- 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 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
- · 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/i_e/25000/motor_fa_e/motor_fa_e.html

Contact to

Panasonic Corporation, Appliances Company, **Motor Business Division**

1-1 Morofuku 7-chome, Daito, Osaka 574-0044, Japan Tel : +81-72-871-1212 Fax: +81-72-870-3151





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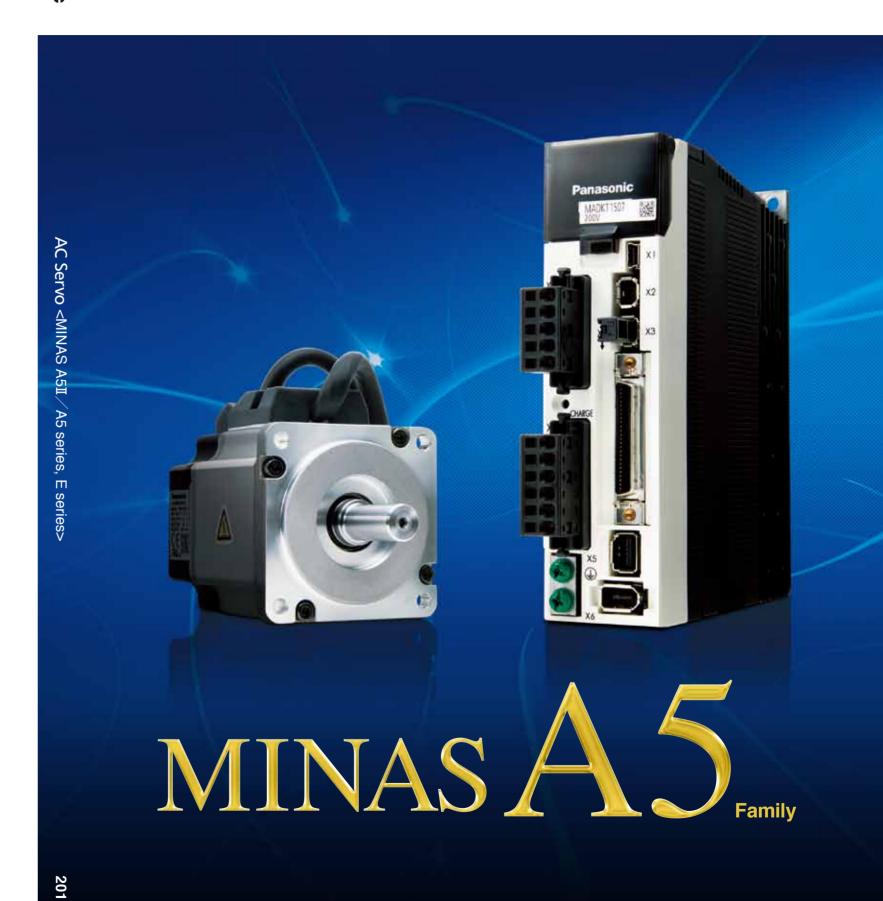
The contents of this catalog apply to the products as of July 2013.

ISO9001 Certificate division **CERTIFICATE OF APPROVAL ISO9001**

- 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
- This product is for industrial equipment. Don't use this product at general household

Panasonic

AC Servo 2013/7 **MINAS** E series



Panasonic Corporation, Appliances Company, Motor Business Division http://industrial.panasonic.com/ww/i e/25000/motor fa e/motor fa e.html

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)

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 5.0 kW rotaly 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

General-purpose RS485 communication AE-LINK support type



Rated output:

50 W to 15.0 kW

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

High-speed communication "Realtime Express" support model

Ultra high-speed Network type



Rated output:

Rated output:

10 W. 20 W. 30 W

Standard Ethernet cable^{*2} using

50 W to 15.0 kW

Synchronized motion and precise CP control up to 32 axes with 100 Mbps communication

DC 24 V type

Synchronized motion and precise CP control

up to 32 axes with 100 Mbps communication

Standard Ethernet cable 2 using

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 5.0 kW rotaly AC servo motor

- Position, Speed and Thrust controls can be done by using the "Realtime Express"
- Drastically reduced setup time by automatic
- Automatic magnetic pole detection function will detect the magnetic pole position of the

Linear motor control, DC 24 V type



Capacity of applying Linear motor:

Compatible with 30 W rotaly AC servo motor

- Position, Speed and Thrust controls can be done by using the "Realtime Express"
- Drastically reduced setup time by automatic

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

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Quicker, Wiser and Friendlier A5II 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

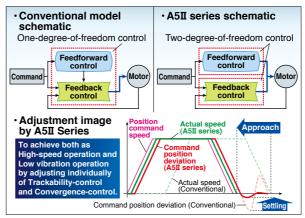


Realizes guick and accurate movement. Fast response & High-precision positioning

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

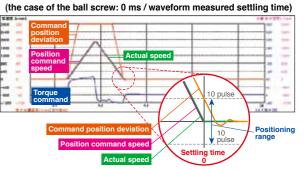


· Full-closed control and torque control are not applicable to 2DOF control system

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



speedy setup.

Newly developed feature "FitGain" maximizes the charecteristics 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.

Equipped with "FitGain" function to realize

· Fit gain adjustment window



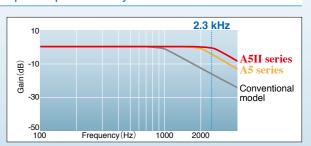
· Automatically proposes various settings

Recom	mendation setting M	onuel petis	19	
Theore	resultacomes as to	fors Pier	nie choose reco	mentation
Adv	strest objectve: Full	read, fie	spanse pielsre	otisky, Midde
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2.	Morram stabilizati.	22	92	0.0
F	Deskyrete overeft	22	34	10
B 0	Designeta stecila.	19	15	95
	PHYS FORTY SHETTY	22	34	1.0
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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.

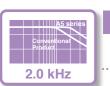


^{*} Comparison with conventional product A5-series.

Features

MINAS A 5 Family

) UiC

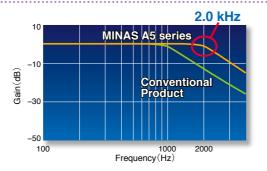


2.0 kHz Frequency Response

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 2,500 p/r

5II, A5 Series 1,048,576 p/r [1.04 million pulses]



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



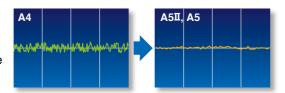




Example application Semiconductor production equipment, textile machinery, etc.

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

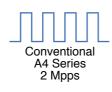


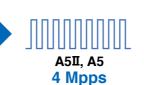
The Input/Output Pulse 4 Mpps

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



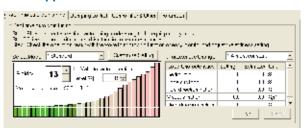
Example application Semiconductor production equipment, food processing machinery, etc.

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

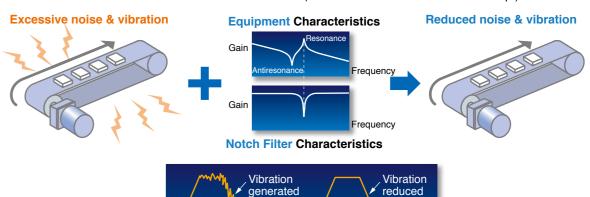
A5II

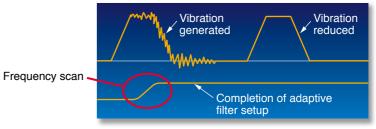
Example application Semiconductor production equipment, food processing machinery, etc.

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 5,000 Hz. This approach enables depth adjustment within this frequency range. (Two of the filters share the auto set-up.)





Damping filter

MINAS A 5 Family

Example application Semiconductor and LCD production equipment, etc.

Safe

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

Example application

Manual/Auto Damping Filter

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.

With Damping Filter Vibration-free

Simulation

Motion Simulation

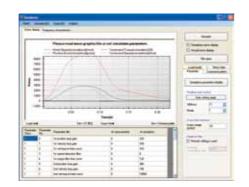
Example application General production machinery, etc.

Chip mounters, food processing machinery, robots,

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 A5 A5IIE A5E

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

Innovative core



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 to 6 kg) reduction in motor weight in the 1 kW and larger class when compared with conventional motors.



amples	for	MSM	or	MDM1	

Series	A 4	A5II A5	Weight Reduction
MSM 1 kW	4.5 kg	3.5 kg	▲1 kg
MSM 2 kW	6.5 kg	5.3 kg	▲1.2 kg
MDM 1 kW	6.8 kg	5.2 kg	▲1.6 kg
MDM 2 kW	10.6 kg	8.0 kg	▲ 2.6 kg

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

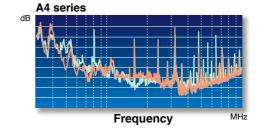
Low noise

Example application

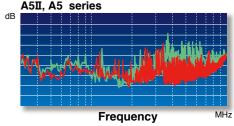
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market

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.

7

MINAS A 5 Family









PANATERM Set-up Support Software

A5II A5 A5IIE A5E

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

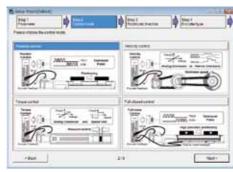
The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A5 Family through the USB interface.

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 A5II, A5IIE)



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

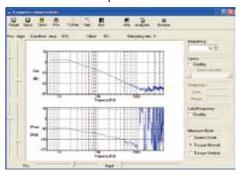
The Encoder Temperature Monitor is a new function capable of **real-time measurement of the interior temperature of the encoder**, **something that has been difficult to achieve in the past**. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided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

Other New Function

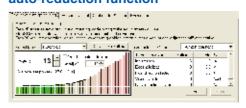
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.

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 redcution.

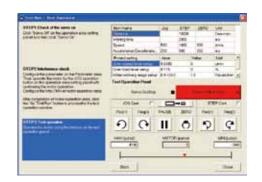


Added New screen for gain adjustment, equipped with stiffness oscillation auto-reduction function



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, AII, E or A4 series), consult our distributors.

lardware co	nfiguration	
	CPU	Pentium III 512MHz or more
	Memory	256MB or more (512MB recommended)
Personal	Hard disk capacity	Vacancy of 512MB or more recommended
computer		Windows® XP SP3 (32-bit Ver.), Windows® VISTA SP1 (32-bit Ver.)
	OS	Windows® 7 (32-bit Ver., 64-bit Ver.)
		[English, Japanese, Chinese or Korean version]
	Serial communication port	USB port
Dioploy	Resolution	1024 × 768pix or more (desirably 1024 × 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/i_e/25000/motor_fa_e/motor_fa_e.html

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



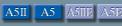
AB-phase linear scale (for general all-purpose products) or serial scale (for products with Panasonic's exclusive format) scales can be used (P.14).

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



 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



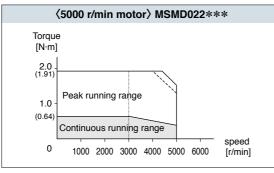
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not 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.

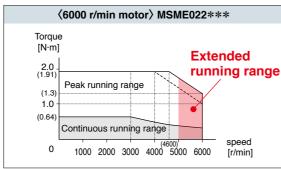
6,000-rpm capability



The MSME motor (under 750 W) can accommodate a maximum speed of 6,000 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.

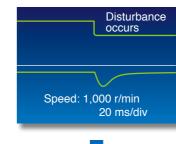
Disturbance Observer A5II A5 A5IIE A5E



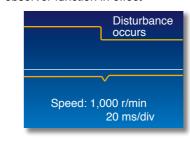


By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

Disturbance observer function not in effect



Disturbance observer function in effect

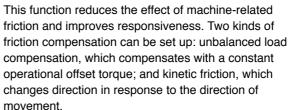


Torque Feed Forward A5II A5 A5IIE

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





3-Step Gain

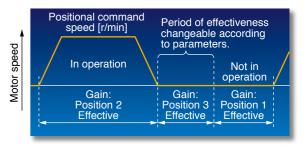


A 3-step gain switch is available in addition to the normal gain switch.

