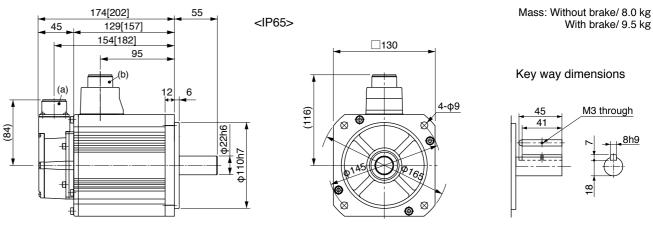
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Please contact us for more information

Specifications

			AC2	00 V
		IP65	MDME302GC□M	MDME302SC□M
Motor model *1		IP67	-	-
Amaliaahla	Model	A5II series	MFDK	TA390
Applicable *2	No.	A5IE series	MFDKTA390E	_
divei	Fr	ame symbol	F-fra	ame
Power supply of	capacity	y (kVA)	4	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	.3
Momentary Ma	ıx. peal	torque (N·m)	43.0	
Rated current		(A(rms))	17.4	
Max. current		(A(o-p))	74	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotations	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of iner	rtia	Without brake	12.9	
of rotor (×10 ⁻⁴	kg·m²)	With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

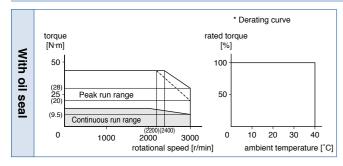
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

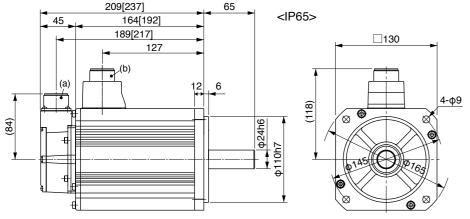
200 V MDME 3.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

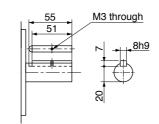


Dimensions



Mass: Without brake/ 11.0 kg With brake/ 12.6 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

Specifications

			AC200 V		
Matauranal	-1	IP65		MDME402GC□M	MDME402SC M
Motor mode	₽I ∗1	IP67		_	-
A 1: 1-1	Model	A5II serie	s	MFDKTB3A2	
Applicable driver	No.	A5IIE ser	ies	MFDKTB3A2E	_
dilvoi	F	rame sym	bol	F-fra	ame
Power supp	oly capaci	ty	(kVA)	6	.0
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	57.3	
Rated curre	ent	(A(rms))	21.0	
Max. current (A(o-p))			89		
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)	DV0P4285×2		No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	onal speed	d	(r/min)	3000	
Moment of	inertia	Without brake		37.6	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With b	orake	38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

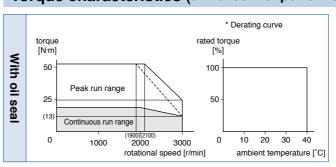
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

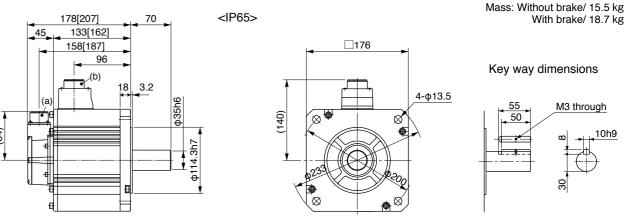
	During assembly During operation	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
		Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

				00 V
			MDME502GC□M	MDME502SC□M
Motor model *1		IP67	-	-
Amaliaahla	Model	A5I series	MFDK	TB3A2
Applicable 42	No.	A5IIE series	MFDKTB3A2E	-
diver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	7.	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23.9	
Momentary Ma	ax. peal	k torque (N·m)	71.6	
Rated current		(A(rms))	25.9	
Max. current		(A(o-p))	110	
Regenerative b	rake	Without option	120	
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	48.0	
of rotor (×10 ⁻⁴	kg·m²)	With brake	48.8	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

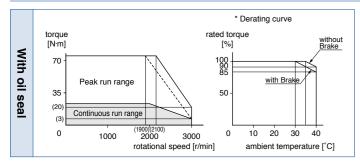
During assembly During operation	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

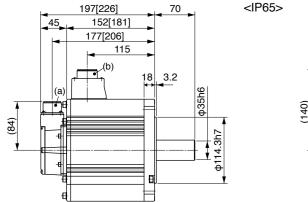
200 V MDME 5.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



4-φ13.5

Key way dimensions

Mass: Without brake/ 18.6 kg

With brake/ 21.8 kg

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MGME 0.9 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V
Makanadal	IP65			MGME092GC□M	MGME092SC□I
Motor model *1		IP67		-	-
A	Model	A5II series		MDDK	T5540
Applicable driver *2	No.	A5IIE seri	es	MDDKT5540E	_
unver	Fr	ame symb	ool	D-fra	ame
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(W)	90	00
Rated torque			(N·m)	8.8	59
Momentary M	ax. peal	k torque	(N·m)	19.3	
Rated current		()	A(rms))	7.6	
Max. current		(A(o-p))	24	
Regenerative b	orake	Without option No limit Note):		t Note)2	
frequency (times/	min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without brake		6.70	
of rotor (×10 $^{-4}$ kg·m 2)		With brake		7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	s or less
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

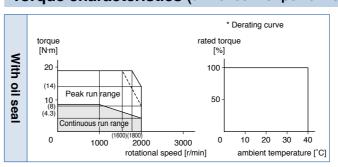
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

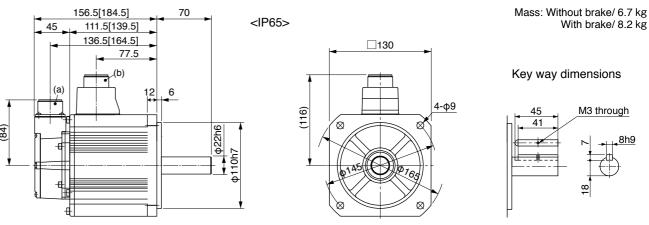
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	686
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V	
IP65			MGME202GC□M	MGME202SC□M	
Motor model *1		IP67		-	_
A	Model	A5 I series		MFDKTA390	
Applicable 42	No.	A5IIE serie	es	MFDKTA390E	_
diver	Fr	ame symb	ol	F-fra	ame
Power supply	capacity	y	(kVA)	3	.8
Rated output			(W)	20	00
Rated torque			(N·m)	19).1
Momentary Ma	ax. peal	k torque	(N·m)	47.7	
Rated current		(A	(rms))	17.0	
Max. current		(/	۹(o-p))	60	
Regenerative b	orake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P42	85×2	No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	Without I	brake	30.3	
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	31.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single	e turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

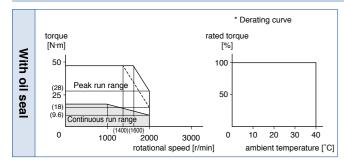
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

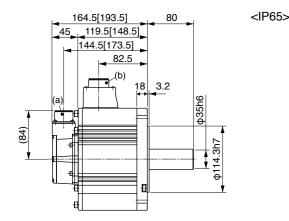
200 V MGME 2.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



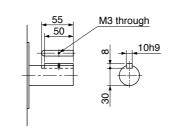
Dimensions



4-φ13.5

Mass: Without brake/ 14.0 kg With brake/ 17.5 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MGME 3.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

			AC200 V		
M - t - · · · · · · · · · · ·		IP65		MGME302GC□M	MGME302SC□N
Motor mode	el ⊧1	IP67		-	-
	Model	A5II serie	S	MFDK	ТВЗА2
Applicable driver *	No.	A5IIE ser	ies	MFDKTB3A2E	-
unvei	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	4.	.5
Rated outpo	ut		(W)	30	00
Rated torqu	ie		(N·m)	28	3.7
Momentary	Max. pea	k torque	(N·m)	71.7	
Rated curre	ent	(A(rms))	22.6	
Max. currer	nt		(A(o-p))	80	
Regenerativ	e brake	Without option No limit Note)2		t Note)2	
frequency (tim	nes/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotati	ional spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of	inertia	Without	brake	48.4	
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	49.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

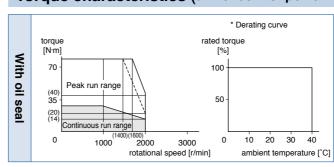
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

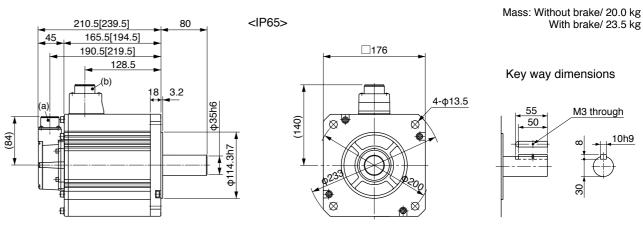
	During assembly During operation	Radial load P-direction (N)	2058
		Thrust load A-direction (N)	980
		Thrust load B-direction (N)	1176
		Radial load P-direction (N)	1470
		Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC2	00 V	
		IP65	MHMJ022G1□	MHMJ022S1	
Motor model		IP67	_	_	
	Model	A5I series	MADK	T1507	
Applicable driver *2	No.	A5IE series	MADKT1507E	_	
unvoi	Fr	ame symbol	A-fr	ame	
Power supply	capacit	y (kVA)	0	.5	
Rated output		(W)	20	00	
Rated torque		(N·m)	0.	0.64	
Momentary M	ax. peal	k torque (N·m)	1.91		
Rated current		(A(rms))	1.6		
Max. current		(A(o-p))	6.9		
Regenerative b	orake	Without option	No lim	t Note)2	
frequency (times/	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	ıl speed	(r/min)	5000		
Moment of ine	ertia	Without brake	0.42		
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.45		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

Permissible load (For details, refer to P.183)

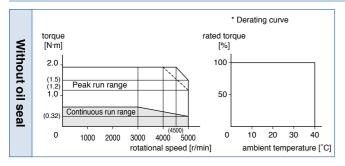
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

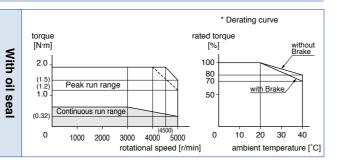
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MHMJ 200 W [High inertia, Small capacity]

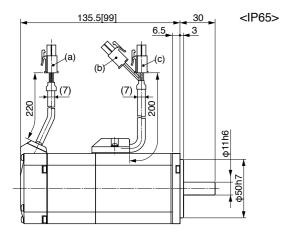
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector

<Key way, center tap shaft>

* Figures in [] represent the dimensions without brake.

[Unit: mm]

Mass: Without brake/ 0.96 kg

With brake/ 1.4 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MHMJ 400 W [High inertia, Small capacity]

Specifications

					AC2	00 V
Motor model		IP65			MHMJ042G1□	MHMJ042S1
MOTOL LHOO	*1		IP67		-	-
Annlinabla		Model	A5 I series		MBDKT2510	
Applicable driver	*2	No.	A5IIE series		MBDKT2510E	-
diivoi		Fr	ame sym	bol	B-fra	ame
Power sup	ply o	capacity	y	(kVA)	0	.9
Rated outp	out			(W)	40	00
Rated torq	ue			(N·m)	1.	.3
Momentary	у Ма	ax. peal	torque	(N·m)	3.8	
Rated current (A(rms))			2.6			
Max. current (A(o-p))			11	.0		
Regenerati	ve b	rake	Without	option	No limi	t Note)2
frequency (ti	imes/n	nin) Note)1	DV0P4283		No limit Note)2	
Rated rota	tiona	al spee	d	(r/min)	3000	
Max. rotati	onal	speed		(r/min)	5000	
Moment of	ine	rtia	Without	brake	0.67	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	0.70		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary end	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Re	esolutio	n per sing	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

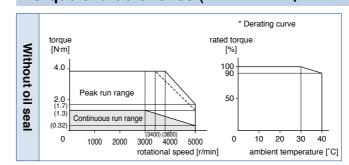
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

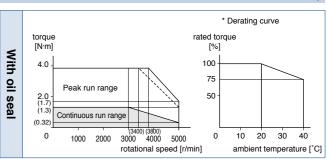
• Permissible load (For details, refer to P.183)

Radial load P-direction (N)	392
Thrust load A-direction (N)	147
Thrust load B-direction (N)	196
Radial load P-direction (N)	245
Thrust load A, B-direction (N)	98
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

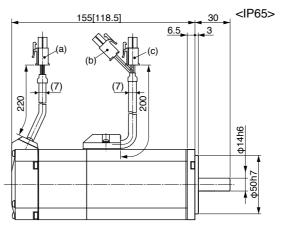
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





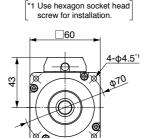
Dimensions



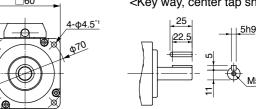
(a) Encoder connector

(b) Brake connector

(c) Motor connector



<Key way, center tap shaft>



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Mass: Without brake/ 1.4 kg With brake/ 1.8 kg

200 V MHME 1.0 kW [High inertia, Middle capacity]

Motor Specifications

Specifications

			AC2	00 V
Matanasadal		IP65	MHMJ082G1□	MHMJ082S1
Motor model		IP67	-	-
A 15 1-1	Model	A5II series	MCDKT3520	
Applicable driver *2	No.	A5IIE series	MCDKT3520E	_
anver	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	1	.3
Rated output		(W)	7	50
Rated torque		(N·m)	2.4	
Momentary Ma	ax. peal	k torque (N·m)	7.1	
Rated current		(A(rms))	4.0	
Max. current	Max. current (A(o-p))		17.0	
Regenerative b	rake	Without option	No lim	t Note)2
frequency (times/r	min) Note)1	DV0P4283	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	1.51	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	1.61	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

Permissible load (For details, refer to P.183)

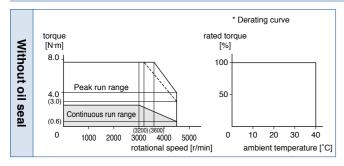
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
accombiy	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

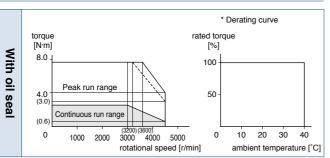
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MHMJ 750 W [High inertia, Small capacity]

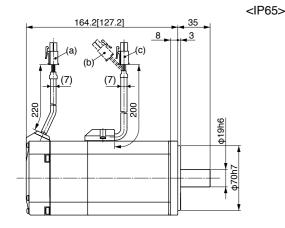
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





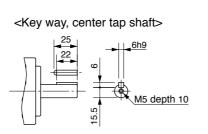
Dimensions



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

*1 Use hexagon socket head screw for installation.



Mass: Without brake/ 2.5 kg

With brake/ 3.5 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. **Special Order Product**

Please contact us for more information

Specifications

					AC2	00 V
Makananadal		IP65		MHME102GC□M	MHME102SC N	
Motor mode	₽I *1		IP67		-	_
A 1: 1- 1 -		Model	A5I series		MDDK	T3530
Applicable driver	*2	No.	A5IIE series		MDDKT3530E	_
unven		Fr	ame sym	bol	D-fra	ame
Power supp	oly c	apacit	y	(kVA)	1.	8
Rated outp	ut			(W)	10	00
Rated torqu	ıe			(N·m)	4.	77
Momentary	Ма	x. peal	k torque	(N·m)	14.3	
Rated curre	ent		(A(rms))	5.7	
Max. currer	nt		((A(o-p))	24	
Regenerativ	/e bi	ake	Without option 83		3	
frequency (tin	nes/m	in) Note)1	DV0P4284		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without brake		24.7	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With brake		26.0		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less				
Rotary encoder specific		fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per s			n per sina	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

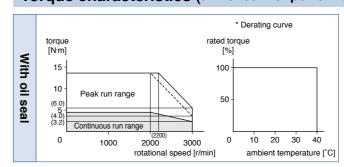
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

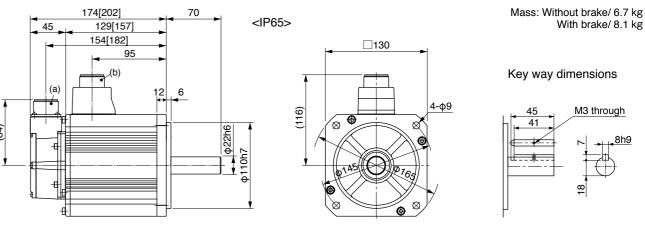
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Please contact us for more information

Specifications

					00 V	
		IP65		MHME152GC□M	MHME152SC□M	
Motor model *1		IP67		-	-	
Amaliaahla	Model	A5II series		MDDKT5540		
Applicable 42	No.	A5IIE ser	ries	MDDKT5540E	_	
diver	Fr	ame sym	ıbol	D-fr	ame	
Power supply	capacit	y	(kVA)	2	.3	
Rated output			(W)	15	00	
Rated torque			(N·m)	7.	7.16	
Momentary Ma	ax. peal	k torque	(N·m)	21.5		
Rated current		((A(rms))	9.4		
Max. current			(A(o-p))	40		
Regenerative b	rake	Without	option	22		
frequency (times/r	min) Note)1	DV0P	DV0P4284 130		30	
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia	Without	t brake	37.1		
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	38.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

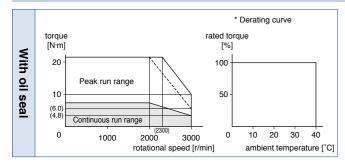
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

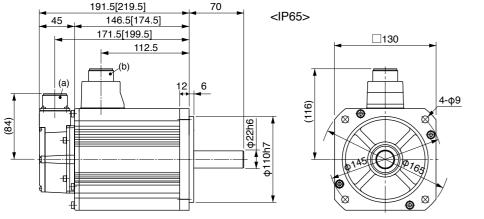
200 V MHME 1.5 kW [High inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



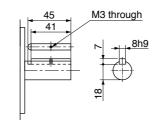
Dimensions



Mass: Without brake/ 8.6 kg

With brake/ 10.1 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

					AC2	00 V	
Makananalah		IP65			MHME202GC□M	MHME202SC□M	
Motor mod	€I ∗1		IP67		-	-	
A		Model	A5II series	S	MEDK	T7364	
Applicable driver	*2	No.	A5IE series		MEDKT7364E	_	
anvoi		Fr	ame sym	bol	E-fr	ame	
Power sup	ply (capacity	/	(kVA)	3	.3	
Rated outp	ut			(W)	20	00	
Rated torq	ue			(N·m)	9.	55	
Momentary	/ Ma	ax. peal	torque	(N·m)	28.6		
Rated curr	ent		(A(rms))	11.1		
Max. curre	nt		((A(o-p))	4	7	
Regenerati	ve b	rake	Without	option	4	45	
frequency (ti	mes/n	nin) Note)1	DV0P	4285	142		
Rated rota	tiona	al spee	d	(r/min)	2000		
Max. rotati	ona	speed		(r/min)	3000		
Moment of	ine	rtia	Without brake		57.8		
of rotor (×1	0-4	kg·m²)	With b	rake	59.6		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute				
	Re	Resolution per single turn			1048576	131072	

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

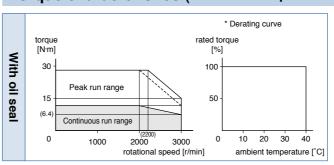
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

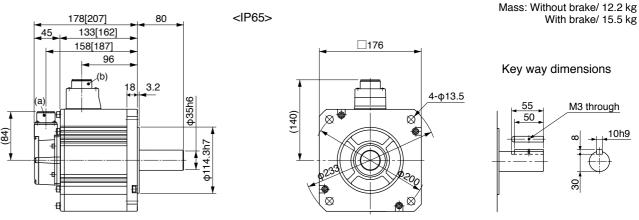
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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A5 Family

E Series

Informa

				AC200 V		
Mataranadal		IP65		MHME302GC□M	MHME302SC□M	
Motor model		IP67		-	-	
A Un a la la	Model	A5II series	3	MFDK	TA390	
Applicable driver *2	No.	A5IIE series		MFDKTA390E	_	
unver	Fr	ame syml	bol	F-fr	ame	
Power supply	capacit	y	(kVA)	4	.5	
Rated output			(W)	30	00	
Rated torque			(N·m)	14	1.3	
Momentary M	ax. peal	k torque	(N·m)	43.0		
Rated current		(/	A(rms))	16.0		
Max. current		(A(o-p))	68		
Regenerative I	orake	Without	option	1	9	
frequency (times	min) Note)1	DV0P42	285×2	142		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	3000		
Moment of ine	ertia	Without	brake	90.5		
of rotor (×10 ⁻²	kg·m²)	With b	rake	92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
F	Resolutio	n per singl	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

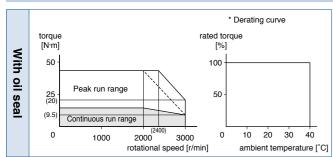
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

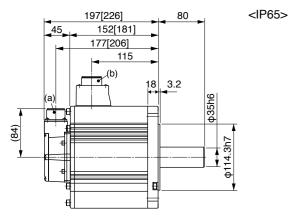
200 V MHME 3.0 kW [High inertia, Middle capacity]

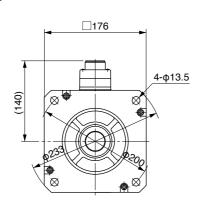
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

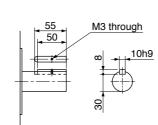


Dimensions





Mass: Without brake/ 16.0 kg With brake/ 19.2 kg Key way dimensions



(a) Encoder connector

<Cautions>

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. **Special Order Product**

200 V MHME 4.0 kW [High inertia, Middle capacity]

Please contact us for more information

Specifications

				AC200 V		
Mada alal		IP65		MHME402GC□M	MHME402SC N	
Motor model		IP67		-	-	
A U la la	Model	A5II serie	S	MFDK	ТВЗА2	
Applicable driver *2	No.	A5IIE series		MFDKTB3A2E	-	
unven	Fr	ame sym	bol	F-fra	ame	
Power supply	capacit	у	(kVA)	6	.0	
Rated output			(W)	40	00	
Rated torque			(N·m)	19).1	
Momentary N	1ax. peal	k torque	(N·m)	57.3		
Rated curren	t	(A(rms))	21.0		
Max. current			(A(o-p))	89		
Regenerative	brake	Without option		17		
frequency (times	s/min) Note)1	DV0P4285×2		125		
Rated rotatio	nal spee	d	(r/min)	2000		
Max. rotation	al speed		(r/min)	3000		
Moment of in	ertia	Without brake		112		
of rotor (×10	4 kg·m²)	With brake		114		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
F	Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

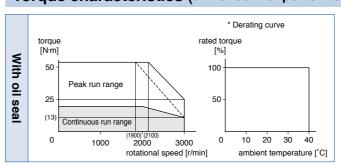
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

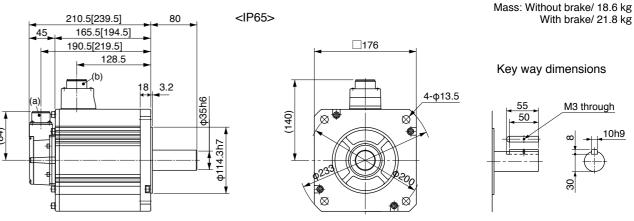
	During assembly During operation	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
		Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

			AC200 V			
Motor model		IP65	MHME502GC□M	MHME502SC□M		
Wiotor model	IP67		_	_		
Ammliaalala	Model	A5I series	MFDK	TB3A2		
Applicable driver *2	No.	A5IE series	MFDKTB3A2E	_		
dilvei	Fr	ame symbol	F-fra	ame		
Power supply	capacit	y (kVA)	7.	.5		
Rated output		(W)	50	00		
Rated torque		(N·m)	23	3.9		
Momentary Ma	ax. peal	k torque (N·m)	71.6			
Rated current		(A(rms))	25.9			
Max. current		(A(o-p))	110			
Regenerative b	rake	Without option	10			
frequency (times/	min) Note)1	DV0P4285×2	76			
Rated rotation	al spee	d (r/min)	2000			
Max. rotationa	l speed	(r/min)	3000			
Moment of ine	rtia	Without brake	16	162		
of rotor (×10 ⁻⁴	kg·m²)	With brake	16	164		
Recommende ratio of the loa			5 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072		

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	24.5 or more		
Engaging time (ms)	80 or less		
Releasing time (ms) Note)4	25 or less		
Exciting current (DC) (A)	1.3±10 %		
Releasing voltage (DC) (V)	2 or more		
Exciting voltage (DC) (V)	24±2.4		

Permissible load (For details, refer to P.183)

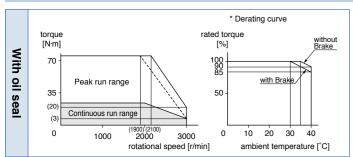
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

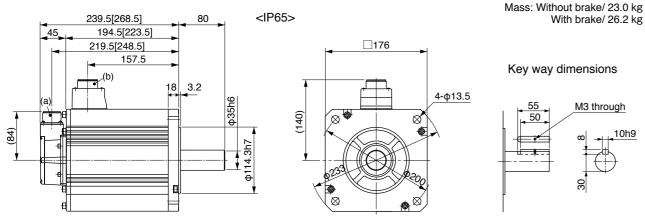
200 V MHME 5.0 kW [High inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

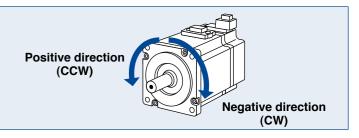
Environmental Conditions

l+	em	Conditions		
Ambient temperature *1		0 °C to 40 °C (free from freezing)		
Ambient hu	•	20 % to 85 % RH (free from condensation)		
	,	·		
	mperature *2	-20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation 5)		
Storage hu	midity	20 % to 85 % RH (free from condensation ^{*5})		
Vibration Motor only		50 W to 5.0 kW : Lower than 49 m/s² (5 G) at running, 24.5 m/s² (2.5 G) at stall 6.0 kW to 15.0 kW : Lower than 24.5 m/s² (2.5 G) at running, 24.5 m/s² (2.5 G) at stall		
Impact	Motor only	Lower than 98 m/s ² (10 G)		
		MSMD, MHMD, MSMJ, MHMJ		
		(except rotating portion of output shaft and readwire end.)		
Enclosure	IP65 *3	M * ME (IP65 motor: 0.9 kW or more)		
rating		(except rotating portion of output shaft and connecting pin part of the motor connector		
(Motor		and the encoder connector)		
only)		M * ME IP67 motor		
	IP67 *3*4	(except rotating portion of output shaft and connecting pin part of the motor connector		
		and the encoder connector)		
Altitude		Lower than 1000 m		

- *1 Ambient temperature to be measured at 5 cm away from the motor.
- *2 Permissible temperature for short duration such as transportation.
- *3 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5). Do not use these motors in application where water proof performance is required such as continuous wash-down operation.
- *4 This condition is applied when the connector mounting screw are tightened to the recommended tightening torque.
- *5 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

<Note>

Initial setup of rotational direction: positive = CCW and negative = CW. Pay an extra attention.



Notes on [Motor specification] page

Note) 1. [At AC100 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC115 V (at 100 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

[At AC200 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC230 V (at 200 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

Description

[At AC400 V of power voltage]

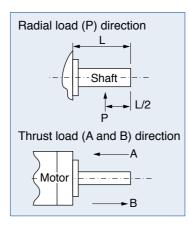
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC460 V (at 400 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/460) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
- Note) 2. If the effective torque is within the rated torque, there is no limit in generative brake.
- Note) 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
- Note) 4. Releasing time values represent the ones with DC-cutoff using a varistor.
- Note) 5. The 17-bit absolute encoder can also be used as a 17-bit incremental encoder.

Permissible Load at Output Shaft

The radial load is defined as a load applied to the output shaft in the right-angle direction. This load is generated when the gear head is coupled to the machine using a chain, belt, etc., but not when the gear head is directly connected to the coupling. As shown in the right figure, the permissible value is determined based on the load applied to the L/2 position of the output shaft. The thrust load is defined as a load applied to the output shaft in the axial direction.