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.





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











(ASII, A5 series) (ASIE, A5E series)			
		Driver	Motor
EC Directives	EMC Directives	EN55011 EN61000-6-2 IEC61800-3	_
	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
	Machinery Directives Functional safety ¹¹	ISO13849-1(PL d) (Cat. 3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standards		UL508C (E164620)	UL1004-1 (E327868: 50 W to 750 W, 6.0 kW to 15.0 kW) UL1004 (E327868: 400 W(400 V), 600 W(400 V), 750 W(400 V), 0.9 kW to 5.0 kW)
CSA Standards		C22.2 No.14	C22.2 No.100
Korea Radio Law (KC) *2		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

- 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.

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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	_		speed after ation: 4 Mpps
		SR75	0.01 to 1	3.3
	Magnagala Co. Ltd	SR85	0.01 to 1	3.3
Serial Type (Incremental)	Magnescale Co., Ltd.	SL700-PL101RP/RHP	0.1	10
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		SL710-PL101RP/RHP	0.1	10
	MicroE Systems	MII5000si/P MII6000si/P	0.1 ^{*4}	5 ^{*5}
	Mitutous Comparation	AT573A	0.05	2.5
	Mitutoyo Corporation	ST778A(L)	0.1	5
	Magnagala Ca I td	SR77	0.01 to 1	3.3
	Magnescale Co., Ltd.	SR87	0.01 to 1	3.3
			0.001	0.4
Serial Type (Absolute)	Renishaw plc	RESOLUTE	0.05	20
			0.1	40
		SVAP	0.05	2.5
	Fagar Automation C. Casa	SAP	0.05	2.5
	Fagor Automation S.Coop	GAP	0.05	2.5
		LAP	0.1	2

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

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^{*4} It changes by the setting.

^{*5} At 0.1 μm resolution.

MINAS A 5 Family

Model Designation

Motor Line-up

MINAS A5 Family

Motor Line-up

IVIO	Motor Line-up																
					Rated	Rotary 6	encoder										
	Мо	tor	Voltage	Rated output (kW)	rotational speed (Max. speed) (r/min)	20-bit incremental	17-bit absolute	Enclosure (*1)	Features	Applications							
	MSMD	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)	J			speed applicationSuitable for all applications	BonderSemiconductor production equipment							
Low inertia			100 V 200 V	0.05 0.1 0.2 0.4	3000 (6000)	0	0	IP67	Small capacitySuitable for high speed application	Packing machines etc							
nertia	мемп		200 V	0.75	(6000)				Suitable for all applications								
	MSME		400 V	0.75 1.0 1.5	3000 (5000)				Middle capacity Suitable for the machines directly coupled with hall.	• SMT machines • Food machines							
			200 V 400 V	00 V 2.0 3.0	0	O IP65 ^(*2)	coupled with ball screw and high stiffness and high repetitive applica-	 LCD production equipment 									
				4.0 5.0	(4500)				tion	etc							
	MDME	2			OME SALE				OME A	ирме	2.0 3.0 (3000 4.0 5.0	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low	• Conveyors • Robots • Machine
					200 V 400 V	7.5 (*3)	1500				stiffness machines with belt driven	tool etc					
Midd					.,,	,,,		•••	•	•••	•			11.0 ^(*3) 15.0 ^(*3)	(3000) 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							
	MHMD	100 V 200 V 0.4 3000 (5000)	0 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										
inertia	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 manufacturing couling							
					7.5	1500 (3000)				moment of inertia	equipment etc						

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

Servo Motor

M S M E 5 A Z G 1 S ** Motor specifications

Symbol Type MSMD Low inertia (50 W to 750 W) MSME Low inertia (50 W to 5.0 kW) MDME Middle inertia (400 W to 15.0 kW) MFME Middle inertia (1.5 kW to 4.5 kW) MGME Middle inertia (0.9 kW to 6.0 kW) MHMD High inertia (200 W to 750 W) MHME High inertia (1.0 kW to 7.5 kW)

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 specifications				
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	1,048,576	5
S	Absolute	17-bit	131,072	7

* S: can be used in incremental.

Special specifications

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

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

		Shaft		Holding	g brake	Oil s	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

Symbol		Shaft Holding brake			Oil seal		
Syllibol	Round	Key-way	without	with	without	with	
С	•		•			•	
D	•					•	
G		•	•			•	
Н		•		•		•	

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			
2	200 V			

Rotary encoder specifications						
Symbol	Format	Pulse counts	Resolution	Wires		
G	Incremental	20-bit	1,048,576	5		
S	Absolute	17-bit	131,072	7		

Gear ratio, gear type

Cumbal	Gear	Motor output (W)			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 100W is not prepared.

Motor structure

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

Servo Driver

Speed, Position, Torque, Full-closed type	M	Α	D	K	T	1	5	0	5	*	* *	
Position control type	M	Α	D	K	Т	1	5	0	5	E	* *	
Frame symbol *								$\overline{}$		\top	Only posit	ion control

Power device Max.

:	*	Special specification
	-	

Frame symbol *-

	-		
Symbol	Frame	Symbol	Frame
MAD	Frame A	MED	Frame E
MBD	Frame B	MFD	Frame F
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	A5IIE series
Н	A5 series	A5E series

current rating Symbol Current rating

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

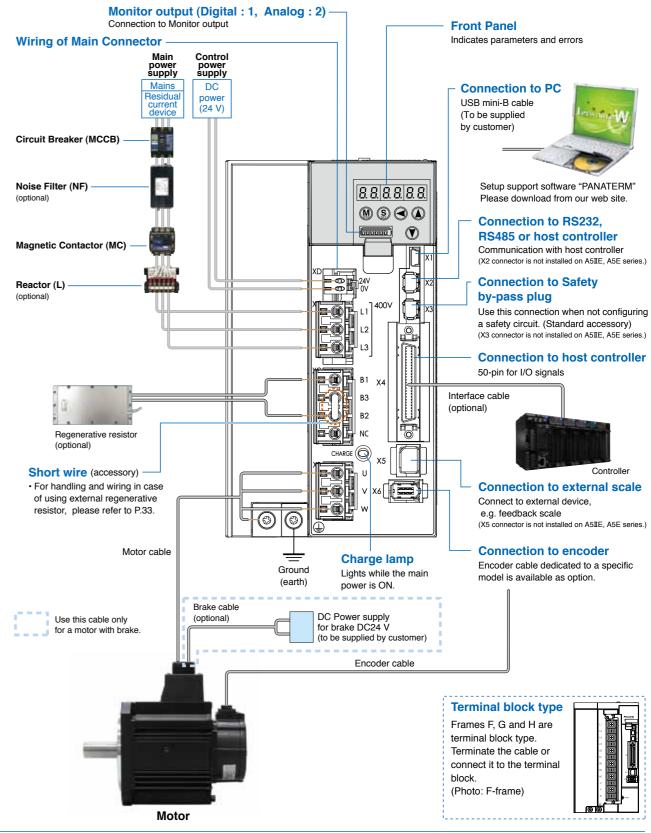
	t detector		_
Symbol	Specifications	Symbol	Specification

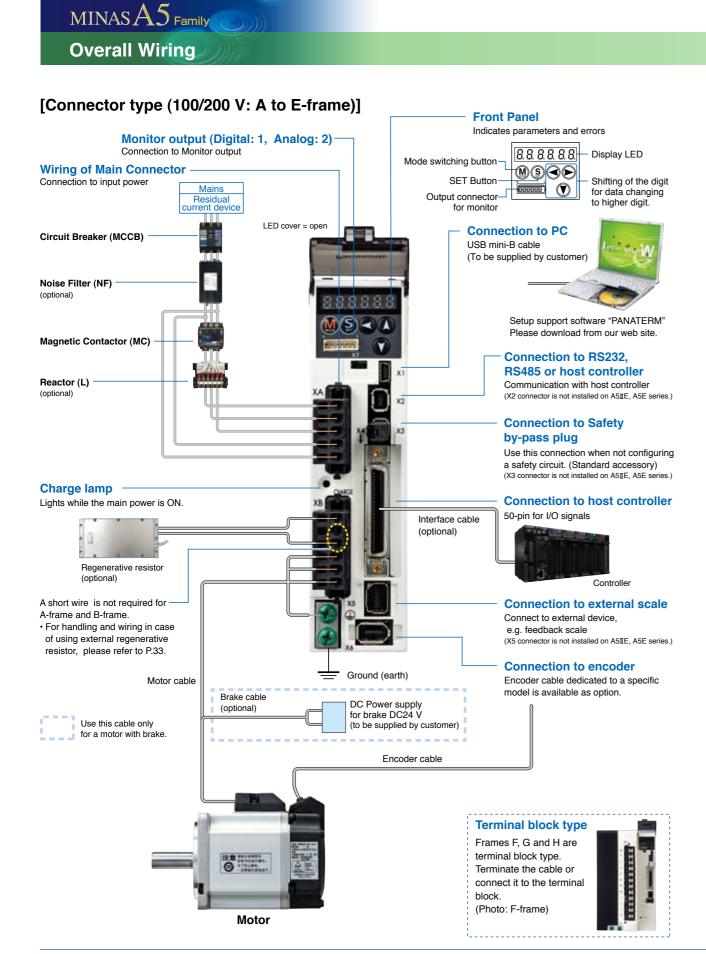
Special specifications

Symbol	Specifications	Symbol	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
20	20 A	B4	240 A
30	30 A		

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

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





<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.



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

[Connector type (400 V: D, E-frame)]

attention.

Positive direction
(CCW)



Driver and List of Applicable Peripheral Equipments

MINAS A5 Family

Driver	Applicable motor	Voltage	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 *1	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *3	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *4	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 DV0PM20042	DV0P4190 DV0P1450	-							
MDDU	MSME	200 V Single 100 V	200 W	approx. 0.5 kVA	10 A	DV0P4170	DV0P4190	-	20 A	0.75 mm²/ AWG18				0.75 mm²/ AWG18	0.28 mm ² to 0.75 mm ² / AWG22 to
MBDH MBDK	MSMD MHMD	Single/ 3-phase,	400 W	approx. 0.9 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450		(3P+1a)	600 VAC or more				600 VAC or more	AWG18 100 VAC
MODIL	MSME	200 V Single 100 V	400 W	approx. 0.9 kVA		D V 0 F W 20042	DV0P1490	_				0.75 mm²/ AWG18			or more
MCDH MCDK	MSMD MHMD	Single/ 3-phase,	750 W	approx. 1.3 kVA		DV0PM20042						600 VAC or more			
	MDME MHME	200 V	1.0 kW	approx. 1.8 kVA	15 A										
	MGME	Single/	0.9 kW	approx. 1.8 kVA			DV0P4190	DV0P1460			Con		Con		
	MSME MHME	3-phase, 200 V	1.0 kW	approx. 1.8 kVA	20 A	DV0P4220	DV0P1450	2 10. 1.00	30 A (3P+1a)		nectio		nectio		
	MDME MFME		1.5 kW	approx. 2.3 kVA							n to ex		n to ex		
MDDH	MSME MDME		400 W	approx. 0.9 kVA				_			Connection to exclusive connector		Connection to exclusive connector		
MDDK			600 W	approx. 1.2 kVA							conne		conne		
	MSME MSME		750 W	approx. 1.6 kVA		FN258L-16-07				2.0 mm ² /	ector	0.52 mm²/	ector	2.0 mm²/	
	MDME MHME	3-phase, 400 V	1.0 kW	approx. 1.8 kVA	10 A	(Recommended component)	DV0PM20050		20 A (3P+1a)	AWG14 600V VAC or more		AWG20 100 VAC or more		AWG14 600V VAC or more	
	MGME MSME MDME		0.9 kW	opprov						or more		or more		or more	
	MFME MHME		1.5 kW	approx. 2.3 kVA											
	MDME MSME	3-phase,	2.0 kW	approx. 3.3 kVA				DV0P1460 RJ8035	60 A			0.75 mm²/ AWG18			
MEDH	MHME	200 V	2.5 kW	approx. 3.8 kVA	30 A	DV0PM20043	DV0P1450	(Recommended) component *5	(3P+1a)			600 VAC or more			
MEDK	MSME MDME	2 phase	2.0 kW	approx. 3.3 kVA		FN258L-16-07			30 A			0.52 mm²/ AWG20			
	MHME	3-phase, 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		3.0 kW	approx.					60 A (3P+1a)		11 mm or smaller		11 mm or smaller		
	MSME MGME MDME			4.5 kVA				DV0P1460				0.75 mm²/			
	MHME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA	50 A	DV0P3410	DV0P1450	RJ8035 (Recommended) component			/ <u>L</u> φ5.3	AWG18 600 VAC	<u>φ5.3</u>		0.75 mm ² /
	MFME		4.5 kW	approx. 6.8 kVA				*5	100 A (3P+1a)		Terminal block M5	or more	Terminal block M5		AWG18 100 VAC
	MDME MHME		5.0 kW	approx. 7.5 kVA					(* .,	3.5 mm²/	CIVI		CIVI	3.5 mm ² /	or more
MFDH MFDK	MSME		2.0 kW	approx.						AWG12 600 VAC				AWG12 600 VAC	
	MSME		2.0 RVV	3.8 kVA						or more				or more	
	MDME MGME MHME		3.0 kW	approx. 4.5 kVA							10 mm or smaller		7 mm or smaller		
	MSME MDME	3-phase, 400 V	4.0 kW	approx. 6.0 kVA	30 A	FN258L-30-07 (Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)		φ4.3	0.75 mm ² / AWG18 100 VAC			
	MHME	400 1	4 5 1/1/	approx. 6.8 kVA		component /			(51 +14)		Terminal	or more	/ φ3.2 Terminal		
	MGME MSME		4.5 kW	approx.							block M4		block M3		
	MDME MHME		5.0 kW	7.5 kVA											
	MDME	3-phase,	7.5 kW	approx. 11 kVA approx.	CO 4	FS5559-60-34	DV0D4.450		100 A		11 mm or smaller	0.75 mm²/ AWG18	10 mm or smaller		
MGDH	MGME MHME	200 V	6.0 kW 7.5 kW	9.0 kVA approx.	60 A	(Recommended) component	DV0P1450		(3P+1a)	5.3 mm²/ AWG10		600 VAC or more		13.3 mm²/	
MGDK			7.5 kW	11 kVA approx. 11 kVA		FN258-42-07		-		600 VAC or more	<u>φ5.3</u>	0.75 mm²/	/ <u></u> Δ φ5.3	AWG6 600 VAC	
	MGME	3-phase, 400 V	6.0 kW	approx. 9.0 kVA approx.	30 A	or FN258-42-33 (Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)		Terminal block	AWG18 100 VAC	Terminal block	or more	
	MHME		7.5 kW 11 kW	11 kVA approx.	100 A	component /		RJ8095 (Recommended component)			M5	or more	M5		
		3-phase, 200 V		17 kVA approx.		FS5559-80-34 (Recommended)	DV0P1450	T400-61D (Recommended) component	150 A (3P+1a)		16 mm or smaller	0.75 mm ² / AWG18 600 VAC	10 mm or smaller	21.1 mm²/ AWG4	
MI ISI		250 V	15 kW	22 kVA	125 A	component /		*5	(UF + Id)	13.3 mm²/		or more		600 VAC or more	
MHDH	MDME		11 kW	approx. 17 kVA	50 A	FN258-42-07				600 VAC	AWG6 600 VAC Φ6.4		/ <u>μ</u> 4.3	13.3 mm²/ AWG6 600 VAC	
		3-phase, 400 V				or FN258-42-33 (Recommended)	DV0PM20050		100 A (3P+1a)	00 A or more	Terminal block M6	0.75 mm²/ AWG18 100 VAC	Terminal block M4	or more 21.1 mm ² /	
			15 kW	approx. 22 kVA	60 A	component		U	(3P+1a)	(3P+1a)	M6 100 V	or more		AWG4 600 VAC or more	

- *1 For the external dynamic brake resistor, use the magnetic contactor with the same rating as that for the main circuit.
- *2 When use the external regenerative resistor of the option (DV0PM20058, DV0PM20059), use the cable with the same diameter as the main circuit cable.
- *3 For the ground screw, use the same crimp terminal as that for the main circuit terminal block.
- *4 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)
- *5 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 (Lis

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 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	Terminal 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	M3	0.4 to 0.6	МЗ	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	М3	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	und 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.

Motor				Driver			Power			Optional pa	Optional parts					
	Dower	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series Part No.		capacity	Encode	er Cable	Motor	Cable	Brake Cable	External	Reactor	Noise Filter
Motor series	Power supply	(W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Frame	rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5	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 \diamondsuit T1105E	A-frame	Approx. 0.4						DV0P4280	DV0P227	
	Single phase	100	MSMD011 □ 1 *	51	MAD 🔷 T1107	MAD ◇ T1107E	7 Cilane	Approx. 0.4						D V 01 4200	DVOI ZZI	DV0P4170
	100 V	200	MSMD021 □ 1 *	53	MBD ◇ T2110	MBD ♦ T2110E	B-frame	Approx.						DV0P4283	DV0P228	
MSMD		400	MSMD041 ☐ 1 *	55	MCD ♦ T3120	MCD ◇ T3120E	C-frame	Approx. 0.9	MEEOA	MEEOA	MEMOA		1451400	DV0P4282	2 1 01 220	DV0PM2004
(Leadwire) type		50	MSMD5AZ ☐ 1 *	50	MAD \diamondsuit T1505	MAD \diamondsuit T1505E		Approx.	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE	MFMCA 0 * * 0EED	_	MFMCB 0 * * 0GET	DV0P4281	DV0P227	
3000 r/min	Single phase/	100	MSMD012 ☐ 1 *	52	MAD \diamondsuit T1505	MAD \diamondsuit T1505E	A-frame	Approx.		Note) 7					DV0P220	DV0P4170
	3-phase	200	MSMD022 ☐ 1 *	54	MAD 🔷 T1507	MAD 🔷 T1507E		Approx. O.5 Approx.								DV0PM20042
5	200 V	400	MSMD042 □ 1 *	56	MBD ◇ T2510	MBD ◇ T2510E	B-frame	0.9 Approx.						DV0P4283	DV0P228	
Low ine		750	MSMD082 1 *	57	MCD ♦ T3520	MCD ◇ T3520E	C-frame	1.3 Approx.							DV0P220	DV0PM20042
inertia	Oin ala	50	MSME5AZ 1 *	65	MAD \diamondsuit T1105	MAD \Diamond T1105E	A-frame	0.4 Approx.	MFECA	MFECA 0 * * 0MJE	MFMCA 0 * * 0NJD		MFMCB 0 * * 0PJT	DV0P4280	DV0P227	B. (4B.) . = 4
	Single phase	100	MSME011 1 *	67	MAD \diamondsuit T1107	MAD \diamondsuit T1107E	_	0.4 Approx.	O * * OMJD (For movable, direction of motor shaft)	(For movable, direction of motor shaft	For movable, direction of motor shaft		For movable, direction of motor shaft	D) (0D (000		DV0P4170
	100 V	200	MSME021 1 *	69	MBD ♦ T2110	MBD ♦ T2110E		0.5 Approx.	MFECA 0 * * 0MKD	MFECA 0 * * 0MKE	MFMCA 0 * * 0NKD / For movable,		MFMCB 0 * * 0PKT / For movable, /	DV0P4283	DV0P228	DVODMOOOA
MSME (Connector)		400 50	MSME041 ☐ 1 * MSME5AZ ☐ 1 *	71 66	MCD ♦ T3120 MAD ♦ T1505	MCD ♦ T3120E MAD ♦ T1505E	C-trame	0.9 Approx.	For movable, opposite direction of motor shaft	For movable, opposite direction of motor shaft	opposite direction of motor shaft MFMCA	_	opposite direction of motor shaft	DV0P4282		DV0PM2004
\ type / 3000 r/min	a	100	MSME012 □ 1 *	68	MAD \diamondsuit T1505	MAD \diamondsuit T1505E	A_frame	0.5 Approx.	MFECA 0 * * 0TJD	MFECA 0 * * 0TJE	0 * * 0RJD / For fixed, \	_	0 * * 0SJT	DV0P4281	DV0P227	DV0D4470
	Single phase/	200	MSME022 □ 1 *	70	MAD \diamondsuit T1507	MAD ♦ T1507E	, Ciraine	O.5 Approx.	For fixed, direction of motor shaft/	For fixed, direction of motor shaft	direction of motor shaft MFMCA		direction of motor shaft/		DV0P220	DV0P4170 DV0PM2004
	3-phase 200 V	400	MSME042 □ 1 *	72	MBD \diamondsuit T2510	MBD \diamondsuit T2510E	B-frame	0.5 Approx. 0.9	MFECA 0 * * 0TKD For fixed,	MFECA 0 * * 0TKE For fixed,	0 * * 0RKD For fixed, opposite direction		0 * * 0SKT For fixed, opposite direction	DV0P4283	DV0P228	_
		750	MSME082	73	MCD ♦ T3520	MCD ♦ T3520E	C-frame	Approx. 1.3	opposite direction of motor shaft	opposite direction of motor shaft	of motor shaft Note) 6		of motor shaft		DV0P220	DV0PM20042
	Single	200	MHMD021 □ 1 *	59	MBD \diamondsuit T2110	MBD ♦ T2110E	B-frame	Approx.						DV0P4283		DV0P4170
∓ MHMD	phase 100 V	400	MHMD041 □ 1 *	61	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx.						DV0P4282	DV0P228	DV0PM20042
9 /Loadwiro	Single	200	MHMD022 □ 1 *	60	MAD \diamondsuit T1507	MAD ◇ T1507E	A-frame	Approx.	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE	MFMCA 0 * * 0EED	_	MFMCB 0 * * 0GET		DV0P227 DV0P220	DV0P4170
type 3000 r/min	phase/ 3-phase	400	MHMD042 ☐ 1 *	62	MBD \diamondsuit T2510	MBD ◇ T2510E	B-frame	Approx.	3 35,1141	Note) 7	O OLLD		J JULI	DV0P4283	DV0P228	DV0PM2004
	200 V	750	MHMD082 □ 1 *	63	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx.							DV0P220	DV0PM2004

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.