Because the radial load and thrust load significantly affect the life of the bearing, take care not to allow the load during operation to exceed the permissible radial load and thrust load shown in the table below.



Built-in Holding Brake

In the applications where the motor drives the vertical axis, this brake would be used to hold and prevent the work (moving load) from falling by gravity while the power to the servo is shut off.

Use this built-in brake for "Holding" purpose only, that is to hold the stalling status. Never use this for "Brake" purpose to stop the load in motion.

Output Timing of BRK-OFF Signal

- For the brake release timing at power-on, or braking timing at Servo-OFF/Servo-Alarm while the motor is in motion, refer to the Operating Instructions (Overall).
- With the parameter, Pr4.38 (Setup of mechanical brake action while the motor is in motion), you can set up a time between when the motor enters to a free-run from energized status and when BRK-OFF signal turns off (brake will be engaged), when the Servo-OFF or alarm occurs while the motor is in motion. For details, download a copy of the instruction manual from our website.

-Notos

- 1. The lining sound of the brake (chattering and etc.) might be generated while running the motor with built-in brake, however this does not affect any functionality.
- 2. Magnetic flux might be generated through the motor shaft while the brake coil is energized (brake is open). Pay an extra attention when magnetic sensors are used nearby the motor.

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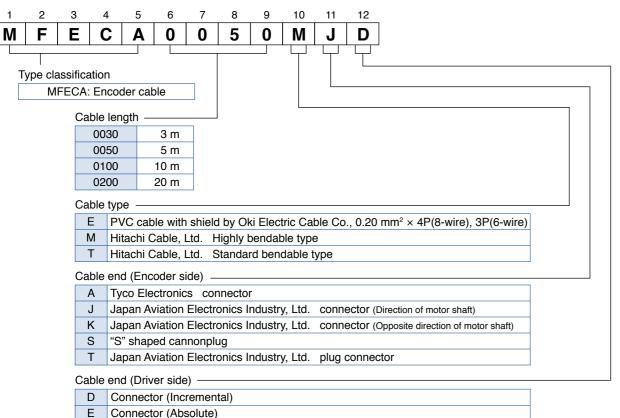
· Specifications of Built-in Holding Brake

Motor series	Motor output	Static friction torque N·m	Rotor inertia × 10 ⁻⁴ kg·m²	Engaging time ms	Releasing time ms	Exciting current DC A (at cool-off)	Releasing voltage DC V Exciting voltage DC V	Permissible work (J) per one braking		Permissible angular acceleration rad/s²
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
MSMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	47
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	750 W(400 V)	2.5 or more				0.7				
MSME	1.0 kW, 1.5 kW, 2.0 kW	7.8 or more	0.33	50 or less	15 or less (100)	0.81	2 V or more	392	490	10000
	3.0 kW	11.8 or more		80 or less			24 ±2.4			10000
	4.0 kW, 5.0 kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200	
	400 W(400 V), 600 W(400 V)	2.5 or more		50 or less	15 or less	0.7		392	490	10000
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	
	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less 0.79	2 V or more	1176	1500		
MDME	3.0 kW	16.2 or more		110 or less	(130)	0.9	24 ±2.4	1470	2200	
	4.0 kW, 5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000
	11.0 kW, 15.0 kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000
	1.5 kW	7.8 or more	4.7	80 or less	35 or less	0.83	2 V or more	1372	2900	
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	0.75	24 ±2.4	1470	1500 10	10000
	4.5 kW	31.4 or more	0.75	100 01 1033	100 01 1033	0.73	24 ±2.4	1470	2200	
	0.9 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79		1176	1500	10000
MGME	2.0 kW	24.5 or more		80 or less	25 or less (200)	1.3	2 V or more			5440
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	24 ±2.4	1372	2900	0110
	4.5 kW, 6.0 kW				50 or less					5000
MHMD MSMJ	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	1 V or more	137	44.1	30000
MHMJ	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	1.0 kW	4.9 or more	1.05	80 or less	70 or less (200)	0.59		588	780	10000
мнме	1.5 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79	2 V or more	1176	1500	10000
	2.0 kW∼5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3	24 ±2.4	1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000

- Releasing time values represent the ones with DC-cutoff using a varistor.
 Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)
- · Above values (except static friction torque, releasing voltage and excitation current) represent typical values.
- Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.
- Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

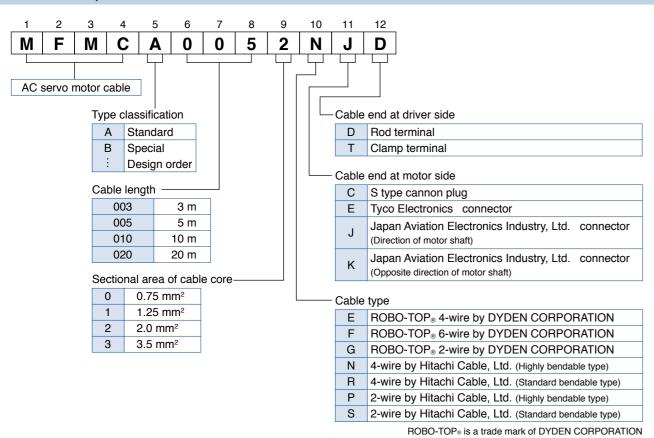
Options

Encoder Cable



Motor Cable, Brake Cable

M Connector (MSMD, MHMD)



Specifications of Motor connector

When the motors of <MSMD, MHMD, MSMJ, MHMJ> are used, they are connected as shown

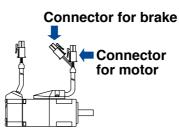
Connector: Made by Tyco Electronics (The figures below show connectors for the motor.)

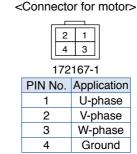
Connector for encoder

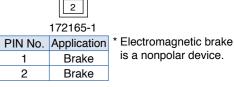
		,		PIN No.	Application
3	2	1]	1	NC
	4		2	PS	
			J	3	PS
172168-1 20-bit Incremental				4	E5V
				5	E0V
				6	FG(SHIELD)
	17	6 5	6 5 4 172168-1	172168-1	1 2 1 2 2 3 3 3 4 5 5 1 5 5 1 5 5 1 5 5 1 5 1 5 1 5 1 5

					PIN No.	Application		
	3 2 1		1	BAT+				
	6	- 			2	BAT-		
	9 8 7			3	FG(SHIELD)			
172169-1				1	4	PS		
					5	PS		
ı	7-DIL	ADS	solute	,	6	NC		
					7	E5V		
					8	E0V		
ng to NC.				9	NC			
Ŭ	9 10 110.							

<Remarks> Do not connect anything to N





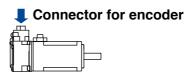


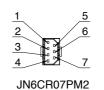
<Connector for brake>

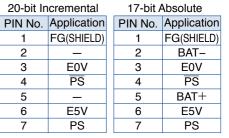
• When the motors of <MSME (50 W to 750 W (200 V))> are used, they are connected as shown

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

* Do not remove the gasket supplied with the junction cable connector. Securely install the gasket in place. Otherwise, the degree of protection of IP67 will not be guaranteed.

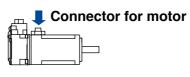


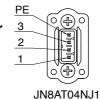




Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.



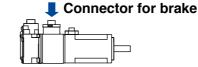


PIN No.	Applicatio
1	U-phase
2	V-phase
3	W-phase
PE	Ground

Tightening torque of the screw (M2) 0.085 N·m to 0.095 N·m (screwed to plastic)

* Be sure to use only the screw supplied with the connector, to avoid damage.

[Motor with brake]





PIN No.	Application	
1	Brake	* Electromagnetic brake is
2	Brake	a nonpolar device.

ar device. Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.

Options

MSMD 50 W to 750 W, MHMD 200 W to 750 W MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

For 20-bit incremental encoder (Without battery box)

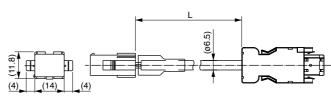
Encoder Cable

Part No.

* It doesn't correspond to IP65 and IP67.

MFECA0 * * 0EAM

[Unit: mm]



Compatible

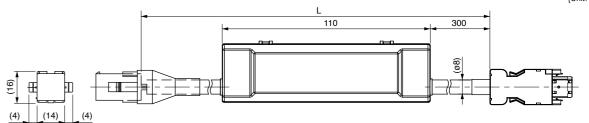
motor output

Title Part No.		Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAM
Connector (Motor side)	172160-1	Tugo Flootropico	10	MFECA0100EAM
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAE	Compatible motor output		50 W to 750 W, 200 W to 750 W,			
Specifications	For 17-bit absolute encoder (With battery box) *						

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately

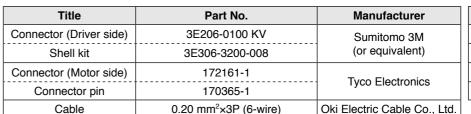
[Unit: mm]



Title Part No.		Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAE
Connector (Motor side)	172161-1	Tues Flactronies		MFECA0100EAE
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAE
Cable	0.20 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAD	Compatible motor output		50 W to 750 W, 200 W to 750 W,			
Specifications	For 17-bit incremental encoder (Without battery box)						

[Unit: mm]



3 MFECA0030EAD 5 MFECA0050EAD 10 MFECA0100EAD 20 MFECA0200EAD

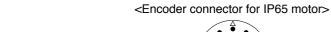
Part No.

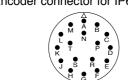
L (m)

• When the motors of <MSME (750 W(400 V), 1.0 kW to 5.0 kW), MDME, MGME, MHME> are used, they are connected as shown below.

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

Connector for encoder





<Encoder connector for IP67 motor>

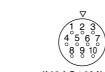
IP65 motor Connector for encoder (Large type)

Connector for encoder

IP67 motor

(Small type)

N/MS3102A20-29P



20-bit Incremental			17-bit <i>F</i>	Absolute
PIN No.	Application		PIN No.	Application
Α	NC		Α	NC
В	NC		В	NC
С	NC		С	NC
D	NC		D	NC
E F	NC		E	NC
F	NC		F	NC
G	E0V		G	E0V
Н	E5V		Н	E5V
J	FG(SHIELD)		J	FG(SHIELD)
K	PS		K	PS
L	PS		L	PS
М	NC		М	NC
N	NC		N	NC
Р	NC		Р	NC
R	NC		R	NC
S	NC		S	BAT-

JN2AS10ML3-R

PIN No. Application 1 E0V 2 NC	1	Application E0V
	1	E0V
2 NC		
	2	NC
3 PS	3	PS
4 E5V	4	E5V
5 NC	5	BAT-
6 NC	6	BAT+
7 <u>PS</u>	7	PS
8 NC	8	NC
9 FG(SHIELD)	9	FG(SHIELD)
10 NC	10	NC

<Remarks>

Do not connect anything to NC.

[6.0 kW or more] Connector for motor Connector for brake

<Motor>

JL04V-2E32-17PE-B-R

MDME 7.5 kW to 15.0 kW

PIN No. Application

N/MS3102A 14S-2P

MDME 7.5 kW to 15.0 kW

PIN No. Application

Brake

Brake

NC

NC

U-phase

V-phase

W-phase

Ground

MGME 6.0 kW

MHME 7.5 kW

С

D

<Brake>

MGME 6.0 kW

MHME 7.5 kW

D

Connector for motor/brake

<without Brake>

⊕ D

JL04V-2E20-4PE-B-R

1.0 kW to 2.0 kW

600 W (400 V),

1.0 kW to 2.0 kW

MSME 750 W(400 V),

MDME 400 W (400 V),

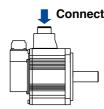
MHME 1.0 kW to 1.5 kW

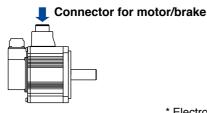
JL04HV-2E22-22PE-B-R

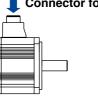
MSME 3.0 kW to 5.0 kW

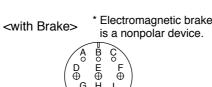
MGME 0.9 kW











JL04V-2E24-11PE-B-R [400 V]

[200 V]	
MSME	1.0 kW to 2.0 kW
MDME	1.0 kW to 2.0 kW
MFME*	1.5 kW
MGME	0.9 kW
MHME	1.0 kW to 1.5 kW

PIN No. Application

JL04V-2E20-18PE-B-R

[200 V]		[400 V
MSME	3.0 kW to 5.0 kW	MSME
	3.0 kW to 5.0 kW	
	2.5 kW, 4.5 kW	MDME
	2.0 kW to 4.5 kW	
MHME	2.0 kW to 5.0 kW	MFME
	_	l .

T BAT+

UKVV	MOME	750 W,
0 kW		1.0 kW to 5.0 kW
kW	MDME	400 W, 600 W,
5 kW		1.0 kW to 5.0 kW
0 kW	MFME*	1.5 kW to 4.5 kW
	MGME	0.9 kW to 4.5 kW
	MHME	1.0 kW to 5.0 kW

PIN No.	Application	
Α	Brake	
В	Brake	
С	NC	
D	U-phase	
Е	V-phase	
F	W-phase	
G	Ground	
Н	Ground	
	NC	

MDME 3.	G	
MGME 2.	0 kW to 4.5 kW	Н
	0 kW to 5.0 kW	Α
-	_	F
PIN No.	Application	I
Α	U-phase	R

0 kW to 5.0 kW			G	Diane
0 kW to 4.5 kW			Н	Brake
0 kW to 5.0 kW			Α	NC
5 KVV 10 5.0 KVV			F	U-phase
	Application		I	V-phase
	U-phase		В	W-phase
	V-phase		E	Ground
	W-phase		D	Ground
	Ground		С	NC

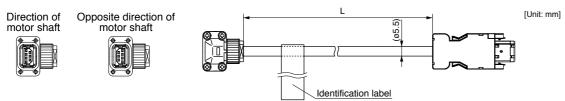
		•	· pilaci
Α	U-phase	В	W-phas
В	V-phase	E	Ground
С	W-phase	D	Ground
D	Ground	С	NC

* MFME is common to with or without brake.

<Remarks> Do not connect anything to NC.

Encoder Cable

* It doesn't correspond to IP65 and IP67.

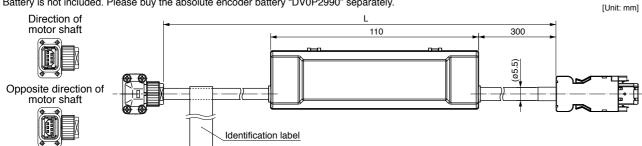


Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN6FR07SM1	Japan Aviation
Connector pin	LY10-C1-A1-10000	Electronics Ind.
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

	L (m)	Part No.(ex.)
	3	MFECA0030MJD
	5	MFECA0050MJD
	10	MFECA0100MJD
	20	MFECA0200MJD
ı		

Part N	MFECA0 * * 0MJE (Highly bendable type, Direction of motor shaft) MFECA0 * * 0MKE (Highly bendable type, Opposite direction of motor shaft) MFECA0 * * 0TJE (Standard bendable type, Direction of motor shaft) MFECA0 * * 0TKE (Standard bendable type, Opposite direction of motor shaft)	Compatible motor output	MSME 50 W to 750 W (200 V)
Specification	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

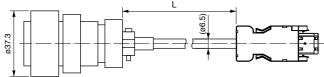


Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	tor side) JN6FR07SM1 Japan Aviation	
Connector pin	LY10-C1-A1-10000 Electronics Ind.	
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)		
3	MFECA0030MJE		
5	MFECA0050MJE		
10	MFECA0100MJE		
20	MFECA0200MJE		

[Unit: mm]

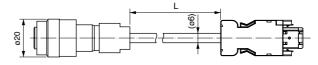
Part No.	MFECA0 * * 0ESD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP65 Motor)
Specifications	For 20-bit incremental encoder (Without battery box)		



<u> </u>		
Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation
Cable clamp	N/MS3057-12A	Electronics Ind.
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.

	L (m)	Part No.
	3	MFECA0030ESD
	5	MFECA0050ESD
	10	MFECA0100ESD
	20	MFECA0200ESD
1		

Part No.	MFECA0 * * 0ETD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V), MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)	
Specifications	For 20-bit incremental encoder (Without battery box)			



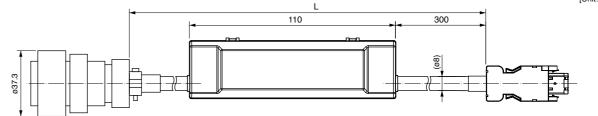
Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETD
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	MFECA0100ETD
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETD
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0ESE	Compatible motor output	0.9 kW to 5.0 kW (IP65 Motor)
Specifications	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

П	Init:	mn

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ESE
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	10	MFECA0100ESE
Cable clamp	N/MS3057-12A	Electronics Ind.	20	MFECA0200ESE
Cable	0.2 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part N	o. MFECA0 * * 0ETE	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)	
Specificat	ons For 17-bit absolute encod	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

is not included. Flease buy the a	absolute effcoder battery L	L		[Unit: mm]
	<u> </u>	110	300]
050			90	

Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETE
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	MFECA0100ETE
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETE
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

L (III)	Part No.
3	MFECA0030ETE
5	MFECA0050ETE
10	MFECA0100ETE
20	MFECA0200ETE

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Part No.

MFMCA0 * * 0EED

MSME 750 W(400 V), 1.0 kW to 2.0 kW,

MDME 400 W(400 V), 600 W(400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW

(All model 200 V and 400 V commonness)

[Unit: mm]

Applicable model

Title	Part No.	Manufacturer
Connector	172159-1	Tugo Floatronico
Connector pin	170366-1	Tyco Electronics
Rod terminal	AI0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	BOBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION

L (m)	Part No.
3	MFMCA0030EED
5	MFMCA0050EED
10	MFMCA0100EED
20	MFMCA0200EED
H	

	MFMCA0 * * 0NJD (Highly bendable type, Direction of motor shaft)		MSME 50 W to 750 W(200V)
Dort No.	MFMCA0 * * 0NKD (Highly bendable type, Opposite direction of motor shaft)	Applicable	MSME 200 W to 750 W(200V)
Part No.		model	MSME 50 W to 750 W(200V)
	MFMCA0 * * 0RKD (Standard bendable type, Opposite direction of motor shaft)		MSME 200 W to 750 W(200V)

Motor Cable (without Brake)

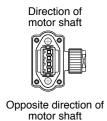
MSMD 50 W to 750 W, MHMD 200 W to 750 W

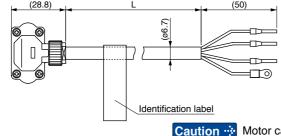
MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

* It doesn't correspond to IP65 and IP67.

[Unit: mm]

[Unit: mm]





Caution : Motor cable for opposite direction of motor shaft cannot be used with a motor 50W and 100W.

Title	Part No.	Manufacturer
Connector	JN8FT04SJ1	Japan Aviation
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.
Rod terminal	AI0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFMCA0030NJD
5	MFMCA0050NJD
10	MFMCA0100NJD
20	MFMCA0200NJD

Part No.	MFMCA0 * * 2ECD	Applicable model	MFME	1.5 kW(200 V)
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Ha	Dort No.	n.
037.3	(412.5)	
	. L . (50	" .

Title	Part No.	Manufacturer	
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation	
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	
Rod terminal	NTUB-2	LS T Mfg. Co. Ltd	
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	DYDEN CORPORATION	

L (m)	Part No.
3	MFMCA0032ECD
5	MFMCA0052ECD
10	MFMCA0102ECD
20	MFMCA0202ECD

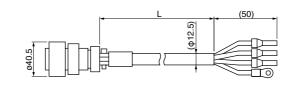
Applicable model

MFMCD0 * * 2ECD

Part No.

Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-4SE-EB-R	Japan Aviation	3	MFMCD0032ECD
Cable clamp	JL04-2022CK(14)-R	K(14)-R Electronics Ind.		MFMCD0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCD0102ECD
ylon insulated round terminal N2-M4		J.S.T Mfg. Co., Ltd.	20	MFMCD0202ECD
Cable	BOBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

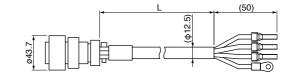
Part No. MFMCE0 * * 2ECD Applicable model MHME 2.0 kW (200 V and 400 V commonness)	
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Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCE0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202ECD
Cable	BOBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	MFME	1.5~kW(400~V),~2.5~kW(200~V~and~400~V~commonness)
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[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCF0032ECD
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCF0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCF0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCF0202ECD
Cable ROBO-TOP 600 V 2.0 mm ² 4-wire		DYDEN CORPORATION		

Part No.

MFMCA0 * * 3ECT

Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.

Cable

Options

A5 Family

Motor Cable (without Brake) * It doesn't correspond to IP65 and IP67.

MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kWApplicable model MHME 3.0 kW to 5.0 kW, MGME 2.0kW to 4.5 kW (All model 200 V and 400 V commonness)

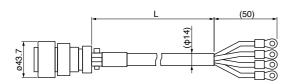
(50)			

Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCA0033ECT
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCA0203ECT

Part No.	N/I = N/I () 1 * * * * = (Applicable model	MFME 4.5 kW (200 V and 400 V commonness)
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[Unit: mm]

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCD0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCD0203ECT

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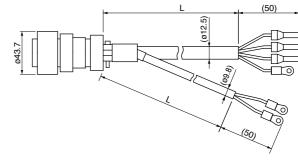
Part No.	MFMCA0 * * 2FCD	Applicable model	MDME MFME MHME	1.0 kW to 2.0 kW(200 V), 1.0 kW to 2.0 kW(200 V), 1.5 kW(200 V), 1.0 kW(200 V) to 1.5 kW(200 V) 0.9 kW(200V)
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Title		Part No.	Manufacturer	L (m)	Part No.
Connector JL04V-6A20-18SE-EB-R		JL04V-6A20-18SE-EB-R	Japan Aviation	3	MFMCA0032FCD
Cable clamp		JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0052FCD
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCA0102FCD
Nylon insulated	Earth	N2-M4	LS TMfg. Co. Ltd.		MFMCA0202FCD
round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.		

DYDEN CORPORATION

Part No.	Applicable model	MSME 750 W(400 V) to 2.0 kW(400 V), MDME 400 W(400 V) to 2.0 kW(400 V), MFME 1.5 kW(400 V), 2.5 kW(200 V/400 V), MGME 0.9 kW(400 V) MHME 1.0 kW(400 V), 1.5 kW(400 V), 2.0 kW(200 V/400 V)

[Unit: mm]



ROBO-TOP 600 V $0.75\ mm^2$ and

ROBO-TOP 600 V 2.0 mm² 6-wire

Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCE0032FCD
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.	5	MFMCE0052FCD
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCE0102FCD
Nylon insulated	Earth	N2-M4	LC T Mfa Co. Ltd	20	MFMCE0202FCD
round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.		
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 2.0 mm ² 6-wire	DYDEN CORPORATION		

Brake Cable

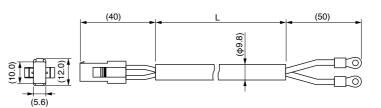
Part No. MFMCB0 * * 0GET

A5 Family

* It doesn't correspond to IP65 and IP67.

MSMD 50 W to 750 W, MHMD 200 W to 750 W MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

[Unit: mm]

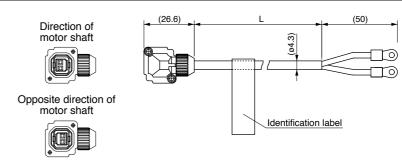


Applicable model

Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Tugo Floatronico	3	MFMCB0030GET
Connector pin	170366-1, 170362-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ² 2-wire	DYDEN CORPORATION	20	MFMCB0200GET

	MFMCB0 * * 0PJT (Highly bendable type, Direction of motor shaft)			
Part No.	MFMCB0 * * 0PKT (Highly bendable type, Opposite direction of motor shaft)	Applicable	MSME 50 W to 750 W	
Part No.	MFMCB0 * * 0SJT (Standard bendable type, Direction of motor shaft)	model	(200 V)	
	MFMCB0 * * 0SKT (Standard bendable type, Opposite direction of motor shaft)		(200 1)	

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JN4FT02SJMR	Japan Aviation	3	MFMCB0030PJT
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.	5	MFMCB0050PJT
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100PJT
Cable	AWG22 2-wire (ø4.3)	Hitachi Cable, Ltd.	20	MFMCB0200PJT

Part No.

MFMCA0 * * 3FCT

Applicable model

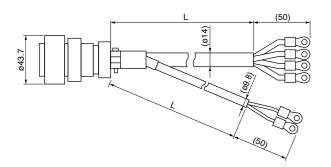
MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 4.5 kW, MHME 3.0 kW to 5.0 kW

MGME 2.0 kW to 4.5 kW

Motor Cable (with Brake)

* It doesn't correspond to IP65 and IP67.

(All model 200 V and 400 V commonness)



Title		Part No.	Manufacturer	L (m))
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	3	
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.	5	
Nylon insulated	Earth	N5.5-5	LC T Mfa Co Ltd	10	
round terminal Brake		N1.25-M4	J.S.T Mfg. Co., Ltd.	20	
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 3.5 mm ² 6-wire	DYDEN CORPORATION		

on	3	MFMCA0033FCT
nd.	5	MFMCA0053FCT
I td.	10	MFMCA0103FCT
Liu.	20	MFMCA0203FCT
RATION		

[Unit: mm]

Part No.

Cable for Interface

Part No. DV0P4360

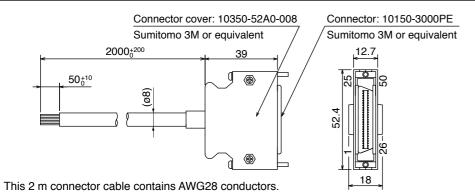


Table for wiring

Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color	Pin No.	color
1	Orange (Red1)	11	Orange (Black2)	21	Orange (Red3)	31	Orange (Red4)	41	Orange (Red5)
2	Orange (Black1)	12	Yellow (Black1)	22	Orange (Black3)	32	Orange (Black4)	42	Orange (Black5)
3	Gray (Red1)	13	Gray (Red2)	23	Gray (Red3)	33	Gray (Red4)	43	Gray (Red5)
4	Gray (Black1)	14	Gray (Black2)	24	Gray (Black3)	34	White (Red4)	44	White (Red5)
5	White (Red1)	15	White (Red2)	25	White (Red3)	35	White (Black4)	45	White (Black5)
6	White (Black1)	16	Yellow (Red2)	26	White (Black3)	36	Yellow (Red4)	46	Yellow (Red5)
7	Yellow (Red1)	17	Yel (Blk2)/Pink (Blk2)	27	Yellow (Red3)	37	Yellow (Black4)	47	Yellow (Black5)
8	Pink (Red1)	18	Pink (Red2)	28	Yellow (Black3)	38	Pink (Red4)	48	Pink (Red5)
9	Pink (Black1)	19	White (Black2)	29	Pink (Red3)	39	Pink (Black4)	49	Pink (Black5)
10	Orange (Red2)	20	_	30	Pink (Black3)	40	Gray (Black4)	50	Gray (Black5)

<Remarks>

Color designation of the cable e.g.) Pin-1 Cable color: Orange (Red1): One red dot on the cable The shield of this cable is connected to the connector shell but not to the terminal.

Interface Conversion Cable

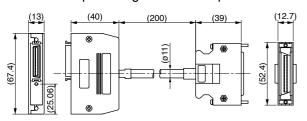
|--|

Interface cables for old product (XX series or V series) can be connected to the current product by using the connector conversion cable shown below.

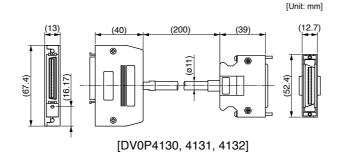
DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5II, A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5II, A5 series (A4, A series) for velocity control
DV0P4132	MINAS V → A5II, A5 series (A4, A series) for torque control

^{*} For details of wiring, contact our sales department.

Converts 36-pin configuration to 50-pin.