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

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

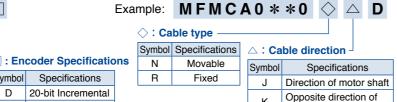
· Encoder cable Example: $MFECA0**0 \diamondsuit \triangle \square$ Symbol Specifications △ : Cable direction Movable Specifications

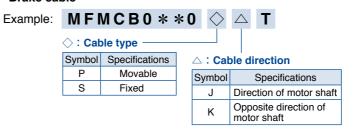
J Direction of motor shaft

Opposite direction of

Fixed

· Motor cable





	Optional pa	rts						· Options				
	Motor	Cable	Brake						Title		Part No.	Page
	WOO	Oabic	Cable	External	Reactor	Noise Filte		Interface Cable			DV0P4360	-
	without	with		Regenerative	Single phase	Single phase					DV0P4120	-
	Brake	Brake	Note) 5	Resistor	3-phase	3-phase					DV0P4121	197
	Note) 5	Note) 5	, 0		, ,	, ,		Interface Conve	ersion Cab	ole	DV0P4130	-
											DV0P4131	-
				DV0P4280	DV0P227					0:	DV0P4132	\vdash
						DV0P4170		Connector Kit for Power	A to	Single row type	DV0PM20032	
				DV0D4000		-		Supply Input	D-frame		DV0PM20033	200
				DV0P4283	DV0P228			Connection		type	DV0PIVI20033	
				DV0P4282	D 7 01 220	DV0PM2004	2	Connector Kit for Motor	A to D-fr	amo	DV0PM20034	201
	MFMCA		MFMCB					Connection	A to D-II	anie	D V OI WIZOOO4	201
	0 * * 0EED	_	0 * * 0GET	D\/0D4004							DV0P4290	202
				DV0P4281	DV0P227	D) (0D 4 4 7 0		Connector Kit for Motor/Encoder		n	DV0P4380	202
					DV0P220	DV0P4170					DV0PM20035	203
						DV0PM2004	2	Connector Kit fo			DV0PM20040	206
								Motor/Brake Co		DC000	DV0DM00004	
				DV0P4283	DV0P228				RS485,	H5232	DV0PM20024	100
					DV0P220	DV0PM2004	2		Safety Interface		DV0PM20025 DV0P4350	198
4						2 . OI IVIZOUS	-	Connector Kit	External		DV0P4350 DV0PM20026	+-
	MFMCA		MFMCB						Encoder		DV0PM20026 DV0PM20010	199
	0 * * 0NJD		0 * * 0PJT	DV0P4280	DV0P227	D) (2D ()				Ionitor Signal	DV0PM20031	- 100
	For movable, direction of		(For movable, direction of			DV0P4170		Battery For Abs			DV0P2990	
	\ motor shaft / MFMCA		\ motor shaft / MFMCB	DV0P4283				Battery Box	0.0.0	-	DV0P4430	207
	0 * * 0NKD		0 * * 0PKT	D V 01 4200	DV0P228		-		A-frame		DV0PM20027	
	For movable, opposite direction		For movable, opposite direction	DV0P4282		DV0PM2004	2	Mounting	B-frame		DV0PM20028	208
	of motor shaft		of motor shaft					Bracket	C-frame		DV0PM20029	1
	MFMCA 0 * * 0RJD	_	MFMCB 0 * * 0SJT	DV0P4281	DVODOOZ						MFECA0**0EAD	188
	/ For fixed, \		/ For fixed, \	DV01 4201	DV0P227	DV0P4170					MFECA0**0EAM	188
	direction of motor shaft		direction of motor shaft		DV0P220				without I	Battery Box	MFECA0**0MJD	⊣ ∣
	MFMCA		MFMCB			DV0PM2004	2		Without I	ballery box	MFECA0**0MKD	189
	0 * * 0RKD For fixed, \		0 * * 0SKT	DV0D4000		-					MFECA0**0TJD	103
	opposite direction of motor shaft		opposite direction of motor shaft	DV0P4283	DV0P228			Encoder Cable			MFECA0**0TKD	
	Note) 6				DV0P220	DV0PM2004	2				MFECA0**0EAE	188
+							-				MFECA0**0MJE	-
				DV0P4283	DVODOOO	DV0P4170			with Bat	tery Box	MFECA0**0MKE	189
				DV0P4282	DV0P228	DV0PM2004	2				MFECA0**0TJE	-
				D V 01 4202	D) (0D00=	D V 01 1V12004	_				MFECA0**0TKE	+-
	MFMCA	_	MFMCB		DV0P227	DV0P4170					MFMCA0**0EED MFMCA0**0NJD	-
	0 * * 0EED		0 * * 0GET		DV0P220		۸	Motor Cable	without E	Brake	MFMCA0**0NKD	191
				DV0P4283	DV0P228	DV0PM2004	2	Wiotor Gabic	Without	Jiano	MFMCA0**0RJD	101
					DV0P220	DV0PM2004	2				MFMCA0**0RKD	1
						D VOI WIZOU-	_				MFMCB0**0GET	Н
	,		osite to output	t shaft cann	ot be used	with 50 W	or				MFMCB0**0PJT]
) W motor.						Brake Cable			MFMCB0**0PKT	196
	,	•	a 17-bit abs				al				MFMCB0**0SJT]
	end	oder, please	use the enco	der cable M	FECA0**0E	EAD.					MFMCB0**0SKT	Ш
									50 Ω 25	W	DV0P4280	. I
								External	100 Ω 2		DV0P4281	↓
								Regenerative	25 Ω 50		DV0P4282	210
								Resistor	50 Ω 50		DV0P4283	
									30 Ω 10		DV0P4284	-
	· Brake cab	ole							20 Ω 13		DV0P4285	$\vdash\vdash$
		-	B0 * *0	\Diamond \triangle	T			Reactor	DV0P22	0, DV0P221, 3, DV0P224, 7, DV0P228,		209
			rpe ———							70, DV0PM2		250
	İ			│ △:Cable di	rection			Noise Filter		20, DV0PM2	20043	
		, ,	Acyabla [20			DV0P34		DV0D4400	251
			ixed	-	Specification ction of moto			Surge Absorber	Single p		DV0P1450	253
				Opp	osite directio				3-phase	,	DV0P1450	254
					r shaft	01		Noise Filter for	oignai Lin	ಆರ	DV0P1460	254

21

E 17-bit Absolute

Specifications

DV0P4130 DV0P4131 DV0P4132

Single row type DV0PM20032

			Motor				Driver					Optional parts						Options (IP65 motor)		65 motor)
						A5II series	A5IIE series		Power capacity	Facad	au Cabla		Matau	Cabla	Brake					Title
		D	Outmut	Dout No.	Rating/	A5 series Part No.	A5E series		/ at \	Encode	er Cable		Wotor	Cable	Cable	External	Reactor		Interface Cable	е
	Motor series	Power	Output (W)	Part No. 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		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	Interface Conv	version Cable
		Single phase/ 3-phase	1000	MSME102 C *	74		MDD \diamondsuit T5540E	D-frame	Approx. 1.8				MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220		Sir
		200 V	1500		75	-	MDD \diamondsuit T5540E	F.	Approx. 2.3	MFECA	MFECA		0**2ECD	0**2FCD	_	DV0P4285	DV0P222	DV0DN 4000 40	Connector Kit	A to typ D-frame Do
_		0 =6===	2000	MSME202 C *	76	v	MED \diamondsuit T7364E	⊢ -frame	FF	0**0ESD	0**0ESE					Note) 6		DV0PM20043	for Power Supply Input	E-frame (20
Low inertia	MSME	3-phase 200 V		MSME302	78	-	MFD ♦ TA390E MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6				MFMCA	MFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410	Connection	D-frame (40
iner	3000 r/min		5000	MSME502 □ C *	79	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5				0**3ECT	0**3FCT		×2 in parallel	 Note) 7		Compostor Kit	E-frame (400
tia		2 phase	750 1000 1500	MSME104 ☐ C *	105	MDD 🔷 T3420	MDD ♦ T3420E	D-frame	Approx. 1.6 Approx. 1.8 Approx. 2.3	MFECA	MFECA		MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048	,	Recommended	Connector Kit for Control Power Supply Input Connection	D, E-frame (
		3-phase 400 V	2000 3000 4000		108	MFD 🔷 T5440	MFD \diamondsuit T5440E		Approx. 3.3 Approx. 4.5 Approx. 6	0**0ESD	0**0ESE		MFMCA	MFMCA	_	DV0PM20049 DV0PM20049	Note) 7	components P.252	Connector Kit for Motor	A to D-frame E-frame (20
		Single	5000	MSME504 □ C *	110	MFD \diamondsuit TA464		·ano	Approx. 7.5				0**3ECT	0**3FCT		×2 in parallel	DV0P228		Connection Connector Kit for Regenerativ	
		phase/ 3-phase 200 V	1500	MDME102 C *			MDD ♦ T5540E	D-frame	Approx. 1.8 Approx. 2.3	MFECA	MFECA		MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P222 DV0PM20047 DV0P222	DV0P4220	Resistor Connector Kit	D-frame (40
		3-phase	2000	MDME202	82 83	•	MED ♦ T7364E	E-frame	Approx. 3.3 Approx. 4.5	0**0ESD	0**0ESE					DV0P4285 Note) 7	DV0P223 DV0P224	DV0PM20043	Motor/Encoder	
	MDME 2000 r/min	200 V		MDME402 C *	84	MFD \diamondsuit TB3A2	MFD \diamondsuit TB3A2E	F-frame	Approx. 6 Approx. 7.5				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225 Note) 7	DV0P3410		RS485, RS2 Safety Interface
Middle inertia		3-phase	1000 1500	MDME064 C * MDME104 C *	112 113 114	MDD ♦ T2407 MDD ♦ T2412 MDD ♦ T3420	MDD ♦ T2407E MDD ♦ T2412E MDD ♦ T3420E	D-trame	Approx. 0.9 Approx. 1.2 Approx. 1.8 Approx. 2.3	MFECA 0**0ESD	MFECA 0**0ESE		MFMCD 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048	_	Recommended components	Connector Kit Battery For Ab	External Sca Encoder Analog Monit
nertia		400 V	3000 4000	MDME304	116 117	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD ♦ T5440E MFD ♦ TA464E		Approx. 4.5	0 OLSD	0 OLSE		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	1 1	P.252	Battery Box Mounting Bracket	D-frame
	MGME	Single phase/ 3-phase	900	MGME092 □ C *				D-frame		MFECA	MFECA		MFMCD 0**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4220	Encoder Cable	without Battery
	Low speed/ High torque type	200 V 3-phase 200 V		MGME202 □ C * MGME302 □ C *					Approx. 3.8 Approx. 4.5	0**0ESD	0**0ESE		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P223 DV0P224	DV0P3410		without Brak
	1000 r/min	3-phase 400 V	900	_	125 126	MDD ♦ T3420 MFD ♦ T5440	MDD ♦ T3420E MFD ♦ T5440E	D-frame		MFECA 0**0ESD	MFECA 0**0ESE		MFMCD 0**2ECD MFMCA 0**3ECT	MFMCE 0**2FCD MFMCA 0**3FCT	_	DV0PM20048 DV0PM20049 x2 in parallel	_	Recommended components P.252	Motor Cable	
		Single phase/	1000	MHME102 C *			MDD \diamondsuit T3530E	D-frame	Approx. 1.8				MFMCD	MFMCA		DV0P4284	DV0P228/ DV0P222	DV0P4220		with Brake
		3-phase 200 V	1500	MHME152 □ C *		V	MDD ◇ T5540E		Approx. 2.3	MFECA	MFECA		0**2ECD MFMCE	0**2FCD MFMCE		DV0P4285	DV0PM20047/ DV0P222			50 Ω 25 W 100 Ω 25 W 25 Ω 50 W
Œ.		3-phase	3000	MHME202	100	MFD \diamondsuit TA390	*		Approx. 4.5	0**0ESD	0**0ESE		0**2ECD	0**2FCD	-	Note) 6	DV0P224	DV0PM20043	External Regenerative	50 Ω 50 W 30 Ω 100 W
High inertia	MHME 2000 r/min	200 V	5000	MHME402	102	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 6 Approx. 7.5				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225 Note) 7	DV0P3410	Resistor	20 Ω 130 W 120 Ω 80 W
tia		3-phase	1500	MHME104	131	MDD \diamondsuit T3420		D-frame	Approx. 1.8 Approx. 2.3 Approx. 3.3	MFECA	MFECA		MFMCD 0**2ECD MFMCE	MFMCE 0**2FCD MFMCE		DV0PM20049	_	Recommended	Reactor	80 Ω 190 W DV0P220, D DV0P223, D DV0P227, D
		400 V	3000 4000	MHME304	133 134	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E		Approx. 4.5 Approx. 6	0**0ESD			0**2ECD MFMCA 0**3ECT	0**2FCD MFMCA 0**3FCT	_	DV0PM20049 ×2 in parallel	Note) 7	components P.252	Noise Filter	DV0P4170, DV0P4220,
Ļ		<u> </u>		MHME504 C *		·	·		Approx. 7.5						ht (00 0	<u>'</u>	0· 10 m 20· 20 r	>		DV0P3410 Single phase

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.

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.

	A to	type	2 701 11120002			
Connector Kit for Power	D-frame	Double row type	DV0PM20033	00		
Supply Input	E-frame		DV0PM20044	20		
Connection	D-frame	, ,	DV0PM20051			
	E-frame	, ,	DV0PM20052			
Connector Kit or Control Power Supply Input Connection		me (400 V)	DV0PM20053			
Connector Kit	A to D-fr	ame	DV0PM20034	200		
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			
			DV0P4310	20		
Connector Kit fo	r		DV0P4320	20		
Motor/Encoder (Connectio	n	DV0P4330	20		
			DV0P4340	20		
	RS485,	RS232	DV0PM20024			
	Safety		DV0PM20025	19		
Cannantar Kit	Interface)	DV0P4350			
Connector Kit	External	Scale	DV0PM20026			
	Encoder		DV0PM20010	19		
	Analog M	Monitor Signal	DV0PM20031			
Battery For Abso	olute Enco	oder	DV0P2990	20		
Battery Box			DV0P4430	21		
Mounting Bracket	D-frame		DV0PM20030	20		
Encoder Cable	without E	Battery Box	MFECA0**0ESD	18		
Elicodei Cable	with Batt	tery Box	MFECA0**0ESE	19		
			MFMCA0**2ECD	19		
			MFMCD0**2ECD			
	without E	Proko	MFMCE0**2ECD	19		
	Williout	Siake	MFMCF0**2ECD			
Motor Cable			MFMCA0**3ECT	19		
			MFMCD0**3ECT	18		
			MFMCA0**2FCD	19		
	with Bral	ke	MFMCE0**2FCD	13		
			MFMCA0**3FCT	19		
	50 Ω 25	W	DV0P4280			
	100 Ω 2	5 W	DV0P4281			
Esternal	25 Ω 50		DV0P4282			
External Regenerative	50 Ω 50		DV0P4283	2		
Resistor	30 Ω 100	0 W	DV0P4284	ľ		
	20 Ω 130		DV0P4285			
	120 Ω 80		DV0PM20048			
	80 Ω 190		DV0PM20049			
Reactor	DV0P22	0, DV0P221, 3, DV0P224, 7, DV0P228,		20		
Noise Filter	DV0P41	70, DV0PM2 20, DV0PM2	0042	2		
	DV0P34	10		2		
	Single pl	hase	DV0P4190			
	2 phace	(200 V)	DV0P1450			
Surge Absorber	o-pilase	(==== -)	DV0PM20050			
Surge Absorber	3-phase	` ,	DV0PM20050			

400 W to 15.0 kW IP67 motor (MSME) MDME MFME

		ı	Motor				Driver		Power			Optional parts						
		Power	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series Part No.		capacity		er Cable		Motor	Cable	Brake Cable	External	Reactor	
	Motor series	supply	(W)	Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type Note) 2	(Position control type) Note) 3,4	Frame	(rated) load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter
		Single phase/	1000	MSME102 ☐ 1 *	74	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8				MEMOD	MEMOA		DV0P4284	DV0P228 DV0P222	DV0P4220
		3-phase 200 V	1500	MSME152 □ 1 *	75	MDD \diamondsuit T5540	MDD ♦ T5540E		Approx. 2.3	MFECA	MFECA		MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	
				MSME202 □ 1 *	76	Ť	MED ◇ T7364E	E-frame	Approx. 3.3	0**0ETD	0**0ETE				_	DV0P4285 Note) 7	DV0P223	DV0PM2004
Low	мемп	3-phase 200 V	3000 4000	MSME302 1 * MSME402 1 *		•	MFD ♦ TA390E MFD ♦ TB3A2E	F.	Approx. 4.5 Approx. 6				MFMCA	MFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410
/ inertia	MSME 3000 r/min		5000	MSME502 1 *	79			r-trame	Арргох. 7.5				0**3ECT	0**3FCT		×2 in parallel	Note) 8	DV0P3410
Tia			750	MSME084 □ 1 *		·	MDD 🔷 T2412E		Approx. 1.6								110.07 0	
			1000 1500	MSME104 1 * MSME154 1 *			MDD ♦ T3420E MDD ♦ T3420E	- 1	Approx. 1.8 Approx. 2.3				MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		Recommende
		3-phase 400 V	2000	MSME204 \(\Boxed{1} \) 1 *		-	MED \diamondsuit T4430E			MFECA 0**0ETD	MFECA 0**0ETE		0 2200	0 21 00	_	DV0PM20049	— Note) 8	components
		400 V		MSME304 1 * MSME404 1 *			MFD ♦ T5440E MFD ♦ TA464E	г.	Approx. 4.5	O OLID	O OLIL		MFMCA	MFMCA		DV0PM20049	Note) o	P.252
			4000 5000	MSME504 1 *		•	MFD \diamondsuit TA464E	r-trame	Approx. 7.5				0**3ECT	0**3FCT		x2 in parallel		
		Single phase/	1000	MDME102 □ 1 *	80	MDD ◇ T3530	MDD ◇ T3530E	D-frame	Approx. 1.8							DV0P4284	DV0P228 DV0P222	DV0P4220
		3-phase 200 V	1500	MDME152 ☐ 1 *	81	MDD ◇ T5540	MDD \diamondsuit T5540E	D-liame	Approx. 2.3				MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	D V 01 4220
			2000	MDME202 ☐ 1 *	82	MED ◇ T7364	MED ◇ T7364E	E-frame		MFECA	MFECA					DV0P4285 Note) 7	DV0P223	DV0PM2004
			3000 4000	MDME302 □ 1 * MDME402 □ 1 *	83 84		MFD ♦ TA390E MFD ♦ TB3A2E	F _{-frame}	Approx. 4.5 Approx. 6	0**0ETD	0**0ETE		MFMCA	MFMCA	_	DV0P4285	DV0P224 DV0P225	DV0P3410
		3-phase 200 V	5000	MDME502 1 *		•	MFD ♦ TB3A2E	1 mano	Approx. 7.5				0**3ECT	0**3FCT		×2 in parallel	210. 220	210.0110
		200 \$		MDME752 \(\text{1 *}	86	MGD ♦ TC3B4	_	G-frame	Approx. 11				_	-		DV0P4285 x3 in parallel	— Note) 8	Recommende components
	MDME 2000 r/min		15000	MDMEC12	88	MHD ♦ TC3B4 MHD ♦ TC3B4		H-frame	Approx. 22				Note) 6	Note) 6		DV0PM20058		P.252
			600	MDME044	112	•		l)-framo	Approx. 1.2 Approx. 1.8				MFMCD	MFMCE		DV0PM20048		
Middle				MDME154 \(\Bar{\pi} \) 1 *				-	Approx. 2.3				0**2ECD	0**2FCD				
dle ii		0 =6===		MDME204 ☐ 1 * MDME304 ☐ 1 *			-	E-frame		MEECA	MFECA	_			-	DV0PM20049		Recommende
inertia		3-phase 400 V		MDME404 1 *			· ·	F-frame	Approx. 4.5 Approx. 6	MFECA 0**0ETD	0**0ETE		MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049	Note) 8	components P.252
m m			5000	MDME504 ☐ 1 *	118	MFD \diamondsuit TA464	MFD \diamondsuit TA464E		Approx. 7.5				0 3501	0 3501	-	×2 in parallel		F.252
				MDME754 □ 1 *		MGD ♦ TB4A2	_	G-frame	Approx. 11				_	_		DV0PM20049 ×3 in parallel		
				MDMEC14				H-frame	Approx. 17 Approx. 22				Note) 6	Note) 6		DV0PM20059		
		Single phase/ 3-phase 200 V		MFME152 □ 1 *	89		MDD \diamondsuit T5540E	D-frame					MFMCA 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220
	MFME	3-phase	2500	MFME252 □ 1 *	90	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.8	MFECA 0**0ETD	MFECA 0**0ETE		MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 7	DV0P224	DV0PM200
	(Flat type) 2000 r/min	200 V	4500	MFME452 □ 1 *	91	MFD \diamondsuit TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6.8				MFMCD 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	— Note) 8	DV0P341
	2000 1/111111			MFME154 □ 1 *			MDD ♦ T3420E						MFMCF	MFMCE		DV0PM20048	10.0,0	Recommende
		3-phase 400 V	2500	MFME254 ☐ 1 *	123	MED ◇ T4430	MED ◇ T4430E	E-frame	Approx. 3.8	MFECA 0**0ETD	- 1		0**2ECD MFMCD	0**2FCD	_	DV0PM20049 DV0PM20049	— Note) 8	components
		400 V	4500	MFME454 □ 1 *	124	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 6.8	V VLID	U ULIL		0**3ECT	MFMCA 0**3FCT		×2 in parallel	.10.0, 0	P.252

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

 Options 	(IP67	motor)