[DV0P4120, 4121]



Connector Kit

Connector Kit for Communication Cable (for RS485, RS232) (Excluding A5IE, A5E Series)

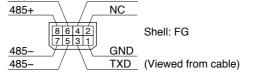
Part No. DV0PM20024

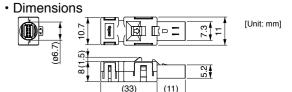
Components

[Unit: mm]

Title	Part No.	Manufacturer	Note
Connector	2040008-1	Tyco Electronics	For Connector X2 (8-pins)

• Pin disposition of connector, connector X2 RXD





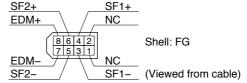
Connector Kit for Safety (Excluding A5IE, A5E Series)

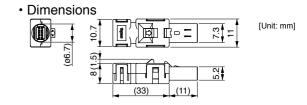
Part No. DV0PM20025

Components

<u> </u>			
Title	Part No.	Manufacturer	Note
Connector	2013595-1	Tyco Electronics	For Connector X3 (8-pins)

Pin disposition of connector, connector X3





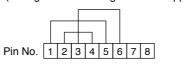
Safety bypass plug (Excluding A5IE, A5E Series)

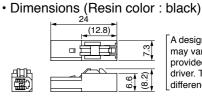
Part No. DV0PM20094

Components

Title	Part No.	Manufacturer	Note	
Connector	CIF-PB08AK-GF1R	J.S.T Mfg. Co., Ltd.	For Connector X3	

 Internal wiring (Wiring of the following has been applied inside the plug.)





A design and color may vary from the plug provided together with driver. There is no difference in function.

[Unit: mm]

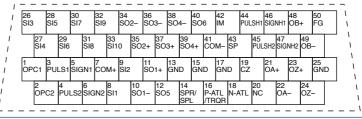
Connector Kit for Interface

Part No. DV0P4350

Components

Title	Part No.	Number	Manufacturer	Note
Connector	10150-3000PE	1	Sumitomo 3M	For Connector X4
Connector cover	10350-52A0-008	1	(or equivalent)	(50-pins)

• Pin disposition (50 pins) (viewed from the soldering side)



- 1) Check the stamped pin-No. on the connector body while making a wiring.
- 2) For the function of each signal title or its symbol, refer to the operating manual.
- 3) Do not connect anything to NC pins in the above table.

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V: Single row type)

Components

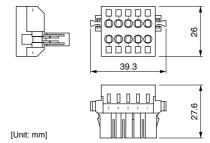
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfa Co Ltd	For Connector VA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20033 (For A-frame to D-frame 200 V: Double row type)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-C	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Dimensions



* When connection multiple axes in series, make sure the sum of the current value does not exceed the rated current (11.25 A) of DV0PM20033.

Remarks ...

When using drivers MDDKT5540 *** or MDDHT5540 *** in single-phase power supply, do not use DV0PM20033.

Driver part No.	Power supply	Rated input current
MADHT1105 *** MADKT1105 ***	Single phase 100 V	1.7 A
MADHT1107 *** MADKT1107 ***	Single phase 100 V	2.6 A
MADHT1505 *** MADKT1505 ***	Single phase/3-phase 200 V	1.6 A/0.9 A
MADHT1507 *** MADKT1507 ***	Single phase/3-phase 200 V	2.4 A/1.3 A
MBDHT2110 *** MBDKT2110 ***	Single phase 100 V	4.3 A
MBDHT2510 *** MBDKT2510 ***	Single phase/3-phase 200 V	4.1 A/2.4 A
MCDHT3120 *** MCDKT3120 ***	Single phase 100 V	7.6 A
MCDHT3520 *** MCDKT3520 ***	Single phase/3-phase 200 V	6.6 A/3.6 A
MDDHT3530 *** MDDKT3530 ***	Single phase/3-phase 200 V	9.1 A/5.2 A
MDDHT5540 *** MDDKT5540 ***	Single phase/3-phase 200 V	14.2 A/8.1 A

Part No. DV0PM20044 (For E-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-L	1	LOTMs On Its	For Connector VA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20051 (For D-frame 400 V)

· Components

•				
Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-M	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		FOI COIIIIECIOI XA

Part No. DV0PM20052 (For E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-L	1	LC TMfc Co Ltd	For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	FOI COITILECTOI XA

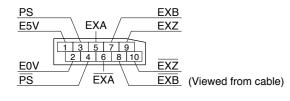
Connector Kit for External Scale (Excluding A5IIE, A5E Series)

Part No. DV0PM20026

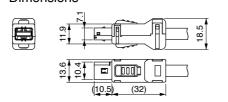
Components

Title	Part No.	Manufacturer	Note
Connector	MUF-PK10K-X	J.S.T Mfg. Co., Ltd.	For Connector X5 (10-pins)

• Pin disposition of connector, connector X5



Dimensions



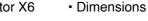
Connector Kit for Encoder

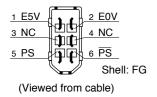
Part No.	DV0PM20010

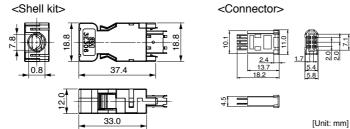
Components

<u> </u>				
Title	Part No.	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	For Connector X6	
Shell kit	3E306-3200-008	(or equivalent)	For Connector A6	

• Pin disposition of connector, connector X6







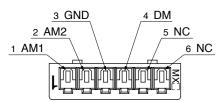
Connector Kit for Analog Monitor Signal

Part No.	DV0PM20031

Components

Title	Part No.	Number	Manufacturer	Note
Connector	510040600	1	Molex Inc	For Connector V7 (C pine)
Connector pin	500118100	6		For Connector X7 (6-pins)

• Pin disposition of connector, connector X7



Dimensions



[Unit: mm]

12.9±0.3

<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B



Connector Kit

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

A5 Family

Options

Connector Kit for Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	LC T Mfg. Co. Ltd	For Connector XD
Handle lever	MJFAT-0T	1	J.S.T Mfg. Co., Ltd.	FOI COIIIIeCIOI XD

Connector Kit for Regenerative Resistor Connection (E-frame)

Part No. DV0PM20045 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-L	1	LCTMfc Co Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note	
Connector	04JFAT-SAXGSA-M	1	LC T Mfa Co. Ltd	For Connector XC	
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	FOI COIIIIeCIOI AC	

Connector Kit for Motor Connection (Driver side)

Part No. DV0PM20034 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	06JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector XB
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20046 (For E-frame 200 V/400 V)

Components

Title	Part No.		Manufacturer	Note
Connector	03JFAT-SAXGSA-L	1	LC T Mfa Co Ltd	For Connector XB
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector AB

Part No. DV0PM20054 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note	
Connector	03JFAT-SAXGSA-M	1	LC T Mfg. Co. Ltd	For Connector VP	
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XB	

Connector Kit for Motor/Encoder Connection

Part No.		Applicable model	MSMD 50 W to 750 W, MHMD 200 W to 750 W (absolute encoder type)
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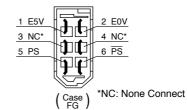
· Components

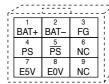
	Title	Part No.	Part No. Number Manufacturer		Note	
	Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 nine)	
[Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
	Connector	172161-1	1	Tyco Electronics	For Encoder cable	
	Connector pin	170365-1	9	Tyco Electronics	(9-pins)	
	Connector	172159-1	1	Tyco Electronics	For Motor cable	
	Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

• Pin disposition of connector, • Pin disposition of connector connector X6

for encoder cable

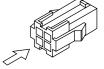
· Pin disposition of connector for motor cable











* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

Part No. D				50 W to 750 W,			
Part No.	DV0P4380	Applicable model	MSMJ	200 W to 750 W,	MHMJ	200 W to 750 W	
			(increm	ental encoder type)		

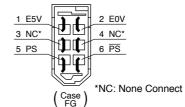
· Components

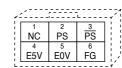
Title Part No. N		Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008 1 (or equivalent)		For Connector X6 (6-pins)		
Connector	172160-1	1	Tues Floatronies	For Encoder cable	
Connector pin	170365-1	6	Tyco Electronics	(6-pins)	
Connector	172159-1	1	Tugo Floatronico	For Motor cable	
Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

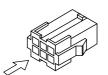
· Pin disposition of connector, · Pin disposition of connector connector X6

for encoder cable

· Pin disposition of connector for motor cable











Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

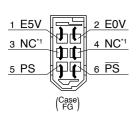
Part No. DV0PM20035 MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

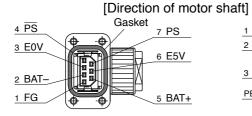
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	CV 1 Sumitomo 3M		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008		(or equivalent)		
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable	
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.	(7-pins)	
Motor connector	JN8FT04SJ1	1	Japan Aviation	For Motor cable	
Socket contact	ST-TMH-S-C1B-3500	4	Electronics Ind.	(4-pins)	

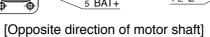
• Pin disposition of connector, • Pin disposition of connector connector X6 for encoder cable

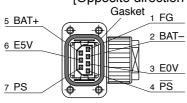
· Pin disposition of connector for motor cable

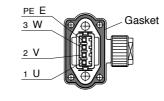


*1 NC: None Connect









* Pins 2 and 5 are left unused (NC) with an incremental encoder.

Remarks -- Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

Part No.		Applicable model	<ip67 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW, MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)</ip67>	Without brake
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector A6 (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A-20-4SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	FOI WIOLOT CADIE

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

		Annliachla	<ip65 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW</ip65>	Without
Part No.	DV0P4310		MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW	brake

Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	FOI Elicodel Cable
Motor connector	N/MS3106B20-4S	1	Japan Aviation	For Motor cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For woldi cable

Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For word cable

		<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>\\/ithout</th></ip65>	notor>			\\/ithout
Part No.	Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	Without brake
	liiouci	MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 4.5 kW	Diake

Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector A6 (6-pins)
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor Cable

Part No.	DV0PM20038	Applicable model	<ip67 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MFME 1.5 kW (Common to with/ without brake), MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip67>	With brake
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Components

•				
Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector A6 (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor coble
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Part No.		Applicable model	<ip65 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip65>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Freeder cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable
Motor connector	N/MS3106B20-18S	1	Japan Aviation	For Mater cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	0100 KV 1 Sumitomo 3M		For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins	
Encoder connector	coder connector JN2DS10SL1-R		Japan Aviation	Fau Francisco de la cabile	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector JL04V-6A24-11SE-EB-R		1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2428CK(17)-R	8CK(17)-R 1 Electronics Ind.		FOI WIGGO CADIE	

Part No.		Applicable model	<ip65 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 3.0 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 3.0 kW</ip65>	With brake
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Components

•					
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	oder connector N/MS3106B20-29S		Japan Aviation	For Francis askin	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector N/MS3106B24-		1	Japan Aviation	FaceMalacashia	
Cable clamp	N/MS3057-16A	1	Electronics Ind.	For Motor cable	

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Components

Components					
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1 Japan Aviation		For Motor cable	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For wolor cable	

^{*} Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

art No.		A mmlinable	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</ip67>	With brake	
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	1 Sumitomo 3M		
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Freeder coble	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Droke cable	
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake cable	

^{*} Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

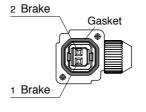
Part No.	DV0PM20040	Applicable model	MSME 50 W to 750 W
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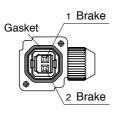
Components

Title	Part No.	Number	Manufacturer	Note	
Connector	JN4FT02SJM-R	1	Japan Aviation	For brake cable	
Socket contact	ST-TMH-S-C1B-3500	2	Electronics Ind.	For brake cable	

• Pin disposition of connector for brake cable

[Direction of motor shaft] [Opposite direction of motor shaft]





<Remarks>

Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

<Remarks>

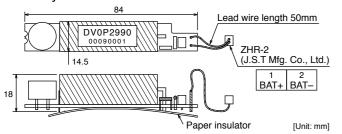
• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Mounting Bracket

Battery for Absolute Encoder

Part No. DV0P2990

· Lithium battery: 3.6 V 2000 mAh



<Caution>

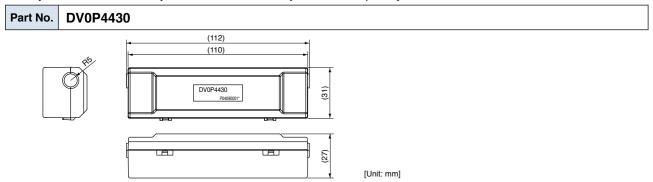
Battery for Absolute Encoder

* A5IIE, A5E series does not support to absolute encoder.

This battery is categorized as hazardous substance, and you may be required to present an application of hazardous substance when you transport by air (both passenger and cargo airlines).

Battery Box for Absolute Encoder *

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.



When waking a cable for 17-bit absolute encoder by yourself

When you make your own cable for 17-bit absolute encoder, connect the optional battery for absolute encoder, DV0P2990 as per the wiring diagram below. Connector of the battery for absolute encoder shall be provided by customer as well.

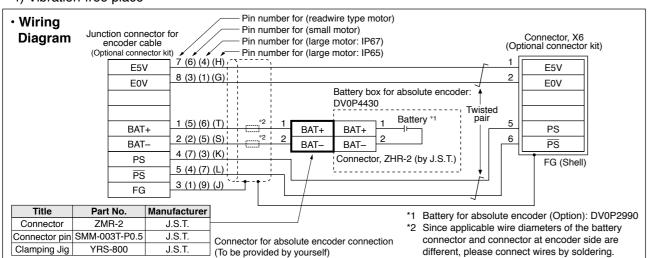
<Caution>

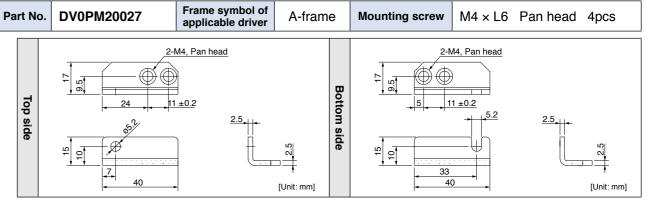
Install and fix the battery securely. If the installation and fixing of the battery is not appropriate, it may cause the wire breakdown or damage of the battery.

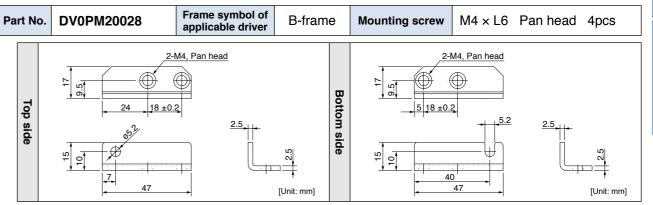
Refer to the instruction manual of the battery for handling the battery.

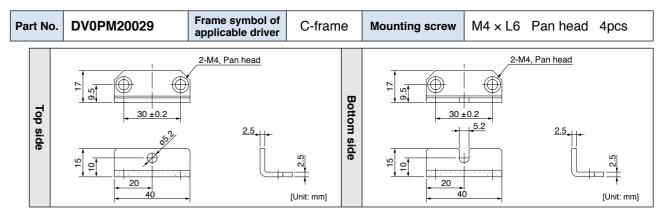
Installation Place of Battery

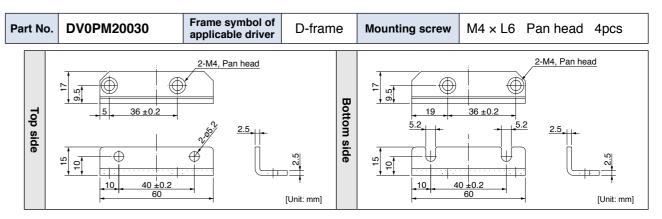
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable gas, grinding oil, oil mist, iron powder or chips and etc.
- 3) Well-ventilated and humid and dust-free place.
- 4) Vibration-free place











For E, F and G-frame, it is possible to make both a front end and back end mounting by changing the mounting direction of L-shape bracket (attachment).

temperature of built-in thermal protector

Activation

140±5 °C **B-contact** Open/Close capacity

130 (resistance load) 1 A 125 VAC 6000 times 80

0.5 A 250 VAC 10000 times

780

Rated power

(reference) *1

Free air

W

10

10

17

17

40

52

35

65

with fan

1 m/s W

25

25

50

190

16 _ *3 16

1140

Manufacturer : Iwaki Musen Kenkyusho *1 Power with which the driver can be used without activating the built-in thermal protector.

External Regenerative Resistor

Manufacturer's

part No.

RF70M

RF70M

RF180B

RF180B

RF240

RH450F

RF240

RH450F

RH450F × 6

RH450F × 6

Part No.

DV0P4280

DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285

DV0PM20048

DV0PM20049

DV0PM20058

DV0PM20059

A built-in thermal fuse and a thermal protector are provided for safety.

The circuit should be so designed that the power supply will be turned off as the thermal protector operates.

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit, power supply voltage or load.

Specifications

Weight

kg

0.1

0.1

0.4

0.2

0.5

1.2

0.5

1.2

cable core

outside

diameter

mm

Ф1.27

AWG18

stranded

wire

__ *2

_ *2

Resistance

Ω

50

100

25

50

30

20

120

80

3.3

13.3

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed 100 °C.

Attach the regenerative resistor to a nonflammable material such as metal.

Cover the regenerative resistor with a nonflammable material so that it cannot be directly touched.

Temperatures of parts that may be directly touched by people should be kept below 70 °C.

*2 Terminal block with screw tightening torque as shown below.

T1, T2, 24 V, 0 V, E: M4: 1.2 N·m to 1.4 N·m : M5 : 2.0 N·m to 2.4 N·m

Use the cable with the same diameter as the main circuit cable. (Refer to P.19).

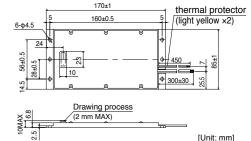
*3 With built-in fan which should always be operated with the power supply connected across 24 V and 0 V.

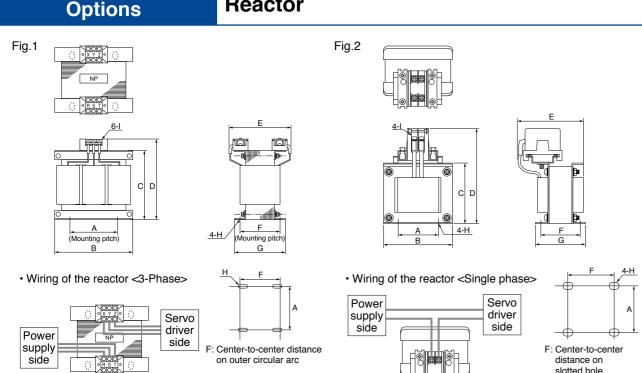
		Power supply							
Frame		Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-phase, 400 V					
	Α	DV0P4280	DV0P4281 (50 W, 100 W) DV0P4283 (200 W)	_					
	В	DV0P4283	DV0P4283						
	С	DV0P4282	DV0F4203						
	D		DV0P4284	DV0PM20048					
	Е		DV0P4284 × 2 in parallel or DV0P4285	DV0PM20049					
	F	_	DV0P4285 × 2 in parallel	DV0PM20049 × 2 in parallel					
	G		DV0P4285 × 3 in parallel	DV0PM20049 × 3 in parallel					
	Н		DV0P4285 × 6 in parallel or DV0PM20058	DV0PM20049 × 6 in parallel or DV0PM20059					

2-φ4.5 thermal protector (light yellow ×2) [Unit: mm]

DV0P4282, DV0P4283

DV0P4280, DV0P4281





[Unit: mm]

	Part No.	Α	В	С	D	E (Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
	DV0P220	65±1	125±1	(93)	136мах	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3
	DV0P221	60±1	150±1	(113)	155мах	130	60+3/-0	75±2	4-7φ×12	M4	4.02	5
Fig. 1	DV0P222	60±1	150±1	(113)	155мах	140	70+3/-0	85±2	4-7φ×12	M4	2	8
Fig.1	DV0P223	60±1	150±1	(113)	155мах	150	79+3/-0	95±2	4-7φ×12	M4	1.39	11
	DV0P224	60±1	150±1	(113)	160мах	155	84+3/-0	100±2	4-7φ×12	M5	0.848	16
	DV0P225	60±1	150±1	(113)	160 _{Max}	170	100+3/-0	115±2	4-7φ×12	M5	0.557	25
Fig.2	DV0P227	55±0.7	80±1	66.5±1	110мах	90	41±2	55±2	4-5φ×10	M4	4.02	5
	DV0P228	55±0.7	80±1	66.5±1	110мах	95	46±2	60±2	4-5φ×10	M4	2	8
	DV0PM20047	55±0.7	80±1	66.5±1	110мах	105	56±2	70±2	4-5Φ×10	M4	1.39	11

^{*} For application, refer to P.21 to P.28 and P.153 to P.154 "Table of Part Numbers and Options".

Harmonic restraint

Harmonic restraint measures are not common to all countries. Therefore, prepare the measures that meet the requirements of the destination country.

With products for Japan, on September, 1994, "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" and "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers' Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. We are pleased to inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver was modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

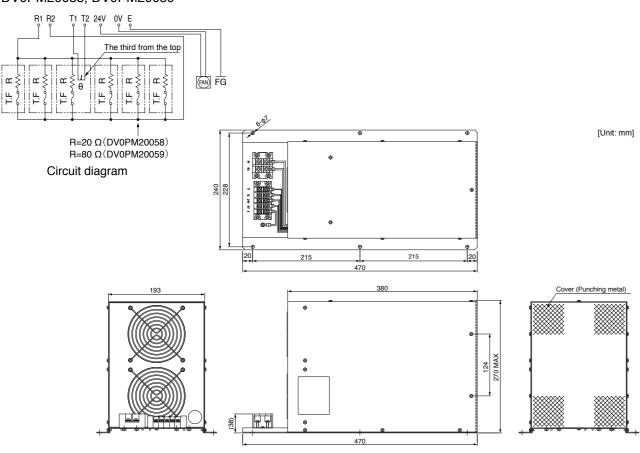
Surge Absorber for Motor Brake

DV0P4284, DV0PM20048 300 290 280 thermal protector (light yellow x2) (light yellow x2)

DV0P4285, DV0PM20049 300 278 4-0-4.5 450 (light yellow x2) 450 (Unit: mm)

External Regenerative Resistor

DV0PM20058, DV0PM20059



<Caution when using external regenerative resistor>

Regenerative resistor gets very hot.

Configure a circuit so that a power supply shuts down when built-in thermal protector of the regenerative resistor works. Because it is automatic reset thermal protector, please apply a self-holding circuit to the outside in order to maintain safety in case of sudden activation. During the failure of the driver, the surface temperature of the regenerative resistor may exceed the operating temperature before thermal protector starts to work.

Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.

- Be attached the regenerative resistance to non-combustible material such as metal.
- Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.
- Do not install the regenerative resistor near flammable materials.

	Motor	Part No.	Manufacturer	
MSMD	50 W to 750 W	Z15D271	SEMITEC Corporation	
MSMJ	200 W to 750 W	or TNR15G271K	or NIPPON CHEMI-CON	
	50 W to 750 W	INN 19G27 IK	CORPORATION	
MSME	750 W (400 V) 1.0 kW to 5.0 kW	Z15D151	SEMITEC Corporation	
	400 W (400 V), 600 W (400 V)			
MDME	1.0 kW to 3.0 kW	NVD07SCD082	KOA Corporation	
	4.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation	
	11 kW, 15 kW			
MFME	1.5 kW	NVD07SCD082	KOA Corporation	
IVIFIVIE	2.5 kW, 4.5 kW			
MGME	0.9 kW to 6.0 kW	Z15D151	SEMITEC Corporation	
MHMD MHMJ	200 W to 750 W	Z15D271 or TNR15G271K	SEMITEC Corporation or NIPPON CHEMI-CON CORPORATION	
NALINAE	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation	
MHME	2.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation	

List of Peripheral Equipments

Manufacturer	Tel No. / Home Page	Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm	
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html	Surge absorber for holding brake
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/	
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	Noise filter for signal lines
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Japan Aviation Electronics Industry, Ltd.	+81-3-3780-2717 http://www.jae.co.jp/e-top/index.html	
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	
J.S.T. Mfg. Co., Ltd.	+81-45-543-1271 http://www.jst-mfg.com/index_e.php	Connector
Sumitomo 3M	+81-3-5716-7290 http://solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/	
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable
DR. JOHANNES HEIDENHAIN GmbH	+81-3-3234-7781 http://www.heidenhain.de/de_EN/company/contact/	
Fagor Automation S.Coop.	+34-943-719-200 http://www.fagorautomation.com	
Magnescale Co., Ltd.	+81-463-92-7971 http://www.mgscale.com/mgs/language/english/	External scale
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/	External scale
Nidec Sankyo Corporation	+81-3-5740-3006 http://www.nidec-sankyo.co.jp/	
Renishaw plc	+44 1453 524524 www.renishaw.com	
Schaffner EMC, Inc.	+81-3-5712-3650 http://www.schaffner.jp/	Naiss Ch.
TDK-Lambda Corporation	+81-3-5201-7140 http://www.tdk-lambda.com/	Noise filter

^{*} The above list is for reference only. We may change the manufacturer without notice.

Compact Servo Only for Position Control.

Ultra compact position control type

MINAS E Series



Best Fit to Small Drives

- Further evolution in down-sizing, by 47 % in size. (Note)
- Exclusively designed for position control.

(Note) Compared to MUDS043A1



Easy to Handle, Easy to Use

- DIN-rail mounting unit (option) improves handling/installation.
- User-friendly Console makes the setup easy.
- High functionality Real-Time Auto-Gain Tuning enables adjustment-free operation.



High-Speed Positioning with Resonance Suppression Filters

- Built-In notch filter suppresses resonance of the machine.
- Built-in adaptive filter detect resonance frequency and suppress vibration.

4

Smoother operation for Low Stiffness Machine

Damping control function suppresses vibration during acceleration/deceleration

•	u	•	•	C	•	•	3	

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Features

Lasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

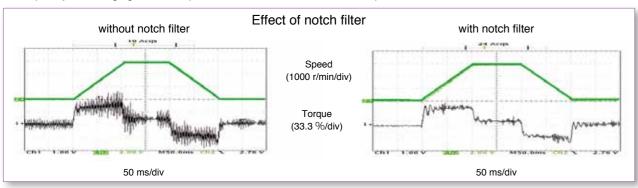
?. Further Reduction of Vibration

Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain tuning.
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.

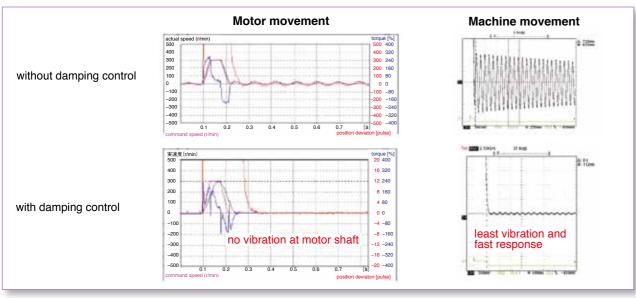
Notch filter (Note1)

- 1-channel notch filter is equipped in the driver independent from adaptive filter.
- Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise of the machine which has multiple resonance points can be expected.



Damping control (Note1)

You can suppress vibration occurring at both starting and stopping in low stiffness machine, by manually setting up vibration frequency in 0.1 Hz unit. Note) Only applies to manual adjustment



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(Note1) Select at positioning action mode

- At high speed positioning mode (Pr02=0) Select either one of notch filter, damping control or high-functionality real-time auto- gain tuning.
 Not possible to use them all at the same time.
 Adaptive filter cannot be used.
- At high-functionality positioning mode (Pr02=1) All of notch filter, damping control, high-functionality real-time auto-gain tuning and adaptive filter can be used at the same time.

3. Further Flexibility and Multiplicity

Console (Option)

- You can set up parameters, copy and make a JOG run.
- Convenient for maintenance at site.
- Refer to P.241, Options.

Command control modes

- Offers 2 command modes, "Position control" and "Internal velocity control".
- You can make a 4-speed running at preset values with parameter at internal velocity control mode.

Inrush current suppressing function

- Inrush suppressing resistor, which prevent the circuit breaker shutdown of the power supply caused by inrush current at power-on, is equipped in this driver.
- Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give load to the power line.

Regeneration discharging function

- Discharges the regenerative energy with external resistor, where energy is generated while stopping the load with large moment of inertia, or use in up-down operation, and is returned to the driver from the motor.
- No regenerative resistor is installed in the driver.
- It is highly recommended to install an external regenerative resistor (option).