	Title		Part No.	F	
Interface Cable			DV0P4360	ľ	
			DV0P4120	1	
			DV0P4121	1	
Interface Conve	rsion Cab	le	DV0P4130	19	
	. 0.01. 0 4.0		DV0P4131	l	
			DV0P4132	ł	
		Single row		t	
Connector Kit	A to type Double row		DV0PM20032 DV0PM20033		
for Power Supply Input		type		l	
Connection	E-frame	` '	DV0PM20044	ļ	
	D-frame	, ,	DV0PM20051	l	
	E-frame	(400 V)	DV0PM20052	ļ	
Connector Kit for Control Power Supply Input Connection	D, E-frar	me (400 V)	DV0PM20053		
Connector Kit	A to D-fr	ame	DV0PM20034	1	
for Motor	E-frame	(200 V)	DV0PM20046	1	
Connection	D-frame	,	DV0PM20054	l	
Connector Kit	E-frame	. ,	DV0PM20045	1	
for Regenerative Resistor	D-frame	(400 V)	DV0PM20055	1	
Resistor	2	(.00 1)		ł	
0 1 101			DV0PM20036 DV0PM20037	-	
Connector Kit fo Motor/Encoder (-	n		ł	
WotonEncoder	Johneoud	"	DV0PM20038	ł	
	DC40E	Denan	DV0PM20039 DV0PM20024		
	RS485,	N3232		1	
	Safety		DV0PM20025	19	
Connector Kit	Interface External		DV0P4350	19	
			DV0PM20026		
	Encoder	Monitor Signal	DV0PM20010 DV0PM20031	1	
	I Alialou IV	ioniloi Siunai			
Patton, For Abo					
Battery For Abso			DV0P2990		
Battery Box					
			DV0P2990		
Battery Box Mounting Bracket	D-frame		DV0P2990 DV0P4430		
Battery Box Mounting	D-frame	oder Battery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE		
Battery Box Mounting Bracket	D-frame	oder Battery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD		
Battery Box Mounting Bracket	D-frame	oder Battery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD		
Battery Box Mounting Bracket	D-frame without E	Battery Box ery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD		
Battery Box Mounting Bracket	D-frame	Battery Box ery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD		
Battery Box Mounting Bracket	D-frame without E	Battery Box ery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCF0**2ECD		
Battery Box Mounting Bracket Encoder Cable	D-frame without E	Battery Box ery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCF0**3ECT MFMCA0**3ECT		
Battery Box Mounting Bracket Encoder Cable	D-frame without E with Batt	Battery Box ery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD		
Battery Box Mounting Bracket Encoder Cable	D-frame without E	Battery Box ery Box	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD		
Battery Box Mounting Bracket Encoder Cable	D-frame without E with Batt	Battery Box ery Box Brake	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT		
Battery Box Mounting Bracket Encoder Cable	D-frame without E with Batt	Battery Box ery Box Brake	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT MFMCA0**3FCT DV0P4280		
Battery Box Mounting Bracket Encoder Cable	D-frame without E with Batt with Bral $50 \Omega 25$ $100 \Omega 25$	Battery Box ery Box Brake	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281		
Battery Box Mounting Bracket Encoder Cable Motor Cable	D-frame without E with Batt with Bral $50 \Omega 25 100 \Omega 25 25 \Omega 50$	Battery Box Bery Box Brake	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282		
Battery Box Mounting Bracket Encoder Cable	D-frame without E with Batt with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ 0.50	Battery Box Pery Box Brake	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283		
Battery Box Mounting Bracket Encoder Cable Motor Cable	D-frame without E with Batt with Brain $0.00000000000000000000000000000000000$	Battery Box Berry Box Brake	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCEO**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Batt without E $50 \Omega 25 100 \Omega 25 \Omega 50 \Omega 50 \Omega 100	Battery Box Berake Brake	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCEO**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284 DV0P4285		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Batt with Brain 50 Ω 25 Ω 50	Battery Box Perry Box Brake W W W O W O W	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20048		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Brail 50 Ω 25 Ω 50 Ω 50 Ω 50 Ω 50 Ω 100 Ω 20 Ω 120 Ω 130 Ω 190 80 Ω 190	Battery Box Brake W 5 W W O W O W O W	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative	D-frame without E with Brail with Brail $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $00 \Omega 100$ 00Ω	Battery Box Berry Box Brake W 5 W W 0 W 0 W 0 W 0 W 0 D 0 W 0 D 0 W 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt without E $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $30 \Omega 100$ $20 \Omega 130$ $120 \Omega 80$ $80 \Omega 190$ $100 \Omega 190$	Battery Box Bery Box Brake W 5 W W W 0 W 0 W 0 W 0 W 0 D 0 W 0 D 0 DV0P221, 3, DV0P224,	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt without E $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $30 \Omega 100$ $20 \Omega 130$ $120 \Omega 80$ $80 \Omega 190$ $100 \Omega 190$	Battery Box Brake W S W W W O W O W O W O W O W O W O W O W O	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt with Bral $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $00 \Omega 100$ $00 \Omega 1$	Battery Box Brake W S W W W O W O W O W O D O W O D O DVOP221, 3, DVOP224, 7, DVOP228, 70, DVOPM2 200, DVOPM2	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047		
Battery Box Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	D-frame without E with Batt with Brain So Ω 25 So Ω 50 Ω 5	Battery Box Brake W S W W W O W O W O W O W O W O W O W O W O	DV0P2990 DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**2ECD MFMCA0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043		

Note) 2 ♦: Drivers series K: A5II series H: A5 series Note) 3 ♦: Drivers series K: A5II 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) 3 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 Other combinations exist, and refer to P.210 for details.

Note) 8 Reactor should be prepared by the user.

	Motor					Driver		Dower	ir .			Optional	parts						
					Rating/	A5II series A5 series	A5IIE series A5E series		Power capacity	Encode	er Cable		Motor	Cable	Brake Cable	External	Reactor		
	Motor series	Power supply	Output (W)	Part No. Note) 1	Spec. (page)	Part No. (Speed, Position, Torque, Full-Closed type) Note) 2	Part No. (Position control type Note) 3,4	control Frame		20-bit Incremental Note) 5	17-bit Absolute Note) 4,5		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	
		Single phase/ 3-phase 200 V	900	MGME092 □ 1 *	92	MDD \diamondsuit T5540	MDD ♦ T5540E	D-frame)-frame Approx. 1.8	ох. 1.8			MFMCD MFMCA 0**2ECD 0**2FCD	DV0P4284	DV0P228 DV0P221	DV0P4220			
			2000	MGME202 □ 1 *	93	MFD ♦ TA390	MFD ♦ TA390E		Approx. 3.8	MFECA	MFECA						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 ×2 in parallel	DV0P224	DV0P3410	
	MGME	3-phase	4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5				0 0201	0 0101		AZ III PAIAIICI			
Middle inertia	Low speed/ High torque type	200 V	6000	MGME602 □ 1 *	96	MGD ♦ TC3B4	_	G-frame	G-frame Approx. 9.0				Note) 6	Note) 6		DV0P4285 x3 in parallel	Note) 7	Recommended components P.252	
rtia	1000 r/min		900	MGME094 □ 1 *	125	MDD \diamondsuit T3420	MDD ◇ 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							D) (0D) (000 (0		Recommended	
		3-phase 400 V	3000	MGME304 □ 1 *	127	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame	Approx. 4.5		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 ♦ TA464E	[Approx. 7.5	0 0215	O OLIL		0 0201			772 III parailo	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	DV0PM20043	
			3000	MHME302 □ 1 *	100	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 4.5	0**0ETD	0**0ETE		МЕМОЛ			D\/0D400E	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	DV0P3410	
I		200 V	5000	MHME502 ☐ 1 *	102	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5							,			
High inertia	MHME 2000 r/min		7500	MHME752 ☐ 1 *	103	MGD ♦ TC3B4	_	G-frame Appr	Approx. 11	ox. 11	11		Note) 6	– Note) 6		DV0P4285 ×3 in parallel	Note) 7	Recommended components P.252	
-			1000	MHME104 □ 1 *	130	MDD 🔷 T2412	MDD \diamondsuit T2412E	D fromo	Approx. 1.8				MFMCD			DV0PM20048			
			1500	MHME154 ☐ 1 *	131	MDD ♦ T3420	MDD \diamondsuit T3420E	D-lialite	Approx. 2.3				0**2ECD	MFMCE		D V 01 1V120040			
		2 nhaaa	2000	MHME204 ☐ 1 *	132	MED ◇ T4430	MED <> T4430E				MFECA		MFMCE 0**2ECD	0**2FCD		DV0PM20049		Recommended	
		3-phase 400 V	3000	MHME304 ☐ 1 *	133	MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 4.5	MFECA 0**0ETD			MFMCA	MFMCA	-	DV0PM20049	Note) 7	components	
				MHME404 ☐ 1 *		· ·	V	F-frame	Approx. 6				0**3ECT	0**3FCT		×2 in parallel	,	P.252	
			5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD \diamondsuit TA464E		Approx. 7.5				-						
			7500	MHME754 ☐ 1 *	136	MGD ♦ TB4A2	_	G-frame	Approx. 9.0				Note) 6	Note) 6		DV0PM20049 ×3 in parallel			

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

0.9 kW to 7.5 kW IP67 motor (MGME)

	Title		Part No.	Pag
Interface Cable			DV0P4360	
			DV0P4120	
			DV0P4121	10.
Interface Conve	rsion Cab	le	DV0P4130	19
			DV0P4131	
			DV0P4132	
0 1 10	A to	Single row type	DV0PM20032	
Connector Kit for Power	D-frame	Double row type	DV0PM20033	20
Supply Input Connection	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, E-frar	me (400 V)	DV0PM20053	
Connector Kit	A to D-fr	ame	DV0PM20034	20
for Motor	E-frame	(200 V)	DV0PM20046	
Connection	D-frame	(400 V)	DV0PM20054	
Connector Kit	E-frame		DV0PM20045	
for Regenerative Resistor	D-frame	(400 V)	DV0PM20055	
	1		DV0PM20036	20
Connector Kit fo	r		DV0PM20037	20
Motor/Encoder (Connectio	n	DV0PM20038	20
			DV0PM20039	20
	RS485,	RS232	DV0PM20024	
	Safety		DV0PM20025	19
0	Interface)	DV0P4350	
Connector Kit	External	Scale	DV0PM20026	
	Encoder		DV0PM20010	19
	Analog N	Monitor Signal	DV0PM20031	
Battery For Abso	olute Enco	oder	DV0P2990	20
Battery Box			DV0P4430	20
Mounting Bracket	D-frame		DV0PM20030	20
Encoder Cable	without E	Battery Box	MFECA0**0ETD	
Lilocaci Cabic	with Bat	tery Box	MFECA0**0ETE	19
			MFMCA0**2ECD	
			MFMCD0**2ECD	
	without F	Brake	MFMCD0**2ECD MFMCE0**2ECD	19
	without E	3rake		19
Motor Cable	without E	Brake	MFMCE0**2ECD	
Motor Cable	without [3rake	MFMCE0**2ECD MFMCF0**2ECD	
Motor Cable	without E	Brake	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD	19
Motor Cable	without E		MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD	19
Motor Cable	with Bra	ke	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT	19
Motor Cable	with Bra	ke W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280	19
Motor Cable	with Bra	ke W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT	19
	with Bra 50 Ω 25 100 Ω 2 25 Ω 50	ke W 5 W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280	19
External	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50	ke W 5 W W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283	19
Motor Cable External Regenerative Resistor	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 10	ke W 5 W W W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284	19
External Regenerative	with Bra $50 \Omega 25$ $100 \Omega 25$ $25 \Omega 50$ $50 \Omega 50$ $30 \Omega 10$ $20 \Omega 13$	ke W 5 W W W O W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285	19
External Regenerative	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 10 20 Ω 13 120 Ω 8	ke W 5 W W W O W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048	19
External Regenerative	with Brain 50 Ω 25 Ω 50 Ω 55 Ω 50 Ω 50 Ω 50 Ω 50 Ω 50 Ω 100 Ω 131 120 Ω 88 80 Ω 190	ke W 5 W W O W O W O W	MFMCEO**2ECD MFMCFO**2ECD MFMCAO**3ECT MFMCDO**3ECT MFMCAO**2FCD MFMCAO**2FCD MFMCAO**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049	19
External Regenerative Resistor	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22	ke W 5 W W 0 W 0 W 0 W 0 W 0 W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222,	19 19 19
External Regenerative	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41	ke W 5 W W 0 W 0 W 0 W 0 W 0 W	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	19
External Regenerative Resistor	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41	ke W 5 W W 0 W 0 W 0 W 0 W 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	19: 19: 19: 21: 20: 25:
External Regenerative Resistor	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 100 20 Ω 130 120 Ω 80 80 Ω 190 DV0P22 DV0P22 DV0P41 DV0P42	ke W 5 W W 0 W 0 W 0 W 0 D 0 W 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	19: 19: 19: 21: 20: 25:
External Regenerative Resistor	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 10 20 Ω 13 120 Ω 8 80 Ω 19 DV0P22 DV0P22 DV0P41 DV0P44 Single p	ke W 5 W W 0 W 0 W 0 W 0 D 0 W 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D 0 D	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043	199 199 199 210 250 250 250
External Regenerative Resistor Reactor Noise Filter	with Bra 50 Ω 25 100 Ω 25 25 Ω 50 50 Ω 50 30 Ω 10 20 Ω 13 120 Ω 8 80 Ω 19 DV0P22 DV0P22 DV0P41 DV0P44 Single p	ke W 5 W W 0 W 0 W 0 W 0 W 0, DV0P221, 3, DV0P224, 7, DV0P228, 70, DV0PM2 20, DV0PM2 10 hase (200 V)	MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043 DV0P4190	19: 19: 19: 21: 20: 25: 25:

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Note) 2 🔷 : Drivers series K: A5II series H: A5 series

Note) 3 \diamondsuit : Drivers series K: A5IE 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 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.