Built-in dynamic brake

- You can select the dynamic brake action which short the servo motor windings of U, V and W, at Servo-OFF, CW/ CCW over- travel inhibition, power shutdown and trip.
- You can select the action sequence depending on the machine requirement.

Setup support software (Option)

With the setup support software, "PANATERM" via RS232 / RS485 communication port, you can monitor the running status of the driver and set up parameters. Note) Refer to P.236 for setup support software.

Key-way shaft and tapped shaft end

- Easy pulley attachment and easy maintenance
- Attache screw to the tapped shaft to prevent key or pulley from being pulled out.

Wave-form graphic function

- With the setup support software, "PANATERM", you can monitor the "Command speed", "Actual speed", "Torque", "Position deviation" and "Positioning complete signal".
- Helps you to analyze the machine and shorten the setup time

Note) Refer to P.236 for setup support software.

Frequency analyzing function

- You can confirm the response frequency characteristics of total machine mechanism including the servo motor with the setup support software, "PANATERM".
- Helps you to analyze the machine and shorten the setup time

Note) Refer to P.236 for setup support software.

Torque limit switching function

- You can select 2 preset torque limit value from external input.
- Use this function for tension control or press-hold control.

Conformity to CE and UL Standards







Subject		Standard conformed	
Motor	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to Low-Voltage
	EN50178	UL508C CSA22.2 No.14	Directives
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	
	EN61000-6-2 Immunity for Industrial Environments		
Motor	EC61000-4-2	Electrostatic Discharge Immunity Test] , ,
and driver	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	Conforms to references
unven	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives
	IEC61000-4-5	Lightening Surge Immunity Test	
	IEC61000-4-6 High Frequency Conduction Immunity Test		
	IEC61000-4-11	Instantaneous Outage Immunity Test	

IEC : International Electrotechnical Commission

EN : Europaischen Normen

EMC : Electromagnetic Compatibility

UL : Underwriters Laboratories

CSA: Canadian Standards Association

Pursuant to at the directive 2004/108/EC.article 9(2)

Panasonic Testing Centre Panasonic Service Europe,

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a division of Panasonic Marketing Europe GmbH Winsbergring 15.22525 Hamburg F.R.Germany

* When exporting this product, follow statutory provisions of the destination country.

Motor Line-up

 $\overline{\text{MINAS}\,E}$ series

			Rated rotational	Rotary	encoder	Brake	Gear			Features Applications	
	Motor series	Rated output (kW)	speed (Max. (speed) (r/min)	2500 P/r incremental	17bit absolute/ incremental	Holding	High precision	UL/ CSA	Enclosure		Applications
	MUMA										
Ultra low inertia		0.05 to 0.4 0.05 0.1 0.2 0.4	3000 (5000)	0	_	0	0	0	IP65 Except shaft throughhole and connector	Small capacity Ultra low inertia	SMT machines Inserters High repetitive positioning application

Model Designation

Servo Motor

M U M A 5 A Z P 1 S **

Symbol MUMA Ultra low inertia (50 W to 400 W)

Motor rated output

Symbol	Rated output
5A	50 W
01	100 W
02	200 W
04	400 W

Voltage specifications

Symbol	Specifications
1	100 V
2	200 V
Z	100 V/200 V common (50 W only)

Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Special specifications

Motor structure

	TI dotal o					
	Shaft	Holding	g brake	Oil seal		
Symbol	Key-way, center tap	without	with	without	with*	
S	•	•		•		
Т	•		•	•		

* Motor with oil seal is manufactured by order.

Design order

Symbol	Specifications
1	Standard

See P.227 for motor specifications

■ Motor with gear reducer

M U M A 0 1 1 P 3 1 N

Motor rated output Symbol Rated output Symbol Type 01 100 W Ultra low inertia MUMA (100 W to 400 W) 02 200 W 04 400 W

Voltage specifications					
Symbol	Specifications				
1	100 V				
2	200 V				

Rotary encoder specifications

,				
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

- Gear reduction ration, gear type

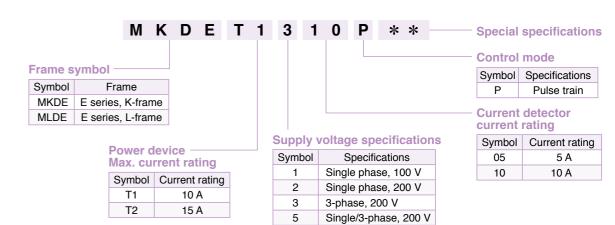
	Gear	Moto	r outpu	_	
Symbol	reduction ratio	100	200	400	Gear type
1N	1/5	•	•	•	Fau biala
2N	1/9	•	•	•	For high accuracy
4N	1/25	•	•	•	accuracy

Motor structure

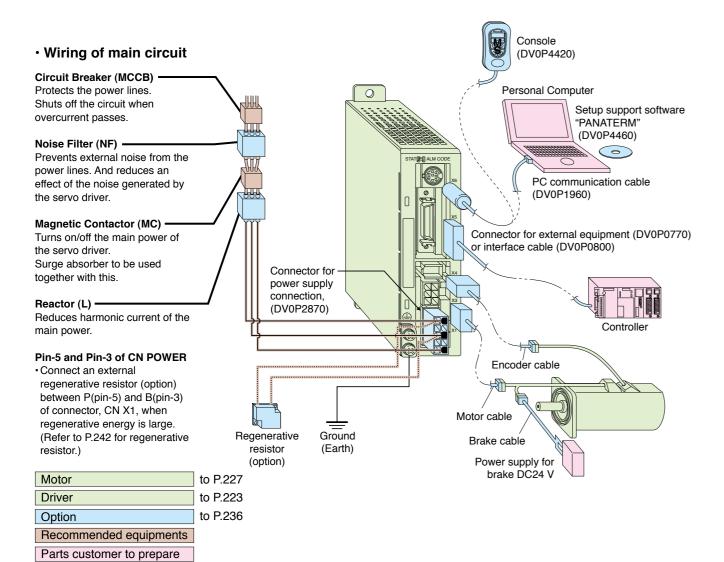
Cumbal	Shaft	Holding	g brake
Symbol	Key-way	without	with
3	•	•	
4	•		•

See P.232 for motor with gear reducer specifications

Servo Driver



See P.223 for driver specifications



List of recommended peripheral equipments

_	Мо	tor	Power															
Power supply	Series	Output	(at rated) output	Circuit Breaker (Rated current)	Noise Filter	Contactor (Contact Composition)	Wire diameter (L1, L2, L3, U, V and W)											
Single		50 W	0.3 kVA	(5 A)		10.4												
phase,		100 W	0.4 kVA	(5 A)		10 A (3P+1a)												
100 V		200 W	0.5 kVA	(10 A)		(0	(01 114)											
		50 W	0.3 19/0	(5 A)	(5 A)	(5 A)	0.3 kVA (5 A)											
Single		100 W	(5 A)						15 A	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2								
phase, 200 V	MUMA	200 W	0.5 kVA		DV0P4160	(3P+1a)	0.75 mm ² to 0.85 mm ² AWG18											
		400 W	0.9 kVA	(10 A)			AWGIO											
		50 W	0.01970															
3-phase		100 W	0.3 kVA	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	10 A	10 A					
200 V		200 W	0.5 kVA		(3P+1a)	(3P+1a)												
		400 W	0.9 kVA	(10 A)														

- * Select the single and 3-phase common specifications corresponding to the power supplies.
- To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, (9) marked) between noise filter and power supply.
- For details of the noise filters, refer to P.256.

<Remarks>

· Use a copper conductor cables with temperature rating of 60 °C or higher for main power connector and ground

Use a cable for ground with diameter of 2.0 mm² (AWG14) or larger.

Carrying page					
	Part No.	Carrying page			
Console				DV0P4420	241
Setup Support			Japanese		
Software, PANATERM			English	DV0P4460	236
RS232 Commu (for Connection				DV0P1960	241
Interface Cable	9			DV0P0800	241
Connector Kit f	for E	xteri	nal Equipment	DV0P0770	240
Connector Kit f	for M	otor	and Encoder	DV0P3670	239
Connector Kit f	for D	rive	Power Supply	DV0P2870	239
Encoder Cable	0EAM	238			
Motor Cable	0AEB	238			
Brake Cable MFMCB0 * :				0GET	238
Cable Set (3 m	i) ^{(Note}	3)	DV0P37300		238
Cable Set (5 m	i) ^{(Note}	3)	DV0P39200	238	
DIN Rail Moun	t Uni	t	DV0P3811		242
External Regenerative	100) V	50 Ω 10 W	DV0P2890	242
Resistor	200) V	100 Ω 10 W	DV0P2891	242
			100 V	DV0P227	
Reactor				DV0P228	243
			200 V	DV0P220	
Noise Filter				DV0P4160	256
		gle phase 0 V, 200 V	DV0P4190	256	
			hase 200 V	DV0P1450	
Noise Filter for Signal Wire DV0P				DV0P1460	256

(Note 3) Cable set (3 m) contains,

- 1) Interface cable: DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m) : MFMCA0030AEB
- 4) Connector kit for driver power supply connection: DV0P2870 Cable set (5 m) contains,
- 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m) : MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

■ Table of Part Numbers and Options

MINAS E Series

			2500P/r, Inc	remental				Ор	ption														
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable	I	Brake Cable Note) 2	External Regenerative Resistor	Reactor	Noise Filter											
Single	50	MUMA5AZP1 □	227	MKDET1105P	226 (K)						DV0P227												
phase	100	MUMA011P1 🗌	227	MKDET1110P	226 (K)					DV0P2890	DVUFZZI												
100 V	200	MUMA021P1 🗌	227	MLDET2110P	226 (L)						DV0P228												
	50	MUMA5AZP1 🗌	229	MKDET1505P	226 (K)																		
Single	100	MUMA012P1	229	MKDET1505P	226 (K)																		
phase 200 V	200	MUMA022P1	229	MLDET2210P	226 (L)		MEEO A O de de OE A A A	MEEO A O de de OE A A A	MEEOAO II II OFAMA	MEEO A O de de OE A M	MEEO A O de de OE A M		MEEO A O de de OE ANA	MEECAO	MEECAO* * OEAN		MFECA0 * * 0EAM MFMC/	MENACAC III III OA ED					D)/0D4400
	400	MUMA042P1	229	MLDET2510P	226 (L)	WIFECAU* * UEAW	MFMCAU* *UAEB	MFN	MCB0 * * 0GET			DV0P4160											
	50	MUMA5AZP1 🗌	229	MKDET1505P	226 (K)					DV0P2891	DV0P220												
	100	MUMA012P1	229	MKDET1505P	226 (K)																		
3-phase 200 V	200	MUMA022P1	229	MKDET1310P	226 (K)		.)	6 (K)															
200 V	400	MUMAO40D4	229	MLDET2510P	226 (L)																		
	400	MUMA042P1 □	229	MLDET2310P	220 (L)																		

- Note) 1 Motor model number suffix:
 - S: Key way with center tap, without brake
 - T: Kew way with center tap, with brake
- Note) 2 ** represents cable length. For details, refer to P.237.

	ī	7

es

Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

E Series

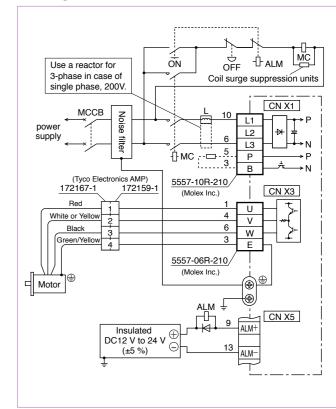
Wiring Diagram

Standard Wiring Example of Main Circuit

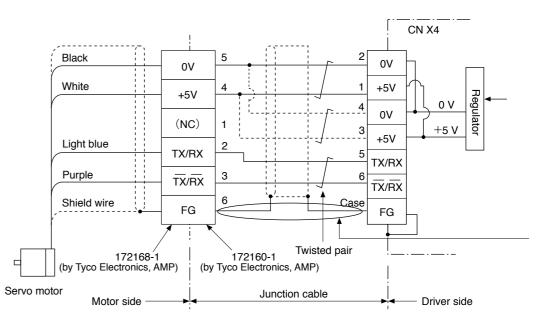
3-Phase, 200 V

HALM ME Coil surge suppression units CN X1 . Вмс --⊡--<u>ў</u> 5557-10R-210/ CN X3 (Molex Inc.) Red White or Yellow 2 Black 5557-06R-210/ CN X5 Insulated DC12 V to 24 V (±5 %) ALM-

■ Single Phase, 100 V / 200 V



Encorder Wiring Diagram



When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

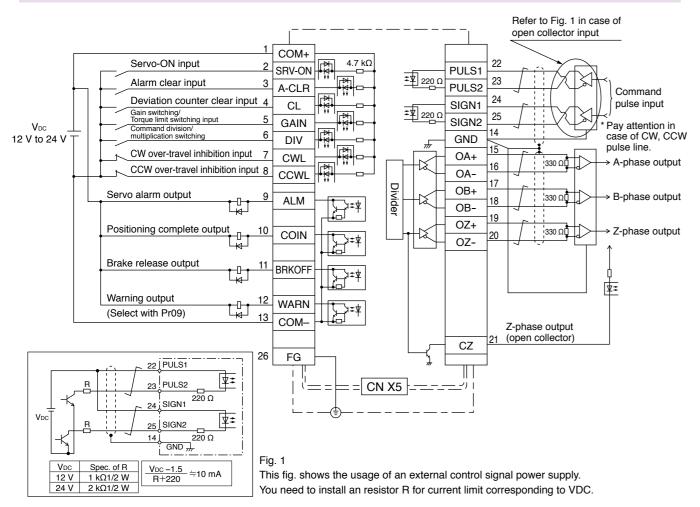
- 1) Refer the wiring diagram.
- 2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher bending resistance.
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

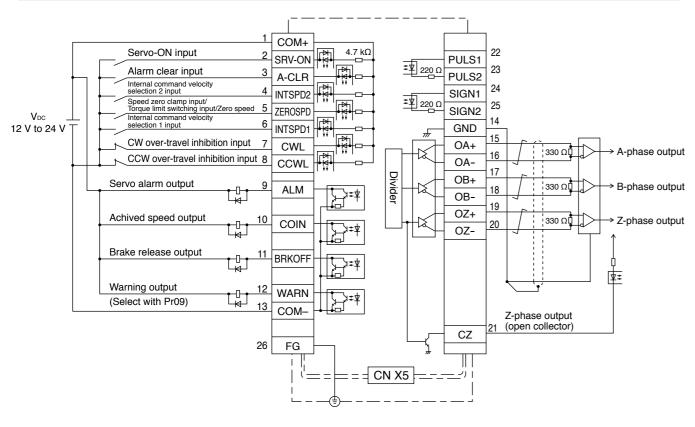
		0:	J 100 V		0:		
	Inpu	Single phase, 100 V			Single phase, 100 V to 115 V +10 % 50 Hz/60 Hz		
t pow	Input power	Single phase, 200 V			Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	er	3-ph	ase, 200 V		3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	Ē	Tem	perature		Operating: 0 °C to 55 °C, Storage: -20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>		
	Environment	Hum	nidity		Both operating and storage : 90 %RH or less (free from condensation)		
	nmei	Altitu	ıde		1000 m or lower		
	2	Vibra	ation		5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)		
	With	stand	voltage		Should be 1500 VAC (Sensed current: 20 mA) for 1 minute between Primary and Ground.		
	Cont	rol me	ethod		IGBT PWM Sinusoidal wave drive		
; _	Enco	der fe	eedback		2500 P/r (10000 resolution) incremental encoder		
)	န္ င	Inpu	t		7 inputs (1) Servo-ON, (2) Alarm clear and other inputs vary depending on the control mode.		
Į.	Control	Outp	out		4 outputs (1) Servo alarm, (2) Alarm, (3) Release signal of external brake and other outputs vary depending on the control mod		
Q	2. च	Inpu	t		2 inputs Supports both line driver I/F and open collector I/F.		
פֿ	Pulse	Outp	out		4 outputs Feed out the encoder pulse (A, B and Z-phase) in line driver. Z-phase pulse is also feed out in open collector.		
	Com	munic	cation function	RS232	1:1 communication to a host with RS232 interface is enabled.		
	Displ	ay LE	:D		(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)		
	Rege	enerat	tion		No built-in regenerative resistor (external resistor only)		
	Dyna	ımic b	rake		Built-in		
	Cont	rol mo	ode		3 modes of (1) High-speed position control, (2) Internal velocity control and (3) High-functionality positioning control are selectable with parameter.		
	Control input			(1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Deviation counter clear, (4) Gain switching, (5) Electronic gear switching			
		Conf	trol output		(1) Positioning complete (In-position)		
	Position control		Max. command frequency	l pulse	Line driver : 500 kpps, Open collector : 200 kpps		
	n contr	Pulse	Type of input po	ulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)		
	<u>o</u>	input	Electronic gear (Division/Multipli of command pu	cation	Setup of electronic gear ratio Setup range of (1-10000) $\times 2^{(0-17)}/(1-10000)$		
		Smoothing filter		r	Primary delay filter or FIR type filter is selectable to the command input.		
	Inte	Conf	trol input		(1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Selection 1 of internal command speed, (4) Selection 2 of internal command speed, (5) Speed zero clamp		
	rnal :	Conf	trol output		(1) Speed arrival (at-speed)		
	spee	Inter	nal speed comn	nand	Internal 4-speed is selectable with control input.		
,	Internal speed control	Soft-	-start/down func	tion	Individual setup of acceleration and deceleration are enabled, with 0 s to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.		
: _	<u>ठ</u>	Zero	-speed clamp		0-clamp of internal speed command with speed zero clamp input is enabled.		
		Auto-ga	Real-time		Estimates the load inertia in real-time in actual operation and sets up the gain automatically corresponding to the machine stiffness. Useable at (1) High-response position control, (2) Internal speed control and (3) High-functionality position control.		
		Auto-gain tuning	Normal mode		Estimates the load inertia with an action command inside of the driver, and sets up the gain automatically corresponding to setup of the machine stiffness. Useable at (1) High-response position control, (2) Internal speed control and (3) High-functionality position control.		
		inpu		_	Masking of the following input signal is enabled. (1) Over-travel inhibition, (2) Speed zero clamp, (3) Torque limit switching		
	Common	puls	sion of encoder f e	eedback	1 P/r to 2500 P/r (encoder pulses count is the max.).		
	on	Protective function	Hardware error		Over-voltage, under-voltage, over-speed over-load, over-heat, over-current and encoder error etc.		
		on	Software error		Excess position deviation, command pulse division error, EEPROM error etc.		
		Trac	eability of alarm	data	Traceable up to past 14 alarms including the present one.		
		Dam	ping control fun	ction	Manual setup with parameter		
		Setup	Manual		Console		
		등	Setup support s	software	PANATERM (Supporting OS: Windows98, Windows ME, Windows2000, and WindowsXP)		

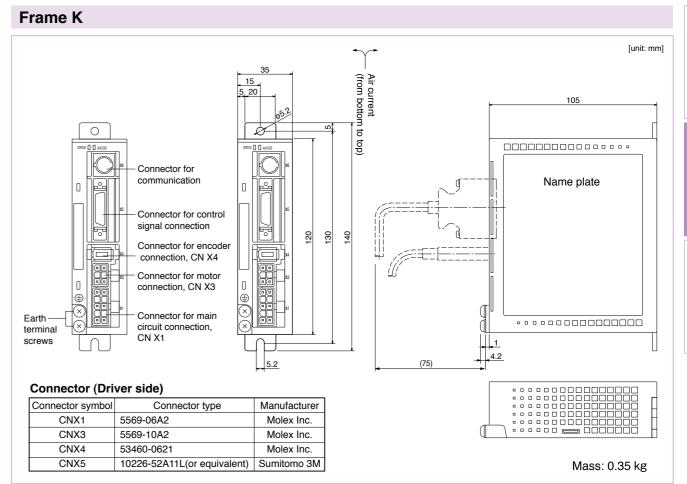
Control Circuit Standard Wiring Example

CN X 5 Wiring Example at Position Control Mode

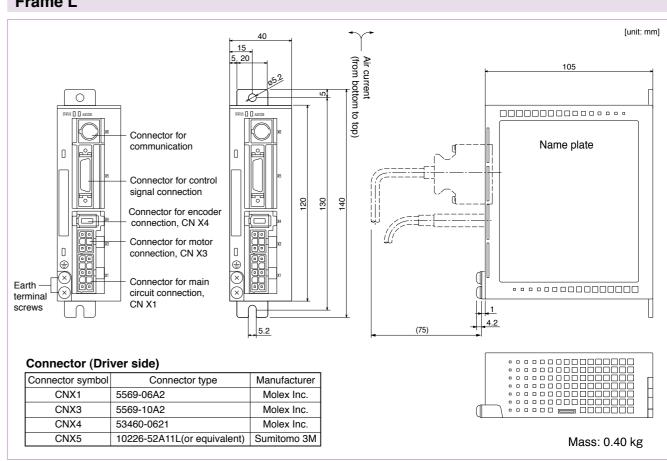


CN X 5 Wiring Example at Internal Velocity Control Mode





Frame L



Motor Specifications

100 V **MUMA** 50 W to 200 W

AC100 V 5AZP1 011P1 021P1 MUMA Motor model Model No. MKDET1105P MKDET1110P MLDET2110P Applicable driver Frame symbol Frame K Frame L Power supply capacity (kVA) 0.5 0.3 0.4 50 Rated output (W) 100 200 Rated torque (N·m) 0.16 0.32 0.64 Momentary Max. peak torque (N·m) 0.48 0.95 1.91 Rated current (Arms) 2.5 1.0 1.6 Max. current (Ao-p) 4.3 6.9 11.7 Regenerative brake Without option No limit Note)2 frequency DV0P2890 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia Without brake 0.021 0.032 0.10 of rotor (×10⁻⁴ kg·m²) 0.026 0.036 0.13 Recommended moment of inertia ratio 30 times or less of the load and the rotor Note)3 2500 P/r Rotary encoder specifications Incremental Resolution per single turn 10000 Protective enclosure rating IP65 (except rotating portion of output shaft and lead wire end) 0 °C to 40 °C (free from freezing), Storage : –20 °C to 65 °C Ambient temperature (Max.temperature guarantee 80 °C for 72 hours <nomal humidity>) Ambient humidity 85 %RH or lower (free from condensing) Environment Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust Installation location 1000 m or lower Altitude 49 m/s2 or less Vibration resistance Mass (kg), () represents holding brake type 0.4 (0.6) 0.5 (0.7) 0.96 (1.36)

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)					
Static friction torque (N m)	0.29	1.27			
Engaging time (ms)	25	50			
Releasing time (ms) Note)4	20 (30)	15 (100)			
Exciting current (DC) (A)	0.26	0.36			
Releasing voltage	DC 1 V or more				
Exciting voltage	DV 24 V ±10 %				

Permissible load				
	Radial load P-direction (N)	147	392	
During assembly	Thrust load A-direction (N)	88	147	
,	Thrust load B-direction (N)	117	196	
	Radial load P-direction (N)	68	245	
During operation	Thrust load A-direction (N)	58	98	
	Thrust load B-direction (N)	58	98	

For motor dimensions, refer to P.231, and for the diver, refer to P.226.

Model Designation

Design order Symbol Type

Ultra low inertia MUMA (50 W to 200 W)

Motor rated output Symbol Rated output 50 W 5A 01 100 W 02 200 W

Voltage specifications Symbol Specifications 100 V 100/200 V Z (50 W only)

1 : Standard

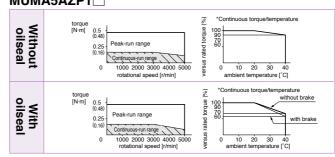
Motor Str	violor structure					
	Shaft	Holding	brake	Oil s	eal	
Symbol	Key-way, center tap	without	with	without	with	
S	•	•		•		
Т	•		•	•		

Rotary encoder specifications

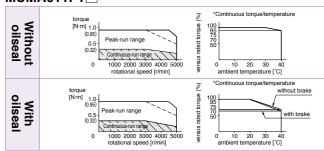
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

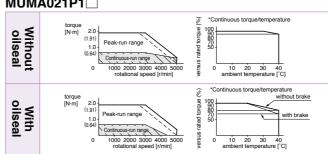
MUMA5AZP1



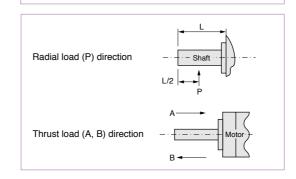
MUMA011P1



MUMA021P1



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well. Running range (Torque limit setup: 300 %) Running range (Torque limit setup: 200 %) Running range (Torque limit setup : 100 %



- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m =(load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC115 V (at 100 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer. 2. If the effective torque is within the rated torque, there is no limit in regenera-
 - tive brake 3. Consult us or a dealer if the load moment of inertia exceeds the specified

 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent). () represents the actually measured value using a diode (200 V, 1 A or

equivalent)

Motor Specifications

200 V **MUMA** 50 W to 400 W

Low inertia

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)					
Static friction torque (N · m)	0.29	1.27			
Engaging time (ms)	25	50			
Releasing time (ms) Note)4	20 (30)	15 (100)			
Exciting current (DC) (A)	0.26	0.36			
Releasing voltage	DC 1 V or more				
Exciting voltage	DV 24 V ±10 %				

Permissible I	Permissible load				
During assembly	Radial load P-direction (N)	147	392		
	Thrust load A-direction (N)	88	147		
,	Thrust load B-direction (N)	117	196		
	Radial load P-direction (N)	68	245		
During operation	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

For motor dimensions, refer to P.231, and for the driver, refer to P.226.

Note) Driver for 50 W and 100 W has a common power supply of single phase and 3-phase 200 V.

Driver for 200 W, the upper row is the power supply of 3-phase 200 V, and lower is the power supply of single-phase 200 V.

Driver for 400 W, the upper row is the power supply of 3-phase 200 V, and lower is the common power supply of single-phase and 3-phase 200 V.

Model Designation

M S

Symbol Type Ultra low inertia MUMA (50 W to 400 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W 04 400 W

Voltage specifications Symbol Specifications 2 200 V 100/200 V Z (50 W only)

Design order 1 : Standard

Motor structure

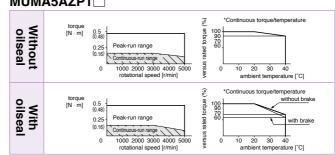
	Shaft	Holding	brake	Oil seal		
Symbol	Key-way, center tap	without	with	without	with	
S	•	•		•		
Т	•		•	•		

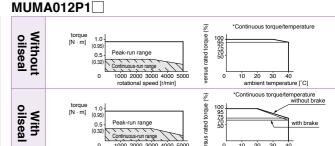
Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

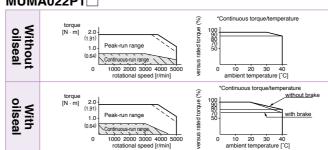
Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

MUMA5AZP1

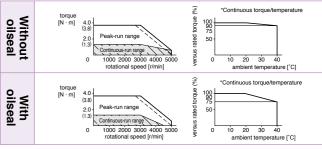


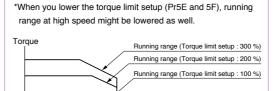


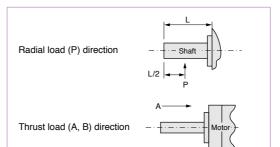
MUMA022P1











- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m = (load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC240 V (at 200 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/240) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 - 2. If the effective torque is within the rated torque, there is no limit in regenerative brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent).
 - () represents the actually measured value using a diode (200 V, 1 A or equivalent)

Encoder

connector

Type of

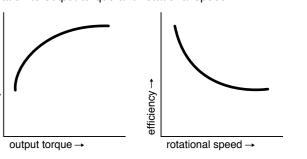
reducer

MINAS E Series Motors with Gear Reducer

Motor Types with Gear Reducer

Reduction	Мо	Motor output (W)							
ratio	100	200	400	reducer					
1/5	•	•	•						
1/9	•	•	•	For high precision					
1/25	•	•	•	precision					

Efficiency of the gear reducer shows the following inclination in relation to output torque and rotational speed.