A5II, A5 series (Speed, Position, Torque,)

	100 V	Main	circuit	Single phase, 100 V to 120 V $^{+10~\%}_{-15~\%}$ 50/60 Hz				
	100 V	Control circuit		Single phase, 100 V to 120 V +10 %				
	N		A to D-frame	Single/3-phase, 200 V to 240 V +10 % 50/60 Hz				
Input	200 V	circuit	E to H-frame	3-phase, 200 V to 230 V +10 % 50/60 Hz				
Input power	200 V	Control	A to D-frame	Single phase, 200 V to 240 V +10 % 50/60 Hz				
		circuit	E to H-frame	Single phase, 200 V to 230 V +10 % 50/60 Hz				
	400.\/	Main circuit	D to H-frame	3-phase, 380 V to 480 V +10 % 50/60 Hz				
	400 V	Control circuit	D to H-frame	DC 24 V ± 15 %				
		tempe	erature	Ambient temperature: 0 °C to 55 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)				
Env	vironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation 1)				
		Alti	tude	Lower than 1000 m				
	Vibration		ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)				
Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive				
Enc	Encoder feedback			17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial				
Foo	edback so	nale.	A/B phase	A/B phase, initialization signal defferential input.				
	dback	Jaio	serial	Manufacturers that support serial communication scale: Mitutoyo Corporation Magnescale Co., Ltd. MicroE Systems Renishaw plc, Fagor Automation S.Coop				
P	Control	oianal	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.				
Parallel I	Control	Sigriai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.				
/O c	Analog	cianal	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)				
onn	Allalog	sigriai	Output	2 outputs (Analog monitor: 2 output)				
I/O connector	Dulas	anal	Input	2 inputs (Photo-coupler input, Line receiver input)				
,	Pulse si	grial	Output	4 outputs (Line driver: 3 output、open collector: 1 output)				
			USB	Connection with PC etc.				
	mmunicat ction	tion	RS232	1 : 1 communication				
lan	Otion		RS485	1 : n communication up to 31 axes to a host.				
Saf	Safety function			Used for functional safety.				
Fro	Front panel			(1) 5 keys (2) LED (6-digit) (3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))				
Reg	Regeneration			A, B, G and H-frame: no built-in regenerative resistor (external resistor only) C to F-frame: Built-in regenerative resistor (external resistor is also enabled.)				
Dyr	namic bra	ıke		A to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only				
Cor	Control mode			Switching among the following 7 mode is enabled, (1) Position control (2) Speed control (3) Toque control (4) Position/Speed control (5) Position/Torque control (6) Speed/Torque control (7) Full-closed control				

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

	Control inpu	ıt	(1) Deviation counter clear (2) Command pulse inhibitation			
			(3) Electric gear (4) Damping control switching etc.			
	Control outp		Positioning complete (In-position) etc.			
		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps			
Posit	Pulse	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command direction)			
Position control	input	Electronic gear (Division/Multiplication of command pulse)	1/1000 to 1000 times			
<u>o</u>	Smoothing filter Analog Torque limit command input		Primary delay filter or FIR type filter is adaptable to the command input			
			Individual torque limit for both positive and negative direction is enabled.			
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.			
	Instantaneo	us Speed Observer	Available			
	Damping Co	<u> </u>	Available			
	2DOF settin		Only available at A5I Series			
	ZDOI SCIIII	95	(1) Selection of internal velocity setup 1 (2) Selection of internal velo			
	Control inpu	ıt	setup 2 (3) Selection of internal velocity setup 3 (4) Speed zero clamp etc.			
	Control outp	u rt	Speed arrival etc.			
S	Analog	Velocity command input	Speed arrival etc. Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (6 V/Rated rotational speed Default)			
Эее	input	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.			
Speed control		Torque feed forward input	Analog voltage can be used as torque feed forward input.			
9	Internal velo	ocity command	Switching the internal 8speed is enabled by command input.			
<u>o</u>		own function	Individual setup of acceleration and deceleration is enabled, with (
			10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.			
	Zero-speed		Speed zero clamp input is enabled.			
		us Speed Observer	Available			
	Speed Cont		Available			
	2DOF settin	gs	Only available at A5I Series			
겁	Control inpu	ıt	Speed zero clamp, Torque command sign input etc.			
ğ	Control outp	out	Speed arrival etc.			
Torque control	Analog input	Torque command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (3 V/ra torque Default)			
Ň	Speed limit	function	Speed limit value with parameter is enabled.			
	Control inpu	ıt	(1) Deviation counter clear (2) Command pulse inhibition(3) Command dividing gradual increase switching (4) Damping conswitching etc.			
	Control outp		Full-closed positioning complete etc.			
Full		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps			
5	Pulse	Input pulse signal format	Differential input			
Full-closed control *2	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 to 1000 times			
ro		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input			
่ง้	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.			
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.			
	Setup range	of division/multiplication of	1/40 to 160 times			
	Damping Co		Only available at A5II 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.			
ρ	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 e			

^{*2} Not applicable to 2DOF control system.

A5IIE, A5E series (Position control type)

		100 V	Main	circuit	Single phase, 100 V to 120 V +10 % 50/60 Hz				
		100 V	Contro	l circuit	Single phase, 100 V to 120 V				
	Main D		A to D-frame	Single/3-phase, 200 V to 240 V +10 % 50/60 Hz					
	Input power	200 V	circuit	E to F-frame	3-phase, 200 V to 230 V +10 % 50/60 Hz				
	ower	200 V	Control	A to D-frame	Single phase, 200 V to 240 V +10 % 50/60 Hz				
			circuit	E to F-frame	Single phase, 200 V to 230 V +10 % 50/60 Hz				
		400 V	Main circuit	D to F-frame	3-phase, 380 V to 480 V +10 % 50/60 Hz				
			Control circuit	D to F-frame	DC 24 V ± 15 %				
Ве			tempe	erature	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)				
Basic Specifications	Env	ironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation 1)				
pecifi			Alti	tude	Lower than 1000 m				
catior			Vibr	ation	5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)				
เร	Cor	ntrol meth	od		IGBT PWM Sinusoidal wave drive				
	Enc	oder feed	dback		20-bit (1048576 resolution) incremental encoder, 5-wire serial				
	Pe	Control	eignal	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.				
	Parallel I/O	Control	sigriai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.				
		Analog	signal	Input	none				
	connector		<u> </u>	Output	2 outputs (Analog monitor: 2 output)				
	ğ	Pulse si	gnal	Input	2 inputs (Photo-coupler input, Line receiver input)				
	0			Output	4 outputs (Line driver: 3 output、open collector: 1 output)				
		nmunicat ction	ION	USB	Connection with PC etc.				
	Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)				
	Reg	generatio	n		A, B-frame: no built-in regenerative resistor (external resistor only) C to F-frame: Built-in regenerative resistor (external resistor is also enabled.)				
	Dyr	namic bra	ke		Built-in				
	Cor	ntrol mode	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.

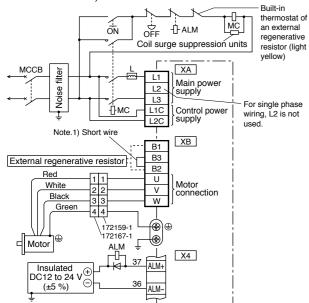
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	Control inpu	ut	(1) Deviation counter clear (2) Command pulse inhibitation (3) Electric gear (4) Damping control switching etc.	
	Control outp	out	Positioning complete (In-position) etc.	
		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps	
Position	Pulse input	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)	
control		Input	Electronic gear (Division/ Multiplication of command pulse) 1/1000 to 1000 times	
Finction		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input	
	Instantaneo	us Speed Observer	Available	
	Damping Co	ontrol	Available	
	2DOF settin	ngs	Only available at A5II 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.	
Co	Division of e	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).	
mmon	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.	
	Position control Common	Control output Position control Pulse input Instantaneo Damping Co 2DOF settir Auto tuning Division of e	Pulse input Pulse input Electronic gear (Division/ Multiplication of command pulse) Smoothing filter Instantaneous Speed Observer Damping Control 2DOF settings Auto tuning Division of encoder feedback pulse Hard error Protective function	

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

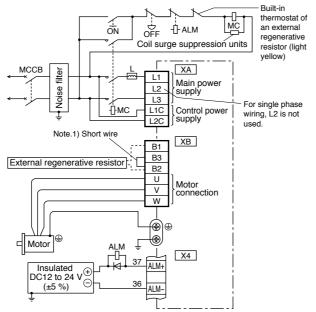
• In Case of MSMD, MHMD



· In Case of MSME

and Terminal Block

Wiring to Connector, XA, XB, XC, XD



Note.1)

thermostat of

an external

regenerative

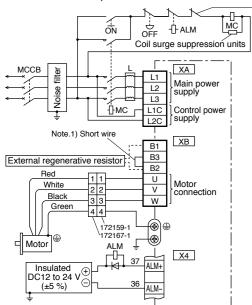
resistor (light

Note.	1)						
Frame	Short wire	Built-in	Connection of the connector XB				
No.	(Accessory)	regenerative resistor	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			

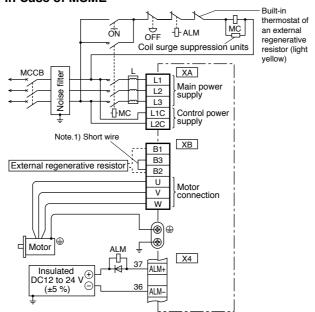
Frame	Frame Short wire	Built-in	Connection of the connector XB			
No. (Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.			
A-frame B-frame	without	without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open between B2-B3		
C-frame D-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, A to D-frame, 200 V type

• In Case of MSMD, MHMD



· In Case of MSME



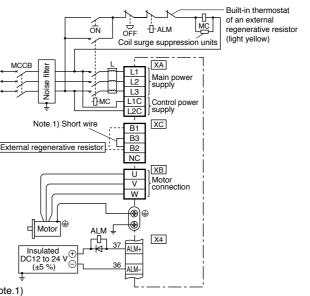
Note.1

	-				
	Built-in	Connection of the connector XB			
Frame No.	Short wire (Accessory)	regenerative resistor	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	

Note 1)

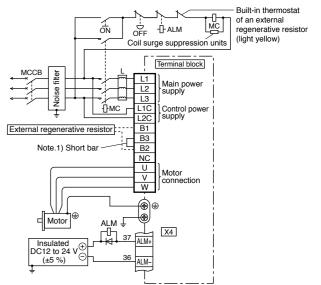
Frame	Short wire	Built-in	Connection of the connector XB			
	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.		
A-frame B-frame	without	without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open between B2-B3		
C-frame D-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		

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



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

Note.	1)						
	Oh and union	Built-in	Connection of the connector XC				
No.	Frame Short wire (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			



Note.1)

supply

Insulated ⊕ DC24 V ⊝

Dynamic Brake resistor

coil surge suppression

units recommended

by manufacturer of

Frame Short bar

Turns on/off the -

3 pieces Note.2) 🛴

Coil surge suppression units

dynamic brake resistor. Note.4) Please use it with the

Note.1) About regenerative resistor

小 MC2

Motor

DC12 to 24 V

Frame No.	Short bar (Accessory)	Built-in regenerative resistor	Connection of terminal block			
			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, H-frame, 200 V type Note 1) Built-in thermostat of an external regenerative resistor (T1 and T2 terminals

ON

∯ MC1

OFF THALM

Coil surge suppression units

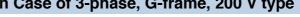
Control powe

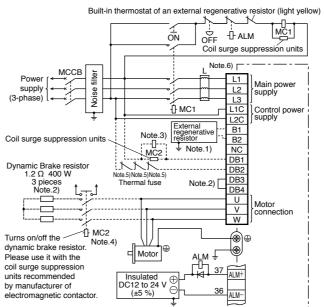
supply

In case of not using

Open between B1-B2

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





Note.1) About regenerative resistor

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 (Accessory)	Short har Built-in		terminal block					
		dynamic brake resistor.	In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.					
			Remove attached short bar	Shorted with attached short bar					

ot using erative resistor.		
-B2	H-frame	without
	Specific	ation of

				· E (ellilli	nai conne	ct to the t	ground	1					
cific	ation of	external	reger	nerative	resistor,	please	refer	to P.1	139, "	Options	Com	onent	s".