Model No. Designation

e.g.) M U

Symbol Type Low inertia MUMA (100 to 400 W) Motor rated output Symbol Rated output Voltage specifications 01 100 W Symbol Specifications 02 200 W 100 V 04 400 W 200 V

Rotary en	coder specifications			
Symbol	Format	Pulse counts	Pulse counts	Wire
Р	Incremental	2500 P/r	10000	5

1/5 For High 2N 1/9 4N 1/25 Motor structure Holding brake

100

200

400

Motor types with gear reducer

Reduction

ratio

4

Specifications of Motor with Gear Reducer

	Motor type	MUMA			
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer			
	Composition of gear	Planetary gear			
Gear reducer	Gear efficiency	65 % to 85 %			
	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft			
	Composition of gear	Planetary gear			
	Mounting method	Flange mounting			
	Permissible moment of inertia of the load	10 times or smaller than reter moment of inartic of the mat-			
	(conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor			
	Protective structure	IP44 (at gear reducer)			
	Ambient temperature	0 °C to 40 °C			
	Ambient humidity	85 %RH (free from condensation) or less			
Environment	Vibration resistance	49 m/s ² or less (at motor frame)			
	Impact resistance	98 m/s² or less			

				MUMA series	(Ultra low inertia)	
Motor outpu	ut		50 W	100 W	200 W	400 W
Motor mode	əl	MUMA	5A□P1□	01□P1□	02□P1□	04□P1□
Rotary enco	oder spec	ifications	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental
		Without brake	75.5	92.5	96	123.5
LL		With brake	107	124	129	156.5
	LR		24	24	30	30
	S		8	8	11	14
	LA		48	48	70	70
	LB		22	22	50	50
	LC		42	42	60	60
	LE		2	2	3	3
	LF		7	7	7	7
	LH		34	34	43	43
	LZ		3.4	3.4	4.5	4.5
	LW		14	14	20	25
	LK		12.5	12.5	18	22.5
.,	ΚW		3h9	3h9	4h9	5h9
Key way	КН		3	3	4	5
-	RH		6.2	6.2	8.5	11
	TP		M3 × 6 (depth)	M3 × 6 (depth)	M4 × 8 (depth)	M5 × 10 (depth)
• 4 .		Without brake	0.40	0.50	0.96	1.5
Mass (kg)		With brake	0.60	0.70	1.36	1.9
Connector/l	Plug spec	ifications		refer to Options	s, P.239, P.240.	

MUMA 50 W to 400 W

Brake connector

(Key way dimensions)

□LC

Motor connector

LR LE

LL

* Dimensions are subject to change without notice. Contact us or a dealer for the latest information

[Unit: mm]

[Unit: mm]

<Cautions>

Reduce the moment of inertia ratio if high speed response operation is required.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Torque Characteristics

200 W

200 V

(33.3)

Motors with Gear Reduce

Table of Mo	tor w	ith Gea	ar Re	duce	r Spe	ecific	ations
	Motor					MU	JMA with g

	Motor					М	UMA with g	ear reduc	er				
Model Outpu		Reduction	Output	Rated speed	Max.		Peak max. torque	/motor + redu	of inertia cer/converted or shaft		ass	Permissible radial load	Permissible thrust load
		ratio	-	speeu	speed			w/o brake	w/ brake	w/o brake	w/ brake	radiai idad	tillust load
	(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J (× 10	⁻⁴kg·m²)	(k	g)	(N)	(N)
MUMA01□P□1N		1/5	75	600	1000	1.18	3.72	0.072	0.076	1.05	1.25	490	245
MUMA01□P□2N	100	1/9	80	333	555	2.25	6.86	0.0663	0.0703	1.05	1.25	588	294
MUMA01□P□4N		1/25	80	120	200	6.27	19.0	0.0645	0.0685	2.20	2.40	1670	833
MUMA02□P□1N		1/5	170	600	1000	2.65	8.04	0.218	0.248	1.68	2.08	490	245
MUMA02□P□2N	200	1/9	132	333	555	3.72	11.3	0.368	0.398	2.66	3.06	1180	588
MUMA02□P□4N		1/25	140	120	200	11.1	33.3	0.388	0.418	2.66	3.06	1670	833
MUMA042P□1N		1/5	340	600	1000	5.39	16.2	0.533	0.563	3.2	3.6	980	490
MUMA042P□2N	400	1/9	332	333	555	9.51	28.5	0.438	0.468	3.2	3.6	1180	588
MUMA042P□4N		1/25	332	120	200	26.4	79.2	0.470	0.500	4.7	5.1	2060	1030

Table of Motor Specifications/

The Combination of the Driver and the Motor

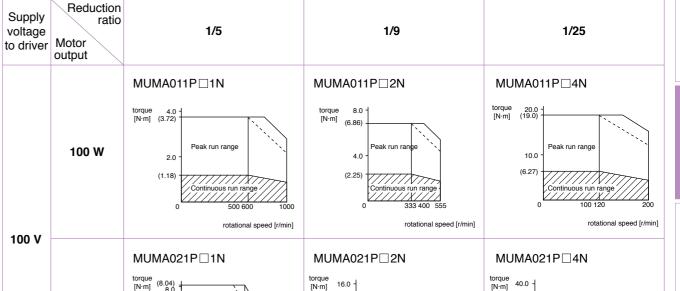
For dimensions, refer to P.235.

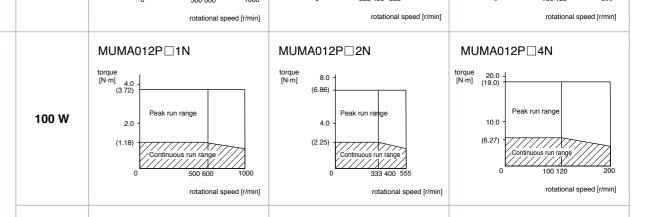
The Combination of the Driver and the Motor with Gear Reducer

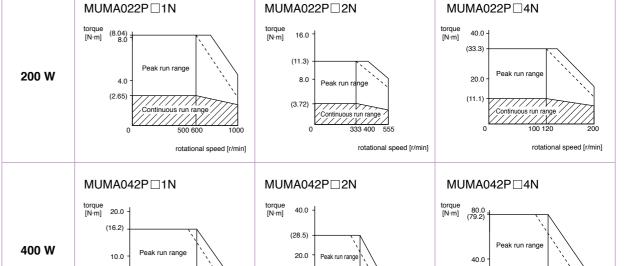
Combination w	ith driver	10	0 V	200 V			
Encodor	Motor	Part No. of motor Single phase, 100 V		Part No. of motor	3-phase, 200 V	Single phase, 200 V	
Encoder	Encoder output	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver	Part No. of driver	
	100 W	MUMA011P□□N	MKDET1110P	MUMA012P□□N	MKDET1505P	MKDET1505P	
2500 P/r	200 W	MUMA021P□□N	MLDET2110P	MUMA022P□□N	MKDET1310P	MLDET2210P	
Incremental 400 W			MI IMAGAOD DON	MLDET2510P	MLDET2510P		
	400 00	_	_	MUMA042P□□N	MLDET2310P	MILDE 125 TUP	

For dimensions, refer to P.235.

For High Precision (MUMA Series 100 W to 400 W)







Dotted line represents the torque at 10 % less supply voltage.

233

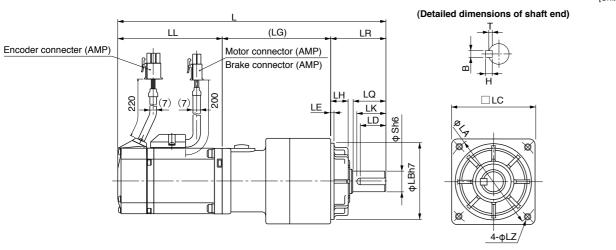
rotational speed [r/min]

rotational speed [r/min]

Setup Support Software

MUMA series with Gear Reducer

[Unit: mm]



Motor Dimensions

2500 P/r Encoder

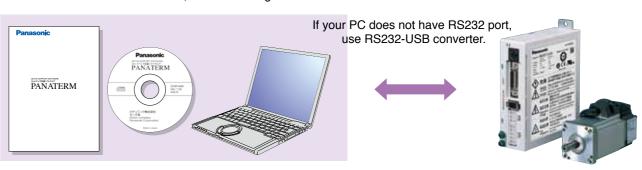
																[U	nit: mm]
Model	Motor output	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LK	(LG)	LE	Key way B×H×LD	Т
MUMA01 P 1N		1/5	192	92.5			20 52										
MOMPOT TIM		173	223.5	124	32	20		50	60	12	10	M5	18	67.5		4×4×16	2.5
MUMA01□P□2N	100 W	1/9	192	92.5	02	20	32	30	00	12	10	(Depth: 12)	10	07.5		IXIXIO	2.5
WOW/YOT - ET	100 44	173	223.5	124													
MUMA01□P□4N		1/25	234.5	92.5	50	30	78	70	90	90 19	17	M6	26	92	3	6×6×22	3.5
WOW/YOT		1/23	266	124	50	30	0 78	70	90		17	(Depth: 20)	20		٥	0.00.22	0.5
MUMA02□P□1N		1/5	200.5	96	32	20	20 52	50	60	12	10	M5	18	72.5		4×4×16	2.5
WOW/ YOZ - I - IIV		173	233.5	129	02 20	JŁ		00		10	(Depth: 12)	10	72.0		TATA 10	2.5	
MUMA02□P□2N	200 W	1/9	235.5	96										89.5			
WOW/ WELL	200 W	173	268.5	129								M6		03.5			
MUMA02□P□4N		1/25	246	96										100			
WOWN TOZET		1/25	279	129	50	30	78	70	90	19	17		26	100		6×6×22	3.5
MUMA042P□1N		1/5	263	123.5	50	00	70	70	50	15	.,	(Depth: 20)	20			UNUNEL	0.5
WOW TO IZI - IT			296	156.5										89.5			
MUMA042P□2N	400 W	1/9	263	123.5										05.5			
IVIOIVI/ 10721 LIZIV	400 00	1,3	296	156.5													
MUMA042P□4N		1/25	288.5	123.5	123.5	1 40	10 98	98 90	115	24	24 18	M8 (Depth: 20)	35	104	5	8×7×30	4
WOW TOTAL		1/25	321.5	156.5	U1	+0	30	30	113	24			33	104	3	0x1 X30	*

Upper column: without brake Lower column : with brake

Setup Support Software "PANATERM" for MINAS series AC Servo Motor & Driver

Part No. DV0P4460 (Japanese/English version)

The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A4 series, E series through the RS232 serial interface.



Basic Function

Parameter setup

- After a parameter is defined on the screen, it will be sent to the driver immediately.
- Once you register parameters you frequently use, they can be easily set up on the screen.

Monitoring Control Conditions

Monitor

- · Control conditions: Control mode, velocity, torque, error and warning
- Driver input signal
- · Load conditions: Total count of command/feedback pulses, Load ratio, Regenerative resistor load ratio

Alarm

- · Displays the numbers and contents of the current alarm and up to 14 error events in the past.
- · Clears the numbers and contents of the current alarm and up to 14 error events in the past.

Setup

Auto tuning

· Gain adjustment and inertia ratio measurement

Graphic waveform display

• The graphic display shows command velocity, actual velocity, torque, and error waveforms.

Absolute encoder setup

- · Clears absolute encoder at the origin.
- · Displays single revolution/multi-revolution data.
- · Displays absolute encoder status.

Analysis of Mechanical Operation Data

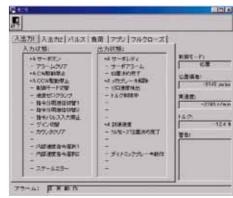
Frequency analysis

• Measures frequency characteristics of the machine, and displays Bode diagram.

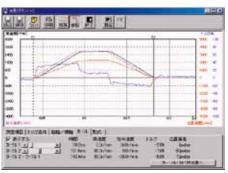
■ Can not use with A5 family.

HEROLDHICH - SPED. M.O.S. (HEROLD) HY. ADA-DED II MIGRA STAG 2 MINUS-TRACTOR D ROBBERSON 4 MINNODOWNERS 15 ##3+-#3+9-# 15 24-#2+9-#2453#\$\$

Parameter



Monitor



Graphic waveform display

[Personal computer] • CPU : Pentium 100MHz or more • Memory : 16 MB or more (32 MB recommended)

- · Hard disk capacity (vacancy of 25 MB or more recommended) · OS: Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version)
- Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

[Display] • Resolution : 640*480 (VGA) or more (desirably 1024*768) • Number of colors : 256 colors or more

[CD-ROM drive] · CD-ROM drive operable on the above-mentioned personal computer

C

Α

Type classification

A Standard

Design Oder

B Special

0

0

Encoder Cable

Ε

Cable

Cable Set (3 m)

Part No. DV0P37300

- 1) Interface cable : DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m) : MFMCA0030AEB
- Connector kit for driver power supply connection : DV0P2870

Cable Set (5 m)

Part No. DV0P39200

- 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m): MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

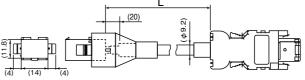
Encoder Cable

Part No. MFECA0 * * 0EAM

[Unit: mm]

[Unit: mm]

[Unit: mm]



Title	Part No.	Manufacturer		
Connector (Driver side)	3E206-0100KV	Sumitomo 3M		
Shell kit	3E306-3200-008	or equivalent		
Connector	172160-1	Tues Fleetrenies		
Connector Pin	170365-1	Tyco Electronics		
Cable	0.20 mm ² × 3P	Oki Electric Cable Co., Ltd.		

	L (m)	Part No.
	3	MFECA0030EAM
	5	MFECA0050EAM
	10	MFECA0100EAM
	20	MFECA0200EAM
+4		·

Motor Cable (ROBO-TOP_® 105 °C 600 V . DP)

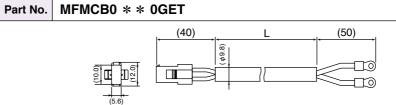
ROBO-TOP_® is a trade mark of DYDEN CORPORATION



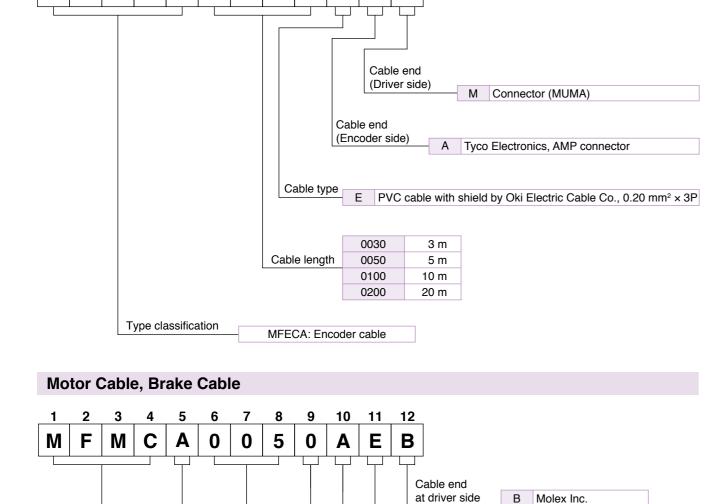
Title Part No.		Manufacturer	L (m)	Part No.
Connector	172159-1	Type Floatronics	3	MFMCA0030AEB
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCA0050AEB
Connector	5557-06R-210	Molex Inc	10	MFMCA0100AEB
Connector Pin	5556T	Molex IIIC	20	MFMCA0200AEB
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden CoLtd.		

Brake Cable (ROBO-TOP_® 105 °C 600V . DP)

 $\ensuremath{\mathsf{ROBO\text{-}TOP}}\xspace_{\circledcirc}$ is a trade mark of DYDEN CORPORATION



Title	Part No. Manufacturer		L (m)	Part No.
Connector	172157-1	Type Fleetrenies	3	MFMCB0030GET
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden Co.,Ltd.	20	MFMCB0200GET



Cable end at motor side

0

3

003

005

010

020

0.75 mm²

1.25 mm²

2.0 mm²

3.5 mm²

3 m

5 m

10 m

20 m

Cable type

Cross section of cable core

Cable length

AC servo motor cable

T Clamp terminal

E Tyco Electronics, AMP connector

ROBO-TOP_® is a trade mark of DYDEN CORPORATION

A ROBO-TOP® 4-wire (DYDEN CORPORATION)
G ROBO-TOP® 2-wire (DYDEN CORPORATION)

Ε

Α

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5

Cable part No. Designation

mily

Connector Kit for Power Supply Connection

Part No. DV0P2870

Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (10 pins)	5557-10R-210	1	Molex Inc.	For connector, CN X1
Connector pin	5556PBTL	6	iviolex IIIc.	(10 pins)

Pin configuration of connector CN X1

1	,					27
÷	10	9	8	7	6	H
i	L1	(NC)	L2	(NC)	L3	H
i	5	4	3	2	1	l i
i	Р	(NC)	В	(NC)	Е	li.



Recommended manual crimping tool (to be prepared by customer)

Part No.	Cable material		
57026-5000	UL1007		
57027-5000	UL1015		

<Cautions>

- 1. The above pin disposition is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.
- 3. Do not connect anything to pins marked "NC".

Connector Kit for Motor/Encoder Connection

Part No. DV0P3670 (Incremental 2500 pulse, 5-wire)

This option is required when you make your own encoder cable and motor cable. (Brake cable is required for brake.)

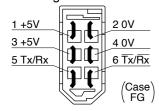
Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For connector, CN X4
Shell kit	3E306-3200-008	1	or equivalent	(6 pins)
Connector (6 pins)	172160-1	1	Tyco Electronics	For junction to encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6 pins)
Connector (4 pins)	172159-1	1	Tyco Electronics	For junction to motor power cable
Connector pin	170366-1	4	Tyco Electronics	(4 pins)
Connector (6 pins)	5557-06R-210	1	Molex Inc.	For connector, CN X3
Connector pin	5556PBTL	4	IVIOIEX INC.	(6 pins)

<Remarks>

We may use parts equivalent to the above for shell and connector cover.

Pin configuration of connector CN X4 plug



Recommended manual crimping tool (to be prepared by customer)

	J (1 1	,		
Title	Part No.	Manufacturer	Cable material	
For encoder cable junction	755330-1	Type Fleetrenies		
For motor power cable junction	755331-1	Tyco Electronics	_	
For Connector CN X3	57026-5000	Molex Inc.	UL1007	
For Connector CN X3	57027-5000	IVIOLEX ITIC.	UL1015	

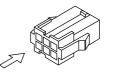
239

<Remarks>

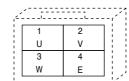
- 1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

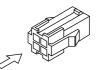
Pin configuration of encoder cable junction

ے۔]	
[1	2	3	-
	NC	TX/RX	TX/RX	į
Ī	4	5	6	i
	+5V	0V	FG	!

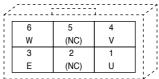


Pin configuration of motor power cable junction





Pin configuration of mating connector to CN X3 connector





<Cautions>

- 1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.

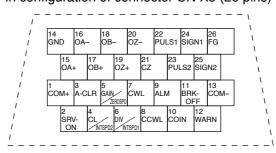
Connector Kit for External Peripheral Equipment

		-		
				_
	DVADATTA			
Part No.	DV0P0770			
110.	D 10: 0::0			

Parts composition

Title	Part No.		Manufacturer	Note
Connector	10126-3000PE	1	Sumitomo 3M	For connector, CN X5
Connector cover	10326-52A0-008	1	or equivalent	(26 pins)

Pin configuration of connector CN X5 (26 pins) (viewed from the soldering side)



<Cautions>

- 1. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.225 for symbols and functions of the above signals.

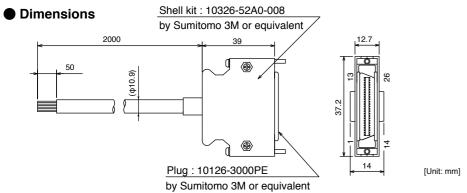
DIN Rail Mounting Unit/ External Regenerative Resistor

Interface Cable

Part No. DV0P0800 Cable of 2 m is connected.

Communication Cable/ Console

Interface Cable/



Wiring table

	_							
Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable
1	COM+	Orange (Red 1)	10	COIN	Pink (Black 1)	19	OZ+	Pink (Red 2)
2	SRV-ON	Orange (Black 1)	11	BRK-OFF	Orange (Red 2)	20	OZ-	Pink (Black 2)
3	A-CLR	Gray (Red 1)	12	WARN	Orange (Black 2)	21	CZ	Orange (Red 3)
4	CL/INTSPD2	Gray (Black 1)	13	COM-	Gray (Red 2)	22	PULS1	Gray (Red 3)
5	GAIN/ZEROSPD	White (Red 1)	14	GND	Gray (Black 2)	23	PULS2	Gray (Black 3)
6	DIV/INTSPD1	White (Black 1)	15	OA+	White (Red 2)	24	SIGN1	White (Red 3)
7	CWL	Yellow (Red 1)	16	OA-	White (Black 2)	25	SIGN2	White (Black 3)
8	CCWL	Yellow (Black 1)	17	OB+	Yellow (Red 2)	26	FG	Orange (Black 3)
9	ALM	Pink (Red 1)	18	OB-	Yellow (Black 2)			
	<u>-</u>	-		<u> </u>			<u> </u>	<u>-</u>

<Notes>

e. g. of Pin No. designation: Pin No. 1 Wire color is orange, and one red dot.

Pin No. 12 ... Wire color is orange, and two black dot.

The shield of this cable is not connected to a connector pin. To connect the shield to FG or GND at the driver side, use a connector kit for external device connection.

[Unit: mm]

Communication Cable (For Connection with PC)

Part No. DV0P1960 2000

Mini-DIN 8P

MD connector

Console

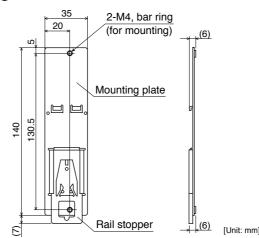
D-sub connector 9P

Part No. DV0P4420 M3 length 5 mm Tightening torque for Name plate the insert screw shall be 0.5 N·m or less MD connector Mini DIN-8P

DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

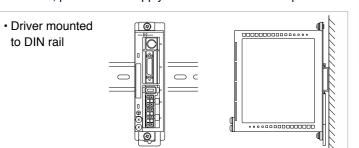


<Notes>

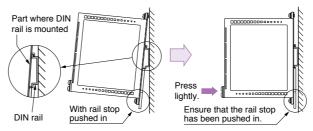
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<Cautions>

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.

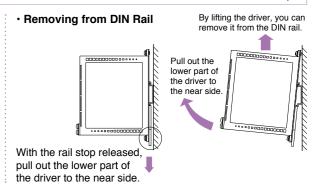


· How to Install



Hook the upper side of DIN rail mounting part on the DIN rail.

Press lightly the lower part of the main body of driver.

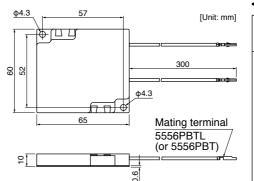


External Regenerative Resistor

		Specifi			
Part No.	Manufacturer's Part No.	Resistance	Rated power	Activation temperature of built-in fuse	Note (Input Power of drive)
		Ω	W	°C	
DV0P2890	45M03	50	10	137 ⁺³ ₋₂	Single phase, 100 V
DV0P2891	45M03	100	10	137 ⁺³ ₋₂	Single/3-phase, 200 V

Manufactured by Iwaki Musen Kenkyuusho Co., Ltd.

Dimensions



<Caution of when using external regeneration resistor>

Since it becomes high temperature, external regeneration resistor must be installed according to the contents shown below.

- · Attach to incombustibles, such as metal.
- · Install in the place which cannot touch directly by covering with incombustibles etc.
- · Do not install near the combustibles.

Although the thermal cutoff is built in external regeneration resistor, the skin temperature of regeneration resistor may become high exceeding the operating temperature of thermal cutoff by the time the thermal cutoff operates in amplifier

The thermal cutoff is for preventing ignition of the regeneration resistor in amplifier failure, and is not for controlling the skin temperature of resistor.

<Remarks>

Thermal fuse is installed for safety.

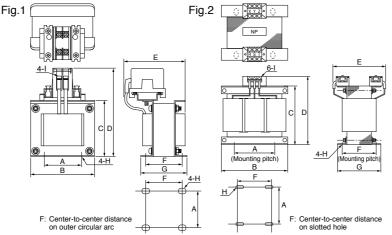
The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation. Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Please carry out air cooling if needed.

List of Peripheral Components

E Series

Reactor

Frame symbol of driver	Power supply specifications	Rated output	Part No.	Fig.	
	Single phase, 100 V	50 W to 100 W	DV0P227	1	
MKDE	Single phase, 200 V	50 W to 100 W DV0P220		2	
	3-phase, 200 V	50 W to 200 W	DV0F220	_	
	Single phase, 100 V	200 W	DV0P228	1	
MLDE	Single phase, 200 V	200 W to 400 W	DV0P220	2	
	3-phase, 200 V	400 W			



Surge Absorber for Motor Brake

[Unit: mm]

	Part No.	А	В	С	D	E(Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
Fig. 1	DV0P227	55±0.7	80±1	66.5±1	110 Max	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.1	DV0P228	55±0.7	80±1	66.5±1	110 Max	95	46±2	60±2	4-5φ×10	M4	2	8
Fig.2	DV0P220	65±1	125±1	(93)	136 Max	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3

Harmonic restraint on general-purpose inverter and servo driver

Reactor/

On September, 1994, Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system and Guidelines for harmonic restraint on household electrical appliances and generalpurpose articles established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004.

We inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver will be modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

When using a reactor, be sure to install one reactor to one servo driver.

■ Recommended components

Surge Absorber for Motor Brake

Motor	Surge absorber for motor brake		
Motor	Part No. (Manufacturer's)	Manufacturer	
MUMA 50 W to 400 W	Z15D151	SEMITEC Corporation	

List of Peripheral Components

Manufacturer Tel No. / Home Page		Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for motor brake
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	Noise filter for signal lines
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/	
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	Connector
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable

^{*} The above list is for reference only. We may change the manufacturer without notice.

MEMO

Information

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EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products.

However, our AC servos meet the relevant EC Directives for Low Voltage Equipment so that the machine or equipment comprising our AC servos can meet EC Directives.

EMC Directives

MINAS Servo System conforms to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

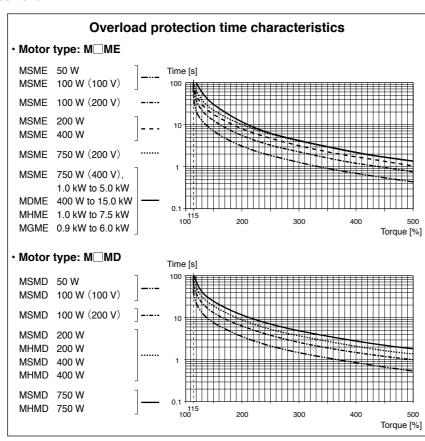
Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Make sure to install a circuit breaker or fuse which are UL recognized (Listed (1) marked) between the power supply and the noise filter.
- For rated current of circuit breaker and fuse, refer to P.19 "Driver and List of Applicable Peripheral Equipments"
- Use a copper cable with temperature rating of 75 °C or higher.
- (3) Over-load protection level

Over-load protective function will be activated when the effective current exceeds 115 % or more than the rated current based on the time characteristics (see the graph). Confirm that the effective current of the driver does not exceed the rated current.

Set up the peak permissible current with Pr0.13 (Setup of 1st torque limit) and Pr5.22 (Setup 2nd torque limit).



Conformed Standards

		Driver	Motor
EC Directives	EMC Directives	EN55011 EN61000-6-2 EN61800-3	_
	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
	Machinery Directives Functional safety '1	ISO13849-1(PL d)(Cat.3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standard	s	UL508C (E164620)	UL1004-1, UL1004-6 (E327868)
CSA Standards		C22.2 No.14	C22.2 No.100
Radio Waves Act (South Korea) (KC) ²		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	-

IEC : International Electrotechnical Commission

EN : Europaischen NormenEMC : Electromagnetic CompatibilityUL : Underwriters LaboratoriesCSA : Canadian Standards Association

Pursuant to the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

Panasonic Service Europe, a division of

Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

- When export this product, follow statutory provisions of the destination country.
- *1 A5IIE and A5E series doesn't correspond to the functional safety standard.
- *2 Information related to the Korea Radio Law

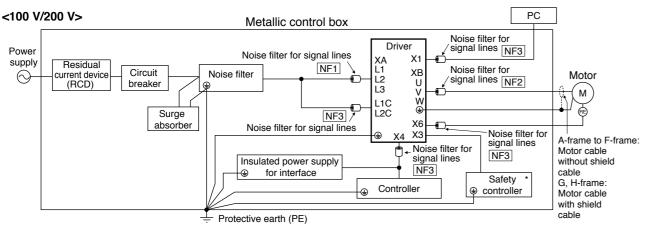
This servo driver is a Class A commercial broadcasting radio wave generator not designed for home use. The user and dealer should be aware of this fact.

A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

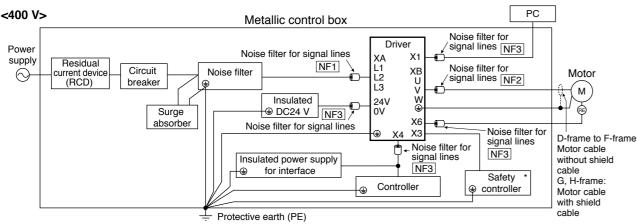
Installation Environment

Use the servo driver in the environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



For NF1 to NF3, refer to the Table "Noise Filter for Signal Line" (P.254).

^{*} A5IIE, A5E is not provided with X3 terminal.



For NF1 to NF3, refer to the Table "Noise Filter for Signal Line" (P.254).

<Caution>

Use options correctly after reading Operating Instructions of the options to better understand the precautions. Take care not to apply excessive stress to each optional part.

Power Supply

100 V type (A-frame to C-frame)	Single phase, 100 V $^{+10}_{-15}\%$ to 120 V $^{+10}_{-15}\%$	50 Hz/60 Hz
200 V type (A-frame to D-frame)	Single/3-phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V type (E-frame to H-frame)	3-phase, 200 V ⁺¹⁰ % to 230 V ⁺¹⁰ % ⁻¹⁵ %	50 Hz/60 Hz
400 V type [Main power supply] (D-frame to H-frame)	3-phase, 380 V ⁺¹⁰ % to 480 V ⁺¹⁰ % ₋₁₅ %	50 Hz/60 Hz
400 V type [Control power supply] (D-frame to H-frame)	DC 24 V ±15 %	

- (1) This product is designed to be used in over-voltage category (installation category) **I** of EN 61800-5-1:2007.
- (2) Use an insulated power supply of DC12 V to 24 V which has CE marking or complies with EN60950.

Circuit Breaker

Install a circuit breaker which complies with IEC Standards and UL recognized (Listed and marked) between power supply and noise filter.

The short-circuit protection circuit on the product is not for protection of branch circuit.

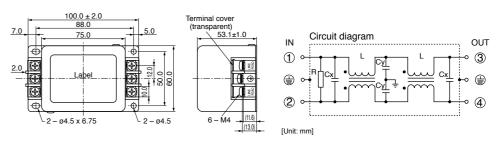
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

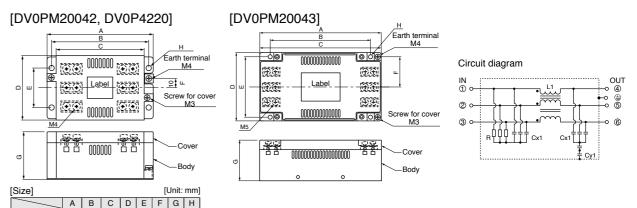
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P4170	Single phase 100 V, 200 V	SUP-EK5-ER-6	A-frame and B-frame	Okaya Electric Ind.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
	3-phase 200 V		A-frame and B-frame	
DV0PM20042	Single phase 100 V, 200 V 3-phase 200 V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.
DV0P4220	Single/3-phase 200 V	3SUP-HU30-ER-6	D-frame	
DV0PM20043	3-phase 200 V	3SUP-HU50-ER-6	E-frame	



DV0PM20042 115 105 95 70 43 10 52 5.5

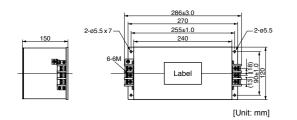
DV0PM2200 145 135 125 70 50 10 52 5.5

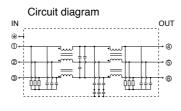
DV0PM20043 165 136 165 90 80 40 54 5.5

For single phase application, use 2 terminals among 3 terminals, leaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

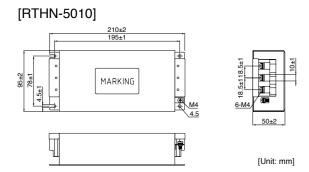
Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P3410	3-phase 200 V	3SUP-HL50-ER-6B	F-frame	Okaya Electric Ind.

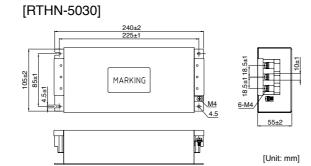


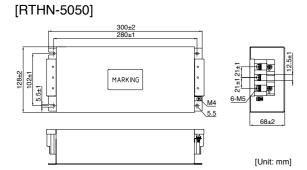


Recommended components

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A-frame to C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E-frame and F-frame	



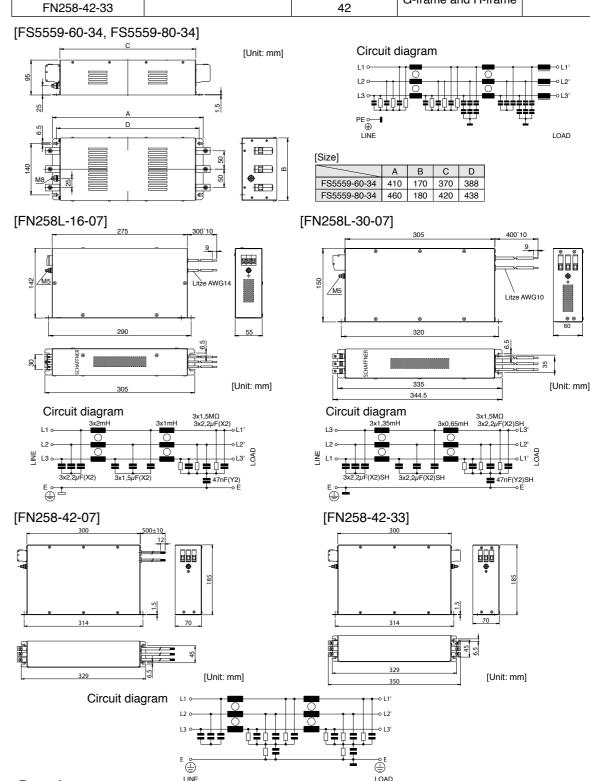




<Remarks>

- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
FS5559-60-34	2 phase 200 V	60	G-frame	
FS5559-80-34	3-phase 200 V	80	H-frame	
FN258L-16-07		16	D-frame and E-frame	Schoffnor EMC Inc
FN258L-30-07	2 phase 400 V	30	F-frame	Schaffner EMC, Inc.
FN258-42-07	3-phase 400 V	42	G-frame and H-frame	
FN258-42-33		42	G-II allie alla H-II allie	

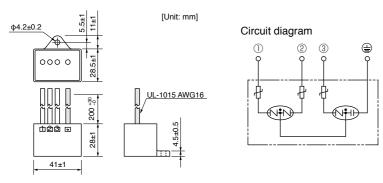


- <Remarks>
- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

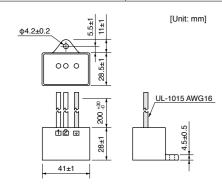
Surge Absorber

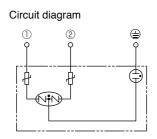
Provide a surge absorber for the primary side of noise filter.

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P1450	3-phase 200 V	R·A·V-781BXZ-4	Okaya Electric Ind.
DV0PM20050	3-phase 400 V	R·A·V-801BXZ-4	Okaya Liectiic iiid.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P4190	Single phase 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric Ind.





Noise Filter for Signal Lines

Install noise filters for signal lines to all cables (power cable, motor cable, encoder cable and interface cable)

Symbol*1	Cable Name	100 V/200 V Amp. frame symbol	400 V Amp. frame symbol	Option part No.	Manufacturer's part No.	Manufacturer	Qty.
		A, B, C, D	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF1	Power cable	E, F	_	Recommended components	RJ8035	KK-CORP.CO.JP	1
		G, H	G, H	Recommended components	RJ8095	KK-CORP.CO.JP	1
		A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF2	Motor cable	G, H	G, H	Recommended components	T400-61D	MICROMETALS	1
NF3	24 V Power cableEncoder cableInterface cableUSB cableControl power cable	Comm (to all fra	-	DV0P1460	ZCAT3035-1330	TDK Corp.	4

^{*1} For symbols, refer to the Block Diagram "Installation Environment" (P.249).

<Remarks>

To connect the noise filter to the connector XB connection cable, adjust the sheath length at the tip of the cable, as required.

<Caution>

Fix the signal line noise filter in order to prevent excessive stress to the cables.

<Fig.2: Dimensions>

_										
Part No.	Current	100 kHz				Siz	e [Unit: ı	mm]		
rail ino.	Current	(μH)	Α	В	С	D1	D2	Core thickness	Е	F
RJ8035	35 A	9.9±3	170	150	23	80	53	24	R3.5	7
RJ8095	95 A	7.9±3	200	180	34	130	107	35	R3.5	7

Fig.1: DV0P1460(Option)

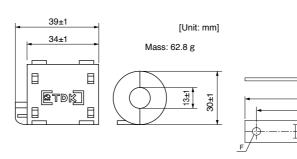
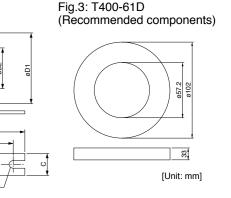


Fig.2: RJ8035, RJ8095 (Recommended components)



Residual Current Device

Install a type B Residual current device (RCD) at primary side of the power supply.

Type B: Residual current device which detects a direct-current ingredient.

Grounding

- (1) Connect the protective earth terminal () of the driver and the protective earth terminal (PE) of the control box without fail to prevent electrical shocks.
- (2) Do not make a joint connection to the protective earth terminals (ⓐ). 2 terminals are provided for protective earth.

<Note>

For driver and applicable peripheral equipments, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

E Series

EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products. MINAS AC Servos conforms to the EC Directives for Low Voltage Equipment so that the machine incorporating our servos has an easy access to the conformity to relevant EC Directives for the machine.

EMC Directives

MINAS Servo System conform to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

Conformed Standards

Subject		Conformed Standard	
	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to
Motor	EN50178	UL508C CSA22.2 No.14	Low- Voltage Directives
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	
	EN61000-6-2	Immunity for Industrial Environments	1
	IEC61000-4-2	Electrostatic Discharge Immunity Test	Conforms to
Motor and	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	references
driver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives
	IEC61000-4-5	Lightening Surge Immunity Test	1
	IEC61000-4-6	High Frequency Conduction Immunity Test]
	IEC61000-4-11	Instantaneous Outage Immunity Test	

- IEC: International Electrotechnical Commission
- EN : Europaischen Normen **EMC: Electromagnetic Compatibility**
- UL : Underwriters Laboratories
- CSA: Canadian Standards Association

Pursuant to at the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

Panasonic Service Furone

a division of Panasonic Marketing Europe GmbH Winsbergring 15,22525 Hamburg, F.R. Germany

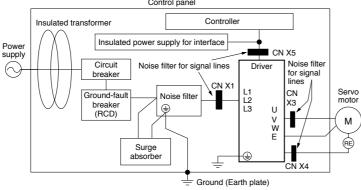
Composition of Peripheral Components

<Pre><Pre>cautions in using options>

Use options correctly after reading operation manuals of the options to better understand the precautions. Take care not to apply excessive stress to each optional part. Control pane

Installation Environment

Use Minas driver in environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



Power Supply

100 V system	Single phase, 100 V $^{+10}_{-15}\%$ to 115 V $^{+10}_{-15}\%$	50 Hz/60 Hz
200 V system	Single phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V system	3-phase, 200 V $^{+10}_{-15}\%$ to 240 V $^{+10}_{-15}\%$	50 Hz/60 Hz

- (1) Use the power supply under an environment of Overvoltage Category II specified in IEC60664-1.
- (2) For a interface power supply, use the insulated one with 12 VDC to 24 VDC which conforms to CE Marking or EN Standards (EN60950).

Circuit Breaker

Connect a circuit breaker which conforms to IEC standards and is UL recognized (UL Listed, (n) marked), between the power supply and the noise filter.

Composition of Peripheral Components Conformity to UL Standards

Noise Filter

When you install one noise filter in the power supply for multi axis application, consult with the manufacture of the filter.

Option part No.	Part No.	Manufacturer
DV0P4160	3SUP-HU10-ER-6	Okaya Electric Industries Co.

Surge Absorber

Install a surge absorber at primary side of the noise filter.

Option part No.	Driver voltage spec	Part No.	Manufacturer	Option part No.	Driver voltage spec	Part No.	Manufacturer
DV0P1450	3-phase, 200 V	R·A·V-781BXZ-4	Okaya Electric	DV0P4190	Single phase, 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric
Circuit diagr		1#1 1#1 1#1 1#1 1#1 1#1 1#1 1#1	OF O	Circuit diago		0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	UL-1015 AWG16 VWG16
		41±1	<u></u>			41±1	

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged

Noise Filter for Signal Lines

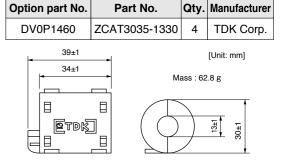
Install noise filters for signal lines to all cables (Power line, motor cable, encoder cable, interface cable)

<Caution>

- Please fix a line noise filter to avoid excessive stress to the cable.
- · When using multiple axes, noise generated from each driver might influence driver and peripheral equipment and result to

Please insert line noise filters between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "peripheral equipment configuration".)



Grounding

- (1) Connect the protective earth terminal of the driver ((1) and protective earth terminal of the control panel (PE) without fail to prevent electrical shocks.
- (2) Do not co-clamp to the ground terminals ((\perp)). Two ground terminals are provided.

Ground-Fault Breaker

Install a ground fault curcuit braker (RCD) to the primary side of the power supply.

Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (File No. E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Install a circuit breaker or fuse which are UL recognized (LISTED (1) marked) between the power supply and the noise filter without fail.

Table1: Basic unit Table 2: Auxiliary unit

- Table 5 : Prefix

(Multiples of 10)

Derived unit

Table 2: Auxiliary unit

Symbol of unit

rad

AC Servo Motor Capacity Selection Software

We have prepared PC software "M-SELECT" for AC servo motor capacity selection. Consult our sales representative or authorized distributor.

Three-step selection

1. Select components and specified values Select appropriate mechanical parameter items and fill them with parameter values derived from

the real machine. To simulate the target machine as practical as possible, use maximum number of parameters available.

standard] with

such as

celeration.

optional settings

S-acceleration/de

2. Enter operation pattern



3. Select the motor

AC Servo Motor Capacity Selection Software

Option Selection Software for AC Servo Motor

When the data required in step 1 and 2 above have been input, the software lists the motors,

which will be appropriate to use with your machine. Select the motor that is best suitable for your machine application.



Details of motor Once the motor is selected, specifications of the motor and amplifier, and details of reason for

determination are displayed and may be printed out.



Option Selection Software for AC Servo Motor

Input the planned operation pattern that will contain

[speed and rotation standard] or [absolute position

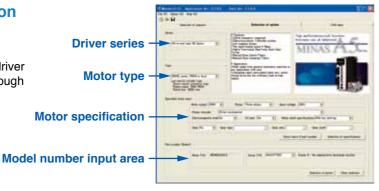
We have prepared PC software to enable fast, easy, and correct option selection, a complicated job without the software.

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Two procedures for option selection

1. Selection according to driver series and motor type

Suitable option can be selected by selecting driver series, motor type and motor specification through pulldown menu.



2. Entry of model number

If you know the model number based on the servo motor and driver currently used, enter the model number.

Result of selection

Tab sheet specific to each of option model numbers is used for easier identification of the desired option.

* When you are using the motor capacity selection software, simply press [Option Selection] tab and the screen as shown right will appear.



Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors

Quantity Name of unit Symbol of unit Quantity Name of unit Length meter Plane angle radian Weight kilogram kg Solid angle steradian Time second S

Α K

mol

cd

Table 4: Unit combined Other derived unit Table 3: Derived unit with with SI unit proper name

SI unit —

Table 3: Major derived unit with proper name

ampere

kelvin

mol

candela

Table1: Basic unit

Current

Thermodynamic temperature

Amount of substance

Luminous intensity

Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1 Hz = 1 s ⁻¹
Force	newton	N	1 N = 1 kg·m/s ²
Pressure, Stress	pascal	Pa	1 Pa = 1 N/m ²
Energy, Work, Amount of heat	joule	J	1 J = 1 N·m
Amount of work, Work efficiency, Power, Electric power	watt	W	1 W = 1 J/s
Electric charge, Amount of electricity	coulomb	С	1 C = 1 A·s
Electric potential, Potential difference, Voltage, Electromotive force	volt	V	1 V = 1 J/C
Electrostatic capacity, Capacitance	farad	F	1 F = 1 C/V
Electric resistance	ohm	Ω	1 Ω = 1 V/A
Electric conductance	siemens	S	1 S = 1 Ω ⁻¹
Magnetic flux	weber	Wb	1 Wb = 1 V·s
Magnetic flux density, Magnetic induction	tesla	T	1 T = 1 Wb/m ²
Inductance	henry	Н	1 H = 1 Wb/A
Degree centigrade (Celsius)	degree centigrade (Celsius) / degree	°C	t °C = (t+273.15) K
Luminous flux	lumen	lm	1 lm = 1 cd·sr
Illuminance	lux	lx	1 lx = 1 lm/m ²

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Table 4. Unit combined with SI unit

Table 4. UIII	t combined t	With Si unit
Quantity	Name	Symbol of unit
	minute	min
Time	hour	h
	day	d
	degree	۰
Plane angle	minute	1
	second	n n
Volume	liter	I, L
Weight	ton	t

Table 5: Prefix

Multiples powered	Pr	refix
to unit	Name	Symbol
10 ¹⁸	exa	E
10 ¹⁵	peta	Р
10 ¹²	tera	Т
10 ⁹	giga	G
10 ⁶	mega	M
10 ³	kilo	k
10 ²	hecto	h
10	deca	da
10 ⁻¹	deci	d
10 ⁻²	centi	С
10 ⁻³	milli	m
10 ⁻⁶	micro	μ
10 ⁻⁹	nano	n
10 ⁻¹²	pico	р
10 ⁻¹⁵	femto	f
10 ⁻¹⁸	atto	а

Major Compatible Unit

Quantity	Symbol of conventional unit	Symbol of SI unit and compatible unit	Conversion value
Length	μ (micron)	μ m	1 μ = 1 μm (micrometer)
Acceleration	Gal	m/s ²	1 Gal = 10 ⁻² m/s ²
	G	m/s ²	1 G = 9.80665 m/s ²
Frequency	c/s, c	Hz	1 c/s = Hz
Revolving speed, Number of revolutions	rpm	s ⁻¹ or min ⁻¹ , r/min	1 rpm = 1 min ⁻¹
Weight	kgf	_	1
Mass	_	kg	Same value
Weight flow rate	kgf/s	_	1, .
Mass flow rate	_	kg/s	Same value
Specific weight	kgf/m ³	_	1, .
Density	_	kg/m³	Same value
Specific volume	m³/kgf	m³/kg	Same value
Load	kgf	N	1 kgf = 9.80665 N
Force	kgf	N	1 kgf = 9.80665 N
	dyn	N	1 dyn = 10 ⁻⁵ N
Moment of force	kgf⋅m	N∙m	1 kgf·m = 9.806 N·m
Pressure	kgf/cm ²	Pa, bar (1) or kgf/cm ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
		,	= 0.980665 bar
	at (Engineering atmospheric pressure)	Pa	1 at = 9.80665 x 10 ⁴ Pa
	atm (Atmospheric pressure)	Pa Pa	1 atm = 1.01325 x 10 ⁵ Pa
	mH ₂ O, mAq	Pa	$1 \text{ mH}_2\text{O} = 9.80665 \times 10^3 \text{ Pa}$
	mmHg	Pa or mmHg ⁽²⁾	1 mmHg = 133.322 Pa
	Torr	Pa	1
Stress	kgf/mm ²	Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
Olle33	1.6//11111	1 4 51 14111	=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
	Ng//ciii	1 & 01 14/111	= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m²	Pa or N/m ²	1 kgf/m² = 9.80665 Pa = 9.80665 N/m²
Liastic modulus	Kgi/III	1 & 01 14/111	1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf∙m	J (joule)	1 kgf·m = 9.80665 J
Lifergy, Work	erg	J (Joule)	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf·m/s	W (watt)	1 kgf·m/s = 9.80665 W
Work efficiency, I ower	PS	W (Watt)	1 PS = 0.7355 kW
Viscosity	PP		1 P = 0.1 Pa·s
,	St	Pa·s mm²/s	10 ⁻² St = 1 mm ² /s
Kinetic viscosity Thermodynamic temperature	K	K (kelvin)	1 K = 1 K
, ' '		K (Kelviii)	1 deg = 1 K
Temperature interval	deg	J	1 cal = 4.18605 J
Amount of heat	cal	J/K ⁽³⁾	1 cal - 4.18605 J/K
Heat capacity	cal/°C		
Specific heat, Specific heat capacity	cal/ (kgf·°C)	cal/ (kgf·K) ⁽³⁾	1 cal/ (kg·°C) = 4.18605 J/ (kg·K)
Entropy Specific entropy	cal/K	J/K	1 cal/K = 4.18605 J/K
Specific entropy	cal/ (kgf·K)	J/(kg·K)	1 cal/ (kgf·K) = 4.18605 J/ (kg·K) 1 cal = 4.18605 J
Internal energy (Enthalpy)	cal	J	
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1 cal/kgf = 4.18605 J/kg
Heat flux	cal/h	W \\\\\2	1 kcal/h = 1.16279 W
Heat flux density	cal/ (h·m²)	W/m ²	1 kcal/ (h·m²) = 1.16279 W/m²
Thermal conductivity	cal/ (h·m·°C)	W/ (m·K) ⁽³⁾	1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)
Coefficient of thermal conductivity	cal/ (h·m²·°C)	W/ (m ² ·K) ⁽³⁾	1 kcal/ (h·m ² ·°C) = 1.16279 W/ (m ² ·K)
Intensity of magnetic field	Oe	A/m	1 Oe = $10^3 / (4\pi) \text{ A/m}$
Magnetic flux	Mx	Wb (weber)	1 Mx = 10 ⁻⁸ Wb
Magnetic flux density	Gs,G	T (tesla)	1 Gs = 10 ⁻⁴ T

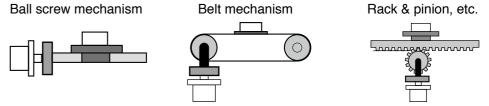
- (1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.
- (2) Applicable to scale or indication of blood pressure manometers.
- (3) "°C" can be substituted for "K".

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

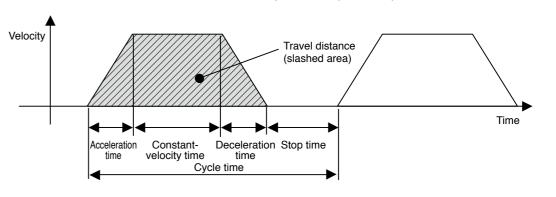
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<Typical mechanism>



2. Definition of operating pattern.

Acceleration/deceleration time, Constant-velocity time, Stop time, Cycle time, Travel distance



Note) Selection of motor capacity significantly varies depending on the operating pattern. The motor capacity can be reduced if the acceleration/deceleration time and stop time are set as long as possible.

3. Calculation of load inertia and inertia ratio.

Calculate load inertia for each mechanical component. (Refer to "General inertia calculation method" described later.)

Divide the calculated load inertia by the inertia of the selected motor to check the inertia ratio. For calculation of the inertia ratio, note that the catalog value of the motor inertia is expressed as "x 10-4 kg·m2".

4. Calculation of motor velocity

Calculate the motor velocity from the moving distance, acceleration / deceleration time and constant-velocity time.

5. Calculation of torque

Calculate the required motor torque from the load inertia, acceleration/deceleration time and constant-velocity time.

6. Calculation of motor

Select a motor that meets the above 3 to 5 requirements.

Description on the Items Related to Motor Selection

1. Torque

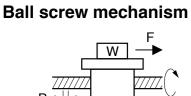
(1) Peak torque

Indicate the maximum torque that the motor requires during operation (mainly in acceleration and deceleration steps). The reference value is 80% or less of the maximum motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

(2) Traveling torque, Stop holding torque

Indicates the torque that the motor requires for a long time. The reference value is 80% or less of the rated motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

Traveling torque calculation formula for each mechanism



Traveling torque

 $\mathsf{Tf} = \frac{\mathsf{P}}{2\pi\,\eta} \; (\mu \mathsf{gW} + \mathsf{F})$

W : Weight [kg]
P : Lead [m]

η : Mechanical efficiencyμ : Coefficient of friction

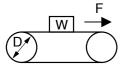
F : External force [N]

g : Acceleration of gravity 9.8[m/s²]

Belt mechanism

Traveling torque

$$\mathsf{Tf} = \frac{\mathsf{D}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W}\!+\!\mathsf{F})$$



W : Weight [kg]

P : Pulley diameter [m]

 $\boldsymbol{\mu}$: Coefficient of friction

η: Mechanical efficiency

 $\mathsf{F}\,:\mathsf{External}\,\mathsf{force}\,[N]$

g : Acceleration of gravity 9.8[m/s²]

(3) Effective torque

Indicates a root-mean-square value of the total torque required for running and stopping the motor per unit time. The reference value is approx. 80% or less of the rated motor torque.

$$Trms = \sqrt{\frac{Ta^2 x ta + Tf^2 x tb + Td^2 x td}{tc}}$$

Ta : Acceleration torque [N·m]

ta: Acceleration time [s]

tc: Cycle time [s]

Tf: Traveling torque [N·m]

tb: Constant-velocity time [s]

(Run time + Stop time)

Td: Deceleration torque [N·m] td: Deceleration time [s]

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later.

3. Inertia and inertia ratio

Inertia is like the force to retain the current moving condition.

Inertia ratio is calculated by dividing load inertia by rotor inertia.

Generally, for motors with 750 W or lower capacity, the inertia ratio should be "20" or less. For motors with 1000 W or higher capacity, the inertia ratio should be "10" or less.

If you need quicker response, a lower inertia ratio is required.

(For example, when the motor takes several seconds in acceleration step, the inertia ratio can be further) increased.

General inertia calculation method

	calculation method		
Shape	J calculation formula	Shape	J calculation formula
Disk	$J = \frac{1}{8} WD^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$	Hollow cylinder	$J = \frac{1}{8} W(D^2 + d^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $d : Inner diameter [m]$
Prism	$J = \frac{1}{12} W (a^2 + b^2) [kg \cdot m^2]$ $W : Weight [kg]$ $a, b, c : Side length [m]$	Uniform rod	$J = \frac{1}{48} W(3D^2 + 4L^2)_{[kg \cdot m^2]}$ $W : Weight [kg]$ $D : Outer diameter [m]$ $L : Length [m]$
Straight rod	$J = \frac{1}{3} WL^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $L : Length [m]$	Separated rod	$J = \frac{1}{8} WD^{2} + WS^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $S : Distance [m]$
Reduction gear	Inertia on shaft "a" $J = J_1 + (\frac{n_2}{n_1})^2 J_2[\mathrm{kg} \cdot \mathrm{m}^2]$ $n_1 : \text{A rotational speed of a shaft } [\mathrm{r/min}]$ $n_2 : \text{A rotational speed of b shaft } [\mathrm{r/min}]$		
Conveyor	$J = \frac{1}{4} W D^{2} [kg \cdot m^{2}]$ $W : \text{Workpiece weight on conveyor } [kg]$ $D : \text{Drum diameter } [m]$ * Excluding drum J	Ball screw	$J = J_B + \frac{W \cdot P^2}{4\pi^2} \text{ [kg·m²]}$ $W : \text{Weight [kg]}$ $P : \text{Lead}$ $JB : J \text{ of ball screw}$

If weight (W [kg]) is unknown, calculate it with the following formula:

Weight W[kg]=Density ρ [kg/m³] x Volume V[m³]

Density of each material

Iron ρ =7.9 x 10³ [kg/m³]

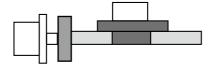
Aluminum $\rho = 2.8 \times 10^{3} [kg/m^{3}]$

Brass ρ =8.5 x 10³ [kg/m³]

To Drive Ball Screw Mechanism

1. Example of motor selection for driving ball screw mechanism

Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$



Travel distance 0.3[m]

Coupling inertia $Jc = 10 \times 10^{-6} [kg \cdot m^2]$ (Use manufacturer-specified catalog value, or calculation value.)

2. Running pattern :

Acceleration time ta = 0.1 [s]tb = 0.8 [s]Constant-velocity time Deceleration time td = 0.1 [s]Cycle time tc = 2[s]Travel distance 0.3[m]

3. Ball screw weight
$$BW = \rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5 = 1.24 \, [kg]$$

4. Load inertia

$$JL = JC + JB = JC + \frac{1}{8}BW \times BD^{2} + \frac{WA \cdot BP^{2}}{4\pi^{2}}$$

$$= 0.00001 + (1.24 \times 0.02^{2}) / 8 + 10 \times 0.02^{2} / 4\pi^{2}$$

$$= 1.73 \times 10^{-4} [kg \cdot m^{2}]$$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM =
$$1.73 \times 10^{-4}$$
 / 0.14×10^{-4} Therefore, the inertia ratio is "12.3" (less than "30") (In case of MSME 100 W motor: JM = 0.051×10^{-4} Therefore, the inertia ratio is "33.9".)

7. Calculation of maximum velocity (Vmax)

$$\frac{1}{2} \times \text{Acceleration time} \times \text{Vmax} + \text{Constant-velocity time} \times \text{Vmax} + \frac{1}{2} \times \text{Deceleration time} \times \text{Vmax} = \text{Travel distance}$$

$$\frac{1}{2} \times 0.1 \times \text{Vmax} + 0.8 \times \text{Vmax} + \frac{1}{2} \times 0.1 \times \text{Vmax} = 0.3$$

$$0.9 \times Vmax = 0.3$$

 $Vmax = 0.3 / 0.9 = 0.334 [m/s]$

$$N = 0.334 / 0.02 = 16.7 [r/s]$$

= 16.7 × 60 = 1002 [r/min] < 3000 [r/min] (Rated velocity of MSME 200W motor)

9. Calculation of torque

Traveling torque
$$T_f = \frac{BP}{2\pi B \eta} (\mu gWA + F) = \frac{0.02}{2\pi \times 0.9} (0.1 \times 9.8 \times 10 + 0)$$

$$= 0.035 [N \cdot m]$$
Acceleration torque
$$T_a = \frac{(JL + JM) \times 2\pi N[r/s]}{Acceleration time [s]} + Traveling torque$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$$

$$= 0.196 + 0.035 = 0.231 [N \cdot m]$$

Deceleration torque $Td = \frac{(JL + JM) \times 2\pi N[r/s]}{Deceleration time [s]}$ - Traveling torque $=\frac{(1.73\times10^{-4}+0.14\times10^{-4})\times2\pi\times16.7}{0.1}-0.035$ $= 0.196 - 0.035 = 0.161 [N \cdot m]$

10. Verification of maximum torque

To Drive Ball Screw Mechanism

Example of Motor Selection

Acceleration torque = $Ta = 0.231 [N \cdot m] < 1.91 [N \cdot m]$ (Maximum torque of MSME 200 W motor)

11. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8 + 0.161^2 \times 0.1}{2}}$
= 0.067 [N·m] < 0.64 [N·m] (Rated torque of MSME 200 W motor)

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torque margin is significantly large.

Example of Motor Selection

Example of motor selection for timing belt mechanism

1.Mechanism Workpiece weight WA = 2[kg] (including belt)

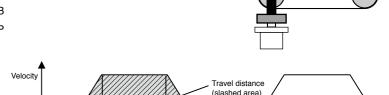
> Pulley diameter PD = 0.05[m]

Pulley weight WP= 0.5[kg] (Use manufacturer-specified catalog value, or calculation value.)

Mechanical efficiency $B\eta = 0.8$

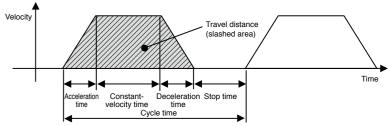
Coupling inertia Jc = 0 (Direct connection to motor shaft)

Belt mechanism inertia Pulley inertia



2. Running pattern

Acceleration time ta = 0.1[s]Constant-velocity time tb = 0.8[s]Deceleration time td = 0.1[s]Cycle time tc = 2[s]Travel distance 1[m]



3. Load inertia JL = JC + JB + JP

= JC +
$$\frac{1}{4}$$
WA × PD² + $\frac{1}{8}$ WP × PD² × 2
= 0 + $\frac{1}{4}$ × 2 × 0.05² + $\frac{1}{8}$ × 0.5 × 0.05² × 2
= 0.00156 = 15.6 × 10⁻⁴ [kg·m²]

4. Provisional motor selection

In case of MSME 750 W motor : $JM = 0.87 \times 10^{-4} \, [kg \cdot m^2]$

5. Calculation of inertia ratio

JL / JM = $15.6 \times 10^{-4} / 0.87 \times 10^{-4}$ Therefore, the inertia ratio is "17.9" (less than "20")

6. Calculation of maximum velocity (Vmax)

$$\frac{1}{2}$$
 × Acceleration time × Vmax + Constant-velocity time × Vmax + $\frac{1}{2}$ × Deceleration time × Vmax = Travel distance $\frac{1}{2}$ × 0.1 × Vmax + 0.8 × Vmax + $\frac{1}{2}$ × 0.1 × Vmax = 1 0.9 × Vmax = 1

$$0.9 \times Vmax = 1$$

 $Vmax = 1 / 0.9 = 1.111[m/s]$

7. Calculation of motor velocity (N [r/min])

A single rotation of pulley :
$$\pi \times PD = 0.157[m]$$

N = 1.111 / 0.157 = 7.08[r/s]
= 7.08 × 60 = 424.8[r/min] < 3000[r/min] (Rated velocity of MSME 750 W motor)

8. Calculation of torque

Traveling torque
$$T_f = \frac{P_D}{2\,\eta} (\mu gWA + F) = \frac{0.05}{2\,\times\,0.8} \ (0.1\,\times\,9.8\,\times\,3 + 0)$$

$$= 0.061[\,N\cdot m\,]$$
Acceleration torque
$$T_a = \frac{(JL + JM)\,\times\,2\pi\,N[\,r/s\,]}{Acceleration\,time[\,s\,]} + Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} + 0.061$$

$$= 0.751 + 0.061 = 0.812[\,N\cdot m\,]$$
Deceleration torque
$$T_d = \frac{(JL + JM)\,\times\,2\pi\,N[\,r/s\,]}{Deceleration\,time[\,s\,]} - Traveling\,torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} - 0.061$$

$$= 0.751 - 0.061 = 0.69[\,N\cdot m\,]$$

9. Verification of maximum torque

Acceleration torque $Ta = 0.812[N \cdot m] < 7.1[N \cdot m]$ (Maximum torque of MSME 750 W motor)

10. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$
= 0.241 [N·m] < 2.4 [N·m] (Rated torque of MSME 750 W motor)

11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

Request Sheet for Motor Selection

Request for motor selection I: Ball screw drive

mm

kg

mm

mm

1. Driven mechanism and running data

- 1) Travel distance of the work load per one cycle mm 2) Cycle time to: (Fill in items 3) and 4) if required.)
- 3) Acceleration time 4) Deceleration time td:

ts:

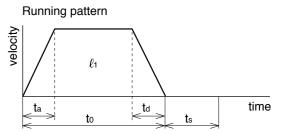
- V: 6) Max. velocity mm/s 7) External force F: Ν
- Positioning accuracy of the work load 9) Total weight of the work load and the table WA:

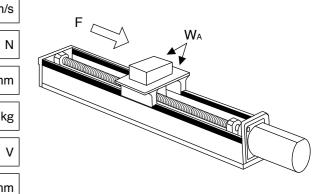
5) Stopping time

10) Power supply voltage

12) Total length of the ball

- 11) Diameter of the ball screw
- 13) Lead of the ball screw mm





۸۱	Traveling direction	
4)	(horizontal, vertical etc.)	

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

-	
	Company name :
	Department/Section :
	Name :
	Address :
	Tel:
	Fax:
	E-mail address:

Request Sheet for Motor Selection

Request for motor selection II: Timing pulley + Ball screw drive

1. Driven mechanism and running data

2) Cycle time

3) Acceleration time

el distance of the work	
per one cycle	
	ſ

ℓ 1:	mm	15)	

15) Diameter of the pulley

15) Diameter of the pulley	D ₁ :	mm	D ₂ :
16) Weight of the pulley	W1:	kg	W2:

(Fill in items 3) and 4) if required.)

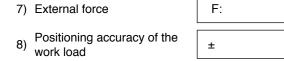
N

mm

-		
4)	Deceleration time	t d:

5)	Stopping time	ts:	S

6)	Max. velocity	V:	mm/s



9)	Total weight of the work load and the table	WA:	kg

10) Power supply voltage	V	

11) Diameter of the ball screw	mm

12)	Total length of the ball screw	mm

13) Lead of the ball screw	mm

14) Traveling direction (horizontal, vertical etc.)	
---	--

Motor side Ball screw side

/	D ₁ :	mm	D ₂ :	mm
	W1:	kg	W2:	kg

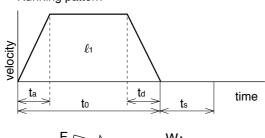
r	item	17)	and	18))	

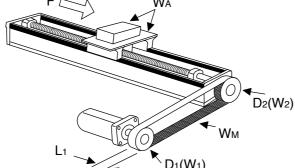
17)	Width of the pulley	L1:	mm

18)	Material of the pulley

19) Weight of the

belt	W _M :	kg





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection III: Belt drive

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm
2)	Cycle time	to:	s
	(Fill in items 3) and 4) if required.)		

3) Acceleration time	ta:	5
Deceleration time	ta.	

5) Stopping time	ts:
------------------	-----

Max. velocity	V:	mm/s
---------------	----	------

7) External lorce	Г.	ı,
8) Positioning accuracy of the	±	mm

9)	Total weight of the work load	WA:	kı

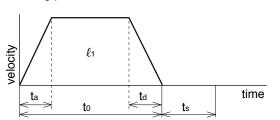
work load

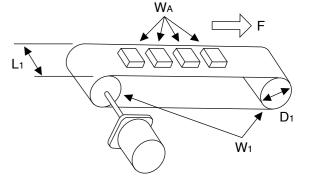
11) Weight of the belt	W _M :	k
------------------------	------------------	---

Diameter of the driving pulley	D ₁ :
--------------------------------	------------------

3)	Total weight of the pulley	W ₁ :	kg
3)	Total weight of the pulley	W ₁ :	k

Running pattern





(or item 14) and 15))

14)	Width of the pulley	
-----	---------------------	--

5)	Material of the pulley	

L₁:

16)	Traveling direction	е	V	/E	e	li	n	g	9	di	re	c	tic	or	1				
10)	(horizontal, vertical etc.)	z	ri	iz	Z(o	r	nt	ta	I,	V	er	ti	Ca	al	e	tc	.)	

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

mm

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

Request for motor selection V: Turntable drive

V:

WA:

D₁:

T₁:

7) Positioning accuracy of the work load

9) Driving radius of the center of gravity of the work

8) Weight of one work load

10) Diameter of the table

12) Diameter of the table support

13) Power supply voltage

11) Mass of the table

							J		
1. Driven mechanism and running data									Cylinder
	distance of the work er one cycle	d ₁ :	deg	14)	Dimensions of the work load	a:	mm	a:	mm
2) Cycle t	time	to:	s			b:	mm	b:	mm
(Fill in	items 3) and 4) if requi	red.)				c:	mm	c:	mm
3) Accele	ration time	ta:	S	15)	Number of work loads				pcs
4) Decele	eration time	td:	S		Running pattern				
5) Stoppi	ng time	ts:	S		>				
May r	stational annual of the				d ₁	\			

to ts	me
W _A R ₁	

Request Sheet for Motor Selection

Request for motor selection IV: Timing pulley + Belt drive

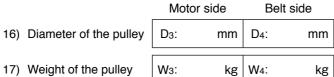
Request Sheet for Motor Selection

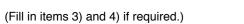
1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm
2)	Cycle time	to:	s

load per one cycle		
Cycle time	to:	S

16)	Diameter of the pulley		
		_	





3) Acceleration time	ta:	s
Deceleration time	ta:	

5) :	Stopping time	ts:	S

V:

6) Max. velocity	V:	mm/s
7) External force	F:	N
Positioning accuracy of the		

8) Positioning accuracy of the work load	±	mm
9) Total weight of the work load	WA:	kg

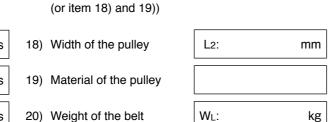
Idau	
10) Power supply voltage	V

11) Weight of motor side belt	W _M :	kg

		Moto	or side	Bel	t side
12)	Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
13)	Weight of the pulley	W ₁ :	kg	W ₂ :	kg
	/ than a d d) and d	5 \\			

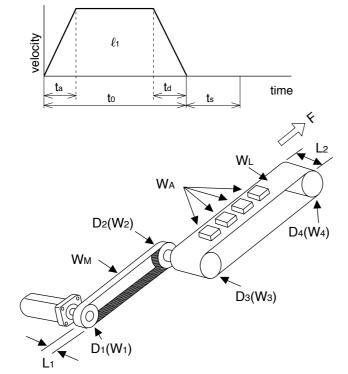
(or item 14) and 15))

14)	Width of the belt	L1:	mm
15)	Material of the pulley		



21)	Traveling direction	
21)	(horizontal, vertical etc.)	

Running pattern



2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Company name :
Department/Section :
Name :
Address:
Tel:
Fax :
E-mail address:

2. Other data (Fill the details on specific mechanism and its configurations i	n the following blank
--	-----------------------

r/s

deg

kg

mm

mm

kg

 mm

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection VI: Timing pulley + Turntable drive

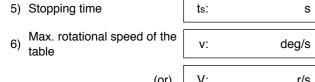
1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	d ₁ :	deg
2)	Cycle time	to:	s

da por ono oyolo			l
ycle time	to:	s	1

(Fill in items 3) and 4) if	required.)	
3) Acceleration time	ta:	s





	(01)	٧.	1/8
7)	Positioning accuracy of the work load	±	deg

- 8) Weight of one work load 9) Driving radius of the center of gravity of the work mm
- 10) Diameter of the table mm
- 11) Mass of the table
- 12) Diameter of the table support
- 13) Power supply voltage

			(Prism)		(Cylinder)
14)	Dimension of the work load	a:	mm	a:	mm
		b:	mm	b:	mm
		c:	mm	c:	mm

T₁:

15) Number of work loads

6)	Diameter of the pulley	
----	------------------------	--

6)	Diameter of the pulley	D ₂ :	mm	D3:	mm
7)	Weight of the pulley	W2:	kg	W3:	kg

(or item 18) and 19))

18)	Width o	of the	pullev
10)	VVIGUI	טו נווכ	pulicy

19)	Material of the pulley	
-----	------------------------	--

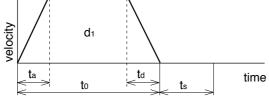
20)	Weight	of	the	belt
-----	--------	----	-----	------

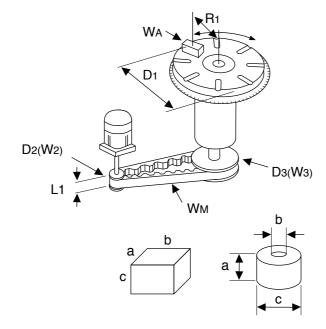
L1:	mm

Turntable side

of the belt W _M :
of the belt W _M :







2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

pcs

kg

kg

mm

V

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection VII: Roller feed drive

mm/s

Ν

mm

pcs

٧

mm

kg

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm
2)	Cycle time	to:	S
	(Fill in items 3) and 4) if required.)		
3)	Acceleration time	ta:	s

td:

ts:

v:

F:

D₁:

W₁:

5)	Stopping time		

Max. velocity	

')	External	pulling	lorce	

3)	Positioning accuracy of the
)	work load

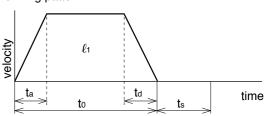
9)	Number of rollers
10)	Power supply voltage

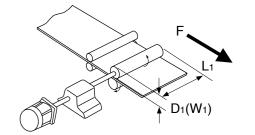
4) Deceleration time

11)	Diameter of the roller

12)	Mass	of	the	rolle
-----	------	----	-----	-------

pattern





(or item 13) and 14))

13)	Width	of the	rolle
.0)	· · · · · · · · · · · · · · · · · · ·	01 1110	10110

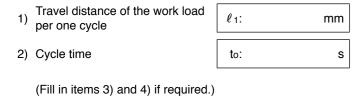
13) Width of the roller	L ₁ :	mm
14) Material of the roller		

2. Other data (Fill the details on specific mechanism and its configurations in the following bl	lank
--	------

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

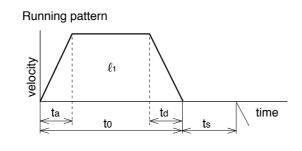
Request for motor selection **Ⅲ**: Driving with Rack & Pinion

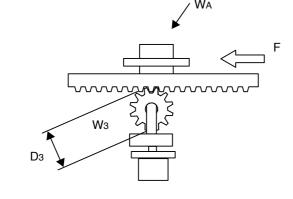
1. Driven mechanism and running data



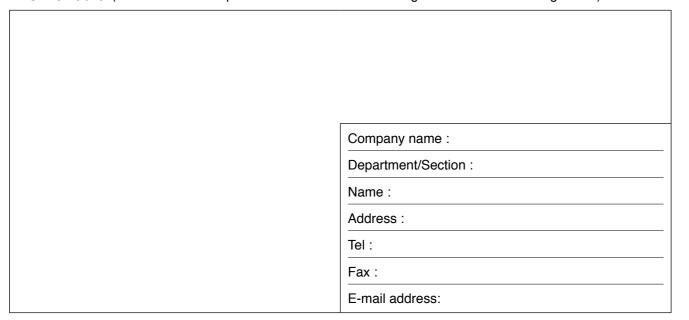
_,	Cyolo timo		
	(Fill in items 3) and 4) if required.)		
3)	Acceleration time	ta:	s
4)	Deceleration time	td:	S
5)	Stopping time	ts:	S
6)	Max. velocity	V:	mm/s
7)	External force	F:	N
8)	Positioning accuracy of the work load	±	mm
9)	Total weight of the work load	WA:	kg
10)	Power supply voltage		V
11)	Diameter of the pinion	D3:	mm
12)	Mass of the pinion	W3:	kg

Traveling direction (horizontal, vertical, etc.)

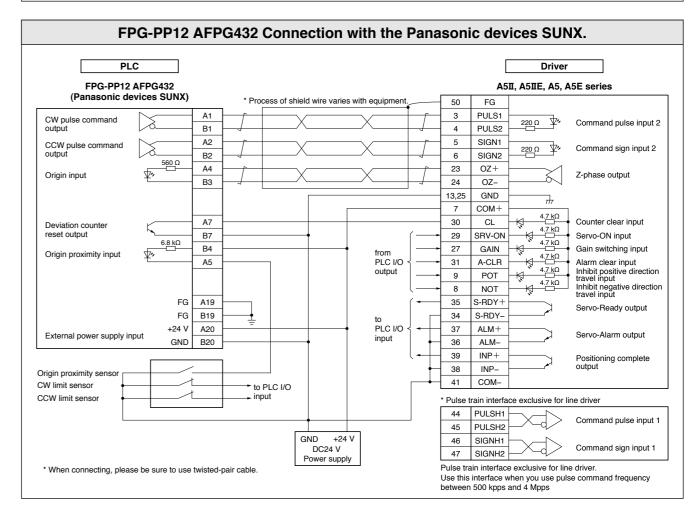


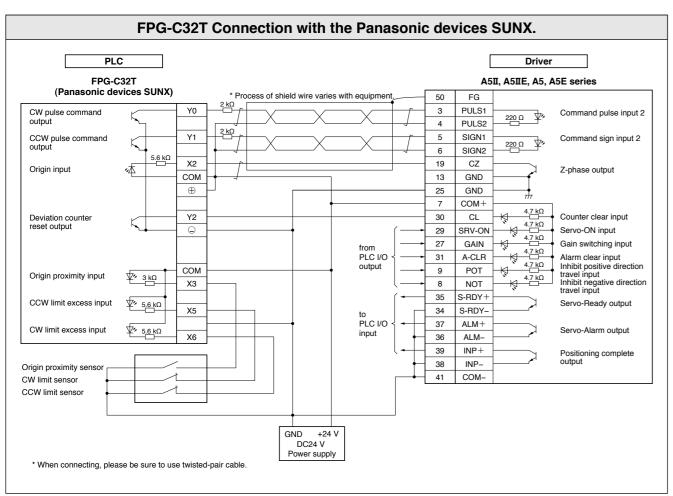


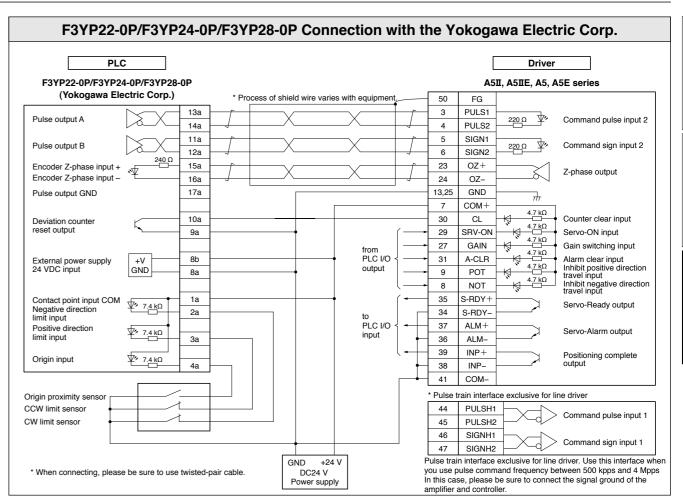
2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

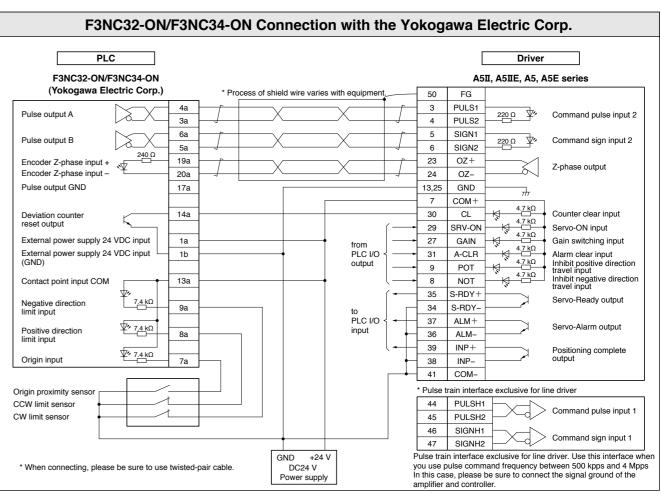


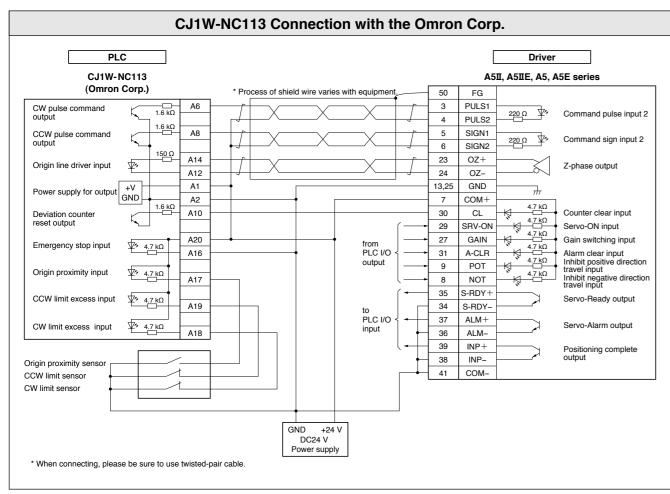
FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) Connection with the Panasonic devices SUNX. PLC Driver FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) A5II, A5IIE, A5, A5E series (Panasonic devices SUNX) PULS1 A1 A10 3 CW pulse command 220 Ω 💯 Command pulse input 2 B1 B10 PULS2 A2 A11 CCW pulse comma output 5 SIGN1 220 Ω 💯 Command sign input 2 B2 B11 SIGN2 3.9 kΩ A3 A12 07+23 Z-phase output Origin input (5 VDC) A4 A13 OZ-24 B3 B12 13,25 GND B5 B14 COM+ Servo-ON output A7 A16 30 CL Counter clear input Deviation counter reset output B7 B16 29 SRV-ON Servo-ON input 3.6 kΩ B4 B13 27 GAIN 🙀 Gain switching input Origin proximity input 4.7 kΩ from PLC I/O A5 A14 31 A-CLR Alarm clear input 6.8 kΩ Inhibit positive direction travel input Inhibit negative direction travel input POT 😽 Limit excess (+) 4.7 kΩ A6 A15 8 NOT 35 S-RDY+ Limit excess ⊝ Servo-Ready output B6 B15 34 S-RDYto PLC I/O +24 V A20 A20 37 ALM+ Servo-Alarm output External power supply input GND B20 B20 36 ALM-INP+ 39 Positioning complete 38 INP-Origin proximity sensor 41 COM-CW limit sensor CCW limit sensor * Pulse train interface exclusive for line driver 44 PULSH1 Command pulse input PULSH2 45 GND +24 V 46 SIGNH1 Command sign input 1 DC24 V SIGNH2 47 Pulse train interface exclusive for line driver. * When connecting, please be sure to use twisted-pair cable Use this interface when you use pulse command frequency between 500 kpps and 4 Mpps

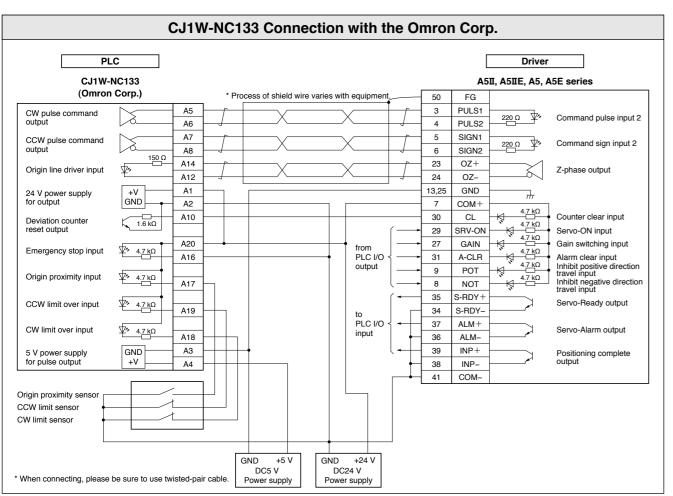


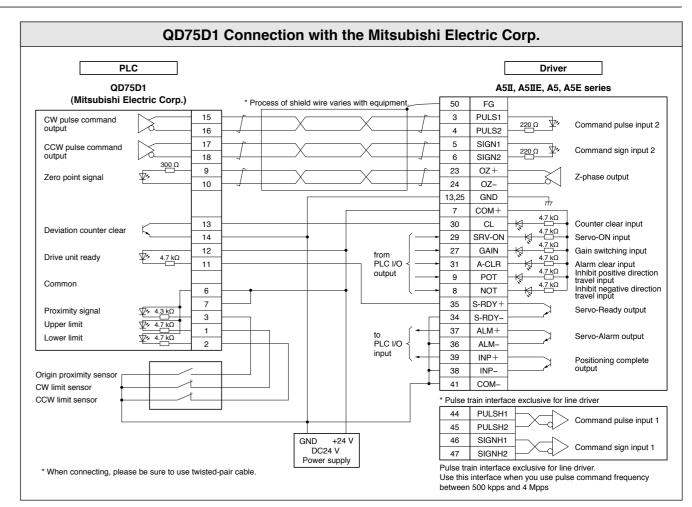


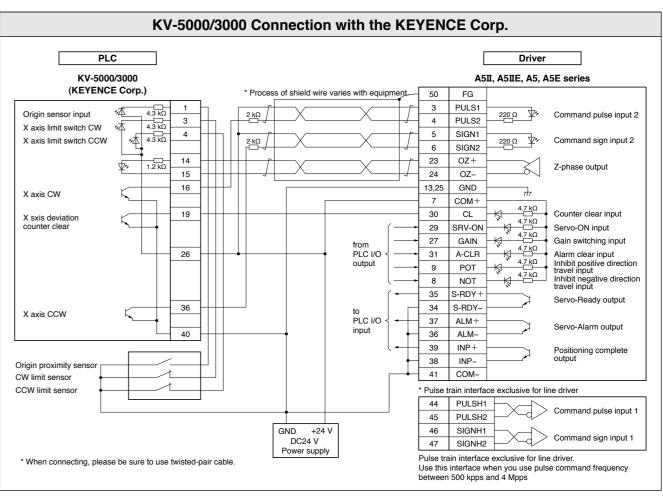




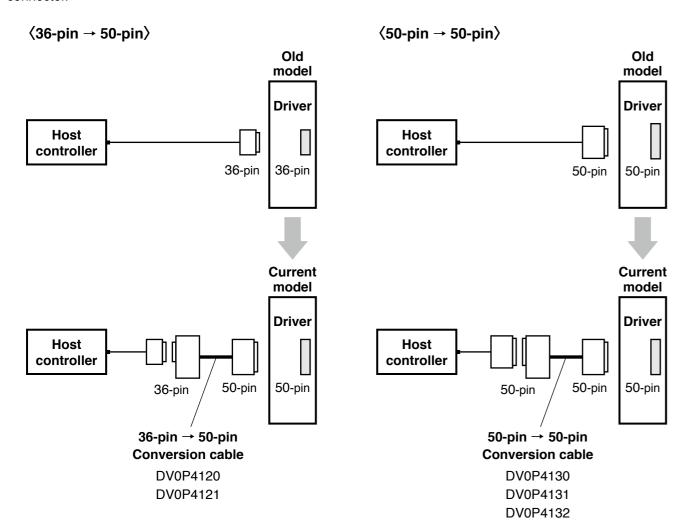








Driver and Controller



When selecting the cable, refer to the table below because the part number of the cable is specific to the control mode of the old model.

Old model	Control mode	Conversion cable part No.	Conversion wiring table	
X series XX series	Position/velocity control	DV0P4120	- P.280	
(36-pin)	Torque control	DV0P4121		
	Position control	DV0P4130	D 201	
V series (50-pin)	Velocity control	DV0P4131	- P.281	
	Torque control	DV0P4132	P.282	

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Conversion Wiring Table

		DV0P4120			DV0P4121		
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
2	24	Z-phase output	OZ-	24	Z-phase output	OZ-	
3	13	Signal ground	GND	13	Signal ground	GND	
4	19	Z-phase output	CZ	19	Z-phase output	CZ	
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2	
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1	
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2	
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1	
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH	
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL	
14	14	Speed command input	SPR	NC			
15	15	Signal ground	GND	15	Signal ground	GND	
16	43	Speed monitor output	SP	43	Speed monitor output	SP	
17	25	Signal ground	GND	25	Signal ground GND		
18	50	Frame ground	FG	50	Frame ground	FG	
19	21	A-phase output	OA+	21	A-phase output OA+		
20	22	A-phase output	OA-	22	A-phase output	OA-	
21	48	B-phase output	OB+	48	B-phase output	OB+	
22	49	B-phase output	OB-	49	B-phase output	OB-	
23	NC	•		NC			
24	NC			NC			
25	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	
28	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (–)	ALM-	
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (-)	S-RDY-	
	41	Power supply for control signal (–)	COM-	41	Power supply for control signal (-)	COM-	
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL	
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL	
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE	
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL	
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR	
35	17	Signal ground	GND	17	Signal ground	GND	
36	42	Torque monitor output	IM	42	Torque monitor output	IM	

^{* &}quot;NC" is no connect.

^{*} For external dimensions, refer to P.197.

A5 Family Connection Between Driver and Controller

Replacing Old Model Servo Driver with MINAS A5II, A5 series

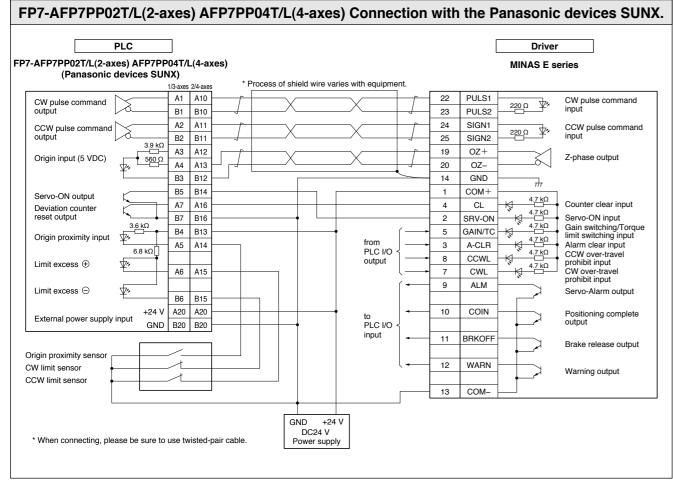
		DV0P4130			DV0P4131			
Pin No. on Old Model	Pin No. on Current	Signal Name	Symbol	Pin No. on Current	No. on Signal Name			
	Model			Model				
1	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL		
2	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL		
3	3	Command pulse input 2	PULS1	NC				
4	4	Command pulse input 2	PULS2	NC				
5	5	Command pulse sign input 2	SIGN1	NC				
6	6	Command pulse sign input 2	SIGN2	NC				
7	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+		
8	NC			NC				
9	NC			NC				
10	NC			NC				
11	11	External brake release signal	BRK-OFF+	11	External brake release signal	BRK-OFF+		
12	12	Zero-speed detection output signal	ZSP	12	Zero-speed detection output signal	ZSP		
13	13	Torque in-limit signal output	TLC	13	Torque in-limit signal output	TLC		
14	NC			14	Speed command input	SPR		
15	15	Signal ground	GND	15	Signal ground	GND		
16	16	CCW direction torque limit input	CCWTL	16	CCW direction torque limit input	CCWTL		
17	17	Signal ground	GND	17	Signal ground	GND		
18	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL		
19	19	Z-phase output	CZ	19	Z-phase output	CZ		
20	NC			NC	p and a special			
21	21	A-phase output	OA+	21	A-phase output	OA+		
22	22	A-phase output	OA-	22	A-phase output	OA-		
23	23	Z-phase output	OZ+	23	Z-phase output	OZ+		
24	24	Z-phase output	OZ-	24	Z-phase output	OZ-		
25	50	Frame ground	FG	50	Frame ground	FG		
26	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD		
27	27	Gain switching input	GAIN	27	Gain switching input	GAIN		
28	NC			33	Selection 1 input of internal command speed	INTSPD1		
29	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON		
30	30	Deviation counter clear input	CL	NC				
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR		
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE		
33	33	Command pulse inhibition input	INH	NC				
34	NC			NC				
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+		
36	NC	, ,		NC				
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+		
38	NC			NC NC	F			
39	39	Positioning complete output	COIN+	39	Speed arrival output	AT-SPEED+		
40	40	Torque in-limit signal output	TLC	40	Torque in-limit signal output	TLC		
.,	10	External brake release signal (–)	BRK-OFF-	10	External brake release signal (–)	BRK-OFF-		
	34	Positioning complete output (–)	COIN-	34	Speed arrival output (–)	AT-SPEED-		
41	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (–)	ALM-		
1	38	Servo-Ready output (–)	S-RDY-	38	Servo-Ready output (–)	S-RDY-		
	41	Power supply for control signal (–)	COM-	41	Power supply for control signal (–)	COM-		
42	42	Torque monitor output	IM	42	Torque monitor output	IM		
43	43	Speed monitor output	SP	43	Speed monitor output	SP		
44	25	Signal ground	GND	25	Signal ground	GND		
45	25	Signal ground	GND	25	Signal ground	GND		
46	25	Signal ground	GND	25	Signal ground	GND		
47	NC		GIAD	NC	- S. S. M. G. G. M.	G. TD		
48	48	B-phase output	OB+	48	B-phase output	OB+		
48	49	B-phase output	OB-	49		OB-		
					B-phase output			
50	50	Frame ground	FG	50	Frame ground	FG		

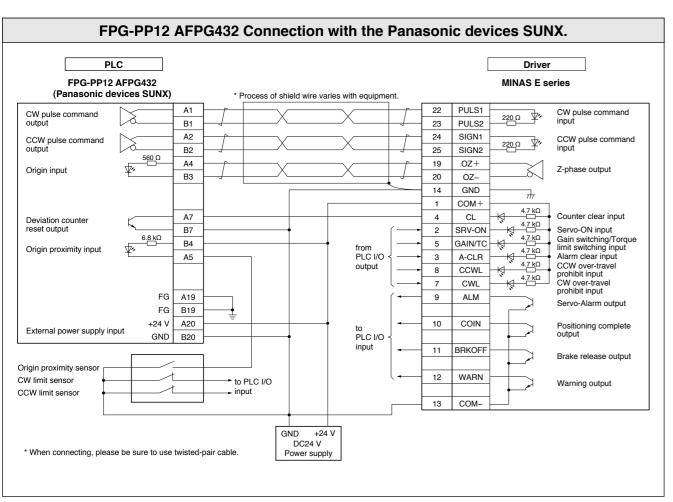
281

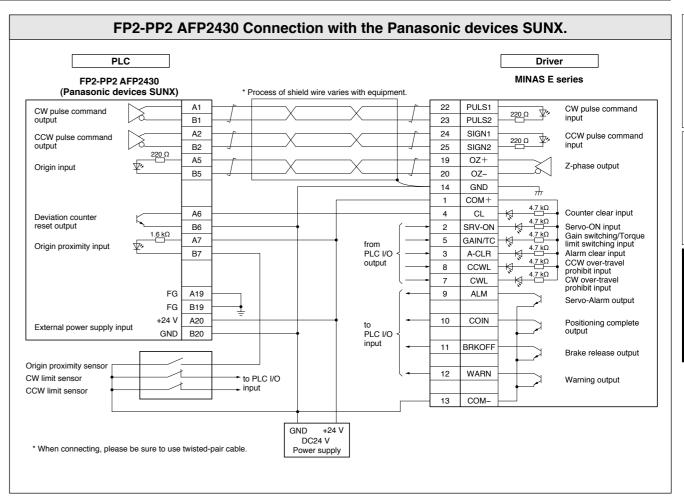
DV0P4132					
Pin No. on Old Model	Pin No. on Current	Signal Name	Symbol		
	Model				
1	8	CW over-travel inhibit input	CWL		
2	9	CCW over-travel inhibit input	CCWL		
3	NC				
4	NC				
5	NC				
6	NC -		201		
7	7	Power supply for control signal (+)	COM+		
8	NC				
9	NC NC				
11	11	External brake release signal	BRK-OFF+		
12	12	Zero-speed detection output signal	ZSP		
13	13	Torque in-limit signal output	TLC		
14	NC	Torque III-IIIII signal output	1120		
15	15	Signal ground	GND		
16	16	Torque command input	TRQR		
17	17	Signal ground	GND		
18	18	CW direction torque limit input	CWTL		
19	19	Z-phase output	CZ		
20	NC				
21	21	A-phase output	OA+		
22	22	A-phase output	OA-		
23	23	Z-phase output	OZ+		
24	24	Z-phase output	OZ-		
25	50	Frame ground	FG		
26	26	Speed zero clamp input	ZEROSPD		
27	27	Gain switching input	GAIN		
28	NC				
29	29	Servo-ON input	SRV-ON		
30	NC				
31	31	Alarm clear input	A-CLR		
32	32	Control mode switching input	C-MODE		
33	NC	<u> </u>			
34	NC				
35	35	Servo-Ready output	S-RDY+		
36	NC				
37	37	Servo-Alarm output	ALM+		
38	NC				
39	39	Speed arrival output	AT-SPEED+		
40	40	Torque in-limit signal output	TLC		
	10	External brake release signal (-)	BRK-OFF-		
	34	Speed arrival output (-)	AT-SPEED-		
41	36	Servo-Alarm output (–)	ALM-		
	38	Servo-Ready output (-)	S-RDY-		
	41	Power supply for control signal (-)	COM-		
42	42	Torque monitor output	IM		
43	43	Speed monitor output	SP		
44	25	Signal ground GND			
45	25	Signal ground GND			
46	25	Signal ground	GND		
47	NC				
48	48	B-phase output OB+			
49	49	B-phase output	OB-		
50	50	Frame ground	FG		

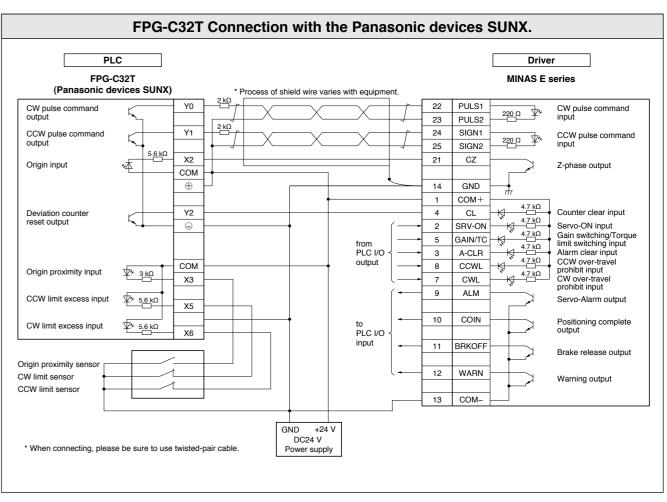
^{* &}quot;NC" is no connect.

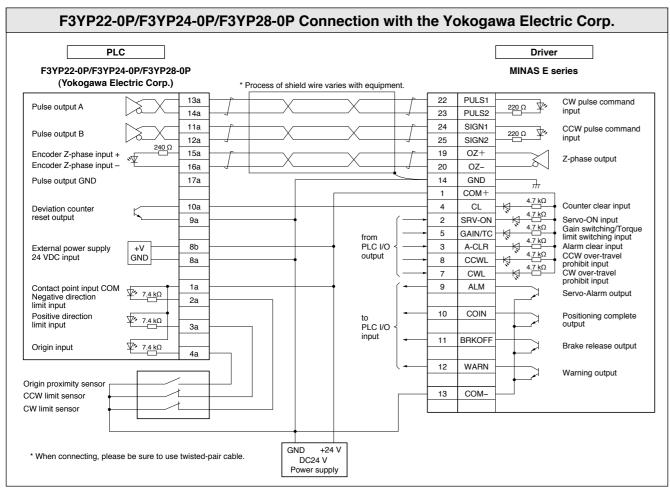
^{* &}quot;NC" is no connect.

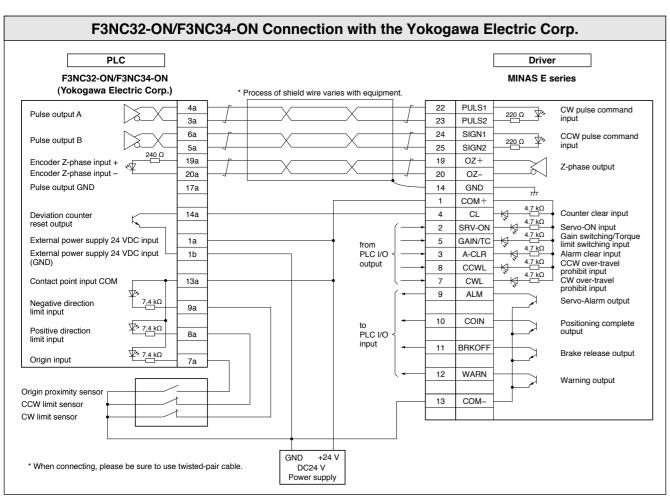


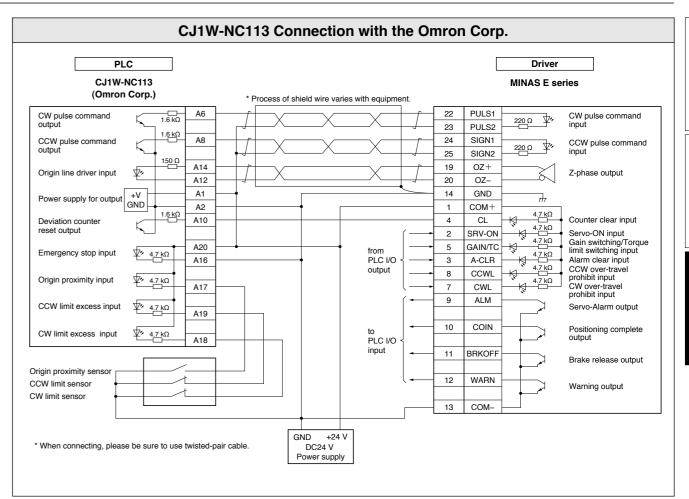


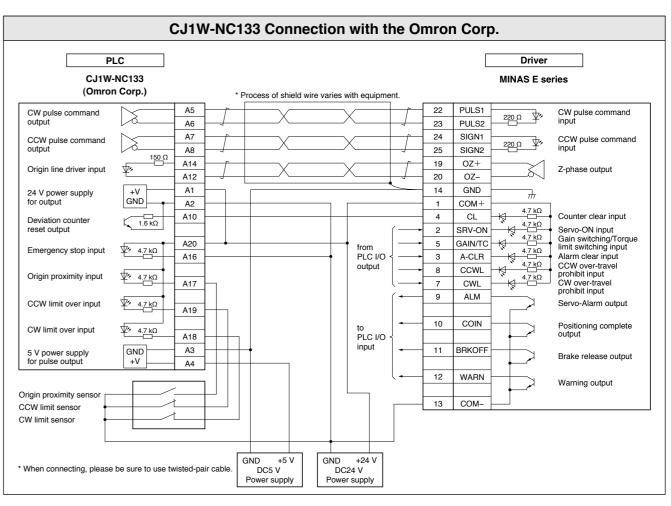








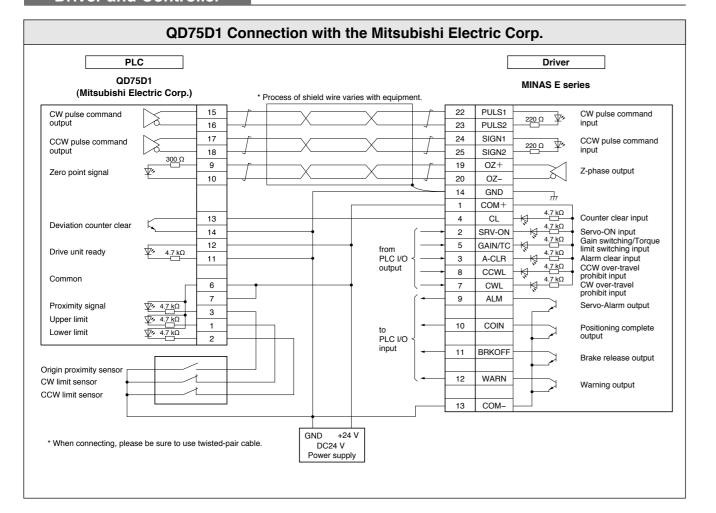




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	1		Web site	https://www.panasonic-electric-works	
	Panasonio Electrio Works Salas		De Rijn 4 (Postbus 211), 5684 PJ Best, Nederland e-mail https://www.panasonic-electric-works.		+31(0)499372727
Nederland	Panasonic Electric Works Sales Western Europe B.V.	PJ Best			+31(0)499372185
	Western Lurope D.v.	FJ Dest			*

Country	Company Name [Category]	City	Address	TEL
			Address	FAX
Czech Republic	Panasonic Electric Works Czech s.r.o. [Sales office]	Brno	Veveří 3163/111, 616 00 Brno, Czech +42	20(0)541217001
			+42	20(0)541217101
			e-mail https://www.panasonic-electric-works.com	/eu/93.htm
			Web site https://www.panasonic-electric-works.com/eu	u/index.htm
Spain	Panasonic Electric Works Espana S.A. [Subsidiary]	Madrid	Darajas r ark, carr devero 20, 20042 Madrid,	4-91-329-3875
			Spain +34	4-91-329-2976
			e-mail https://www.panasonic-electric-works.com.	
			Web site https://www.panasonic-electric-works.com.	
Romania	C.I.T. Automatizari SRL [Distributors]	Bucuresti	SOS. Buculesti, III.03, Ciologilla, III0V, NO-	0-21-255-0543
				0-21-255-0544
			e-mail office@citautomatizari.ro	
			Web site http://www.citautomatizari.ro	
	Panasonic Electric Works Hungary [Sales office]	Budapest	Neumann J. u. 1., 1117 Budapest, Hungary	6(0)19998926
Hungary				6(0)19998927
3. ,			e-mail https://www.panasonic-electric-works.com	
			Web site https://www.panasonic-electric-works.com.	
			arandonasse o, co-o riotaleaz,	3(0)417997050
Switzerland	Panasonic Electric Works Schweiz AG [Sales office]	Rotkreuz	101	1(0)417997055
			e-mail https://www.panasonic-electric-works.com.	
			Web site https://www.panasonic-electric-works.com	
	Electroprivod Ltd.		Office 417, litera 40, i olustrovskiy avertue,	-812-703-09-81
Russia	[Distributors]	St.Petersburg		-812-493-27-26
			Web site http://www.electroprivod.ru	
	BOSTEK TEKNOLOJI GELISTIRME VE		TUDICEV	0 232 433 8515
	ROBOT SIST.SAN.TIC.A.S [Distributors]	Izmir	+30 202 400 0001	
			e-mail sales@bostek.com.tr	
Turkey	Savior Kontrol Otomasyon [Distributors]		Web site http://www.bostek.com.tr/	2 040 400 0000
			Des danayi ditesi 104 dakar 107 Biok 140.02	0-216-466-3683
		Istanbul	7 7 100	0-216-466-3685
	Panasonic Industrial Devices Sales (Hong Kong) Co.,Ltd. (PIDSHK) [Sales office]	Hong kong		50.0500.7000
			Plaza, 77 Mody Road, S.T.S. East, Kowloon,	52-2529-7322
			. iong.tong	52-2598-9743
China	Panasonic Industrial Devices Sales	Chanahai	Floor 6, China Insurance Building, 166 East Road LuJiaZui PuDong New District,	6-21-3855-2442
China	(China) Co.,Ltd. (PIDSCN) [Sales office]	Shanghai	Shanghai, China +86	6-21-3855-2375
	Panasonic Industrial Devices Sales		8/F, Tower Three, Kerry Plaza, 1-1 Zhongxinsi +86	6-755-8255-8791
	(China) Co.,Ltd. (PIDSCN) [Sales office]	Shenzhen	Road, Futian District, Shenzhen, China	_
	[Gales Ullice]		12th Floor, Ambience Commercial, +91	1 104 6670400
	Industrial Division, Panasonic India Pvt Ltd. [Sales office]	0	Behind Ambience Mall,	1-124-6670400
		Gurgaon, Haryana		1-124-6670338
		,	Web site http://industrial.panasonic.com/sa/products compressors/fa-motors	s/motors-
	Lubi Electronics [Distributors]			1-79-39845300
		Gandhinaga,	Nana Chiloda, Dist.: Gandhinagar - 382330, Gujarat, India +91	1-79-39845599
India		Gujarat	Web site http://www.lubielectronics.com	
	Luna Bearings [Distributors]	Mumbai, Maharashtra	1.04	1-22-23455052
			Marrie de 100000 Mais analista de 1	1-22-23433032
			Web site http://www.lunabearings.com	
	Vashi Electricals Pvt. Ltd. [Distributors]	Mumbai, Maharashtra	A/6 Plot No 74 Shree Ganesh Compley	4 0500 02:25
			Behind Gupta Compound, Dapole Road,	1-2522-661600
			Mankoli Naka, Bhiwandi - 421305, Maharashtra, India +91	1-2522-661620
			Web site http://www.vashielectricals.com	
		I	Intp.// ** ** ** . * aoi ilolooti loais.com	

	Country	Company Name [Category]	City	Address	TEL
	Country				FAX
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	Korea				+82-2-2052-1053
	Taiwan	Panasonic Industrial Devices Sales Taiwan Co.,Ltd. [Sales office]	Taipei	12F, No.9, SongGao Rd., Taipei 110, Taiwan, R.O.C.	+886-2-2757-1900
	iaiwan				+886-2-2757-1977
		Panasonic Industrial Devices Sales Asia Pte.Ltd. [Sales office]	Singapore	No.3 Bedok South Road Singapore 469269	+65-6390-3718
					+65-9435-6844
	Singapore	Intermech Machinery Pte.Ltd. [Distributors]	Singapore	2 Woodlands Sector 1 #03-25, Woodlands	+65-6751-5088
				Spectrum 1 Singapore 738068	+65-6759-2122
				Web site http://www.intermech.com.sg	
	Malaysia	Panamech Machinery Sdn Bhd [Distributors]	Kuala Lumpur	No.14, Lorong Sanggul 1C, Bandar Puteri, 41200 Klang, Selangor Darul Ehsan	+60-3-5161-7876
					+60-3-5161-7136
				Web site http://panamech.com.my/	
		Panamech (PG) Sdn Bhd [Distributors]	Penang	Sri Relau Komplex, Unit 1-3-11, Persiaran Bukit Jambul 1, 11900 Penang	+60-4-643-8266
					+60-4-645-1639
Sot				Web site http://panamech.com.my/	
South-eastern Asia	Thailand	Premier Automation Center Co.,Ltd. [Distributors]	Bangkok	73 Soi Ladkrabang 30 Ladkrabang	+66-2181-2299
				Ladkrabang Bangkok 10520	+66-2181-2288
				Web site http://www.premier-ac.co.th	
		Plenty Island (Thai) Co.,Ltd. [Distributors]	Bangkok	3 Soi Charoenrat 10, Charoenrat Road.,	+66-2291-9933
				Bangkhlo, Bangkhorlaem, Bangkok 10120	+66-2291-2065
				Web site http://www.plenty.co.th	Г
	Indonesia ·	PT. Handal Yesindo Sejahtera [Distributors]	Surabaya	Jl. Raya Kutisari 8A, Surabaya, Indonesia	+62-31-843-8844
					+62-31-841-4333
				Web site http://www.handalyesindo.com	Г
		PT.Riasarana Electrindo [Distributors]	Jakarta	Jl. Prof. Dr. Latumenten Grogol Permai blok D No. 8-15 Jakarta 11460, Indonesia	+62-21-564-9178
					+62-21-566-7405
				Web site http://www.risacorps.com	
	Philippines	Movaflex Designs Unlimited, Inc. [Distributors]	Manila	136 Calbayog Street, Mandaluyong City, Metro Manila, Philippines.	+63-2-881-3636
					+63-2-998-3881
				Web site http://www.movaflex.com/	