In case of using an external regenerative resistor.

External regenerative resistor termin Terminal R1, R2 connect to B1, B2

Terminal T1, T2 connection as show

above • Terminal 24 V, 0 V connect to DC

power supply of DC24 V.

Connection of terminal block

Note.2) About dynamic brake resistor

without

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

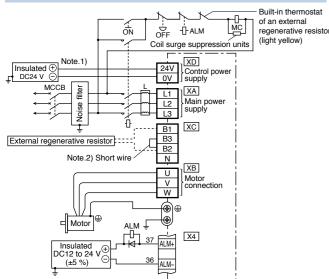
<common for G & H frame>

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

Connection of terminal block

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

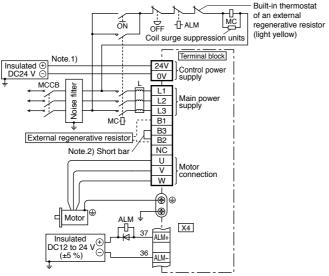
In Case of 3-phase, D and E-frame, 400 V type



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

	Frame No.	Short wire (Accessory)	Built-in regenerative resistor	Connection of the connector XC			
				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		

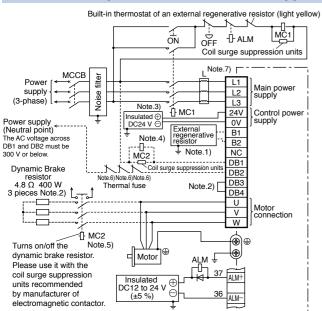
In Case of 3-phase, F-frame, 400 V type



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

_	F	Short bar	Built-in	Connection of terminal block		
	Frame No.	(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

Frame No.	Short bar (Accessory)	Built-in regenerative resistor	Connection of terminal block						
			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 No.	Short bar	Built-in dynamic brake resistor.	Connection of terminal block		
	(Accessory)		In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.	
G-frame	with	with	Remove attached short bar between DB3-DB4. Connect external dynamic brake resistor as shown above.	Shorted with attached short bar between DB3-DB4 Open between DB1-DB2	

<common for G & H frame>

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.

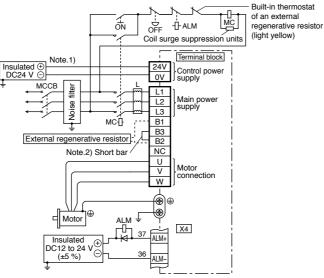
Note.6) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor.

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

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

Wiring to Connector, XA, XB, XC, XD

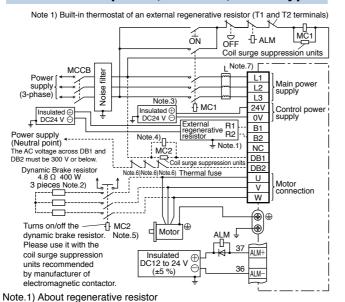
and Terminal Block



Note.2)

	Frame	Short bar (Accessory)	Built-in regenerative resistor	Connection of terminal block		
				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, H-frame, 400 V type



In case of using In case of not using Terminal R1, R2 connect to B1, B2 Terminal T1, T2 connection as show

above Terminal 24 V,0 V connect to DC pov

E terminal connect to the ground Specification of external regenerative resistor, please refer to P.139, "Options Components". Note.2) About dynamic brake resistor

supply of DC24 V

Frame	Short bar (Accessory)	Built-in	Connection of terminal block		
No.		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	

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

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

Outline Description of Safe Torque Off (STO)

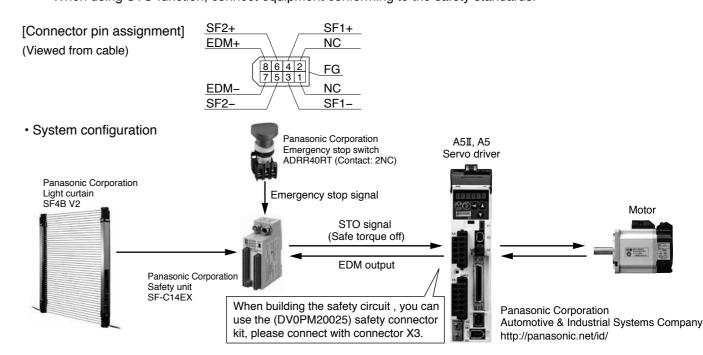
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

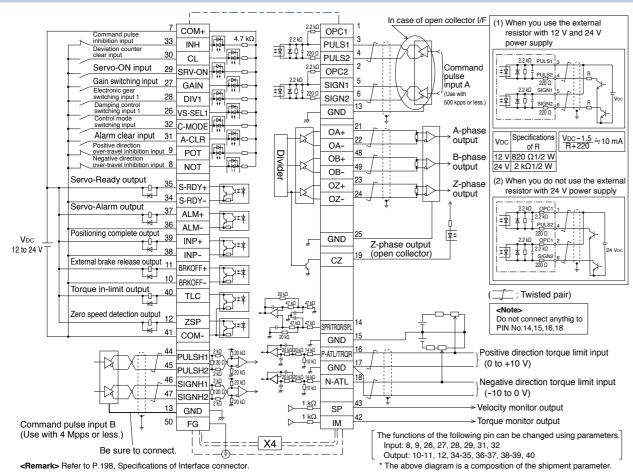
This is an alarm condition and the 7-seg LED on the front panel displays the error code number.

Safety Precautions

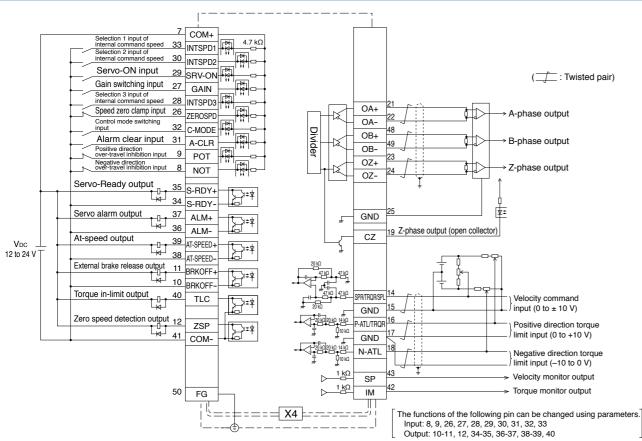
- · When using the STO function, be sure to perform equipment risk assessment to ensure that the system conforms to the safety requirements.
- · Even while the STO function is working, the following potential safety hazards exist. Check safety in risk assessment.
- · The motor may move when external 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)

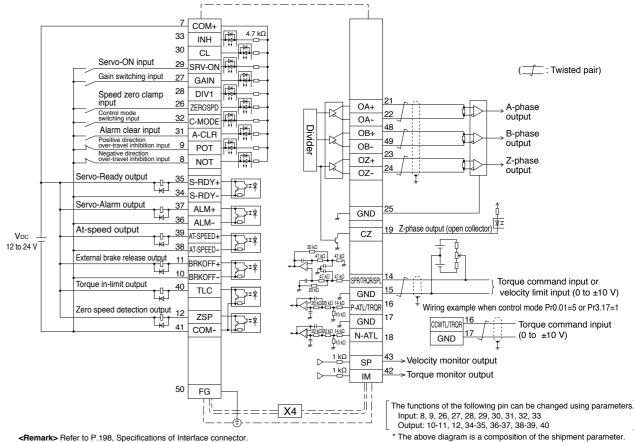


37

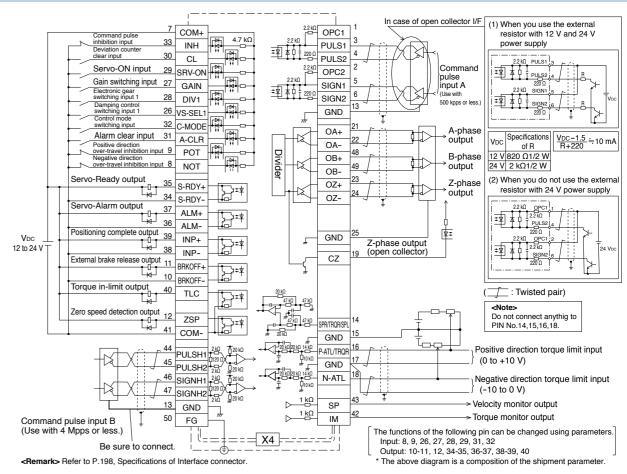
<Remark> Refer to P.198, Specifications of Interface connector

* 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)



38

The active diagram is a composition of the emphisis parameter.

Wiring to the Connector, X6

A5 Family

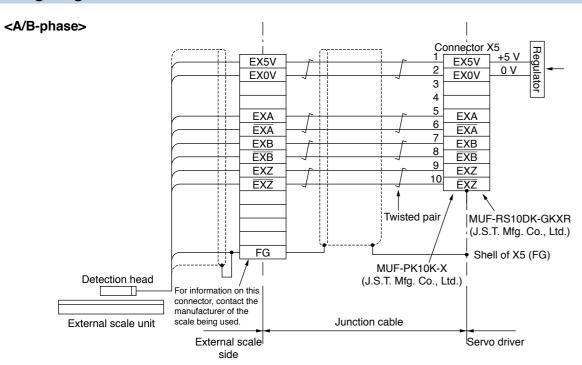
Applicable External Scale

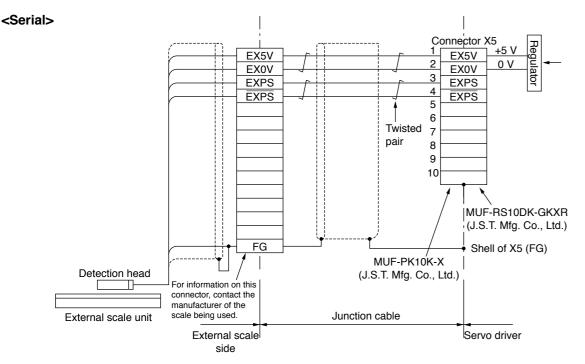
The manufacturers applicable external scales for this product are as follows.

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

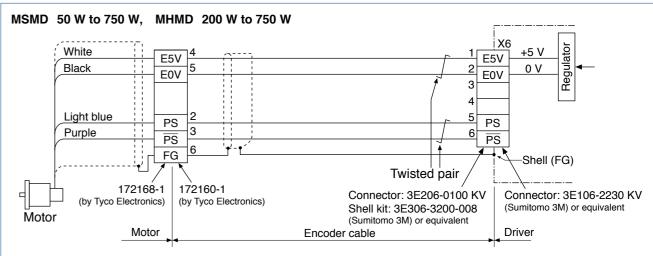
- Mitutoyo Corporation
- · Magnescale Co., Ltd.
- MicroE systems
- Renishaw plc
- · Fagor Automation S.Coop
- * For the details of the external scale product, contact each company.

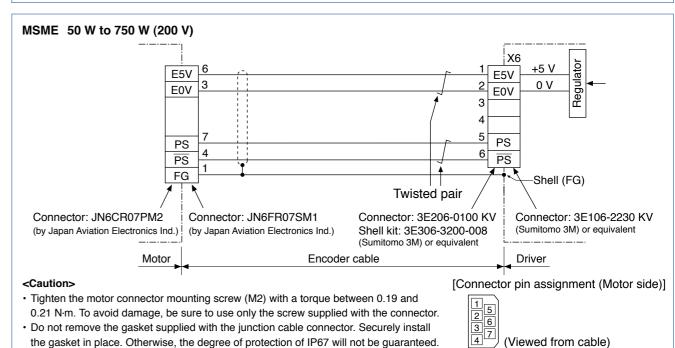
Wiring Diagram of X5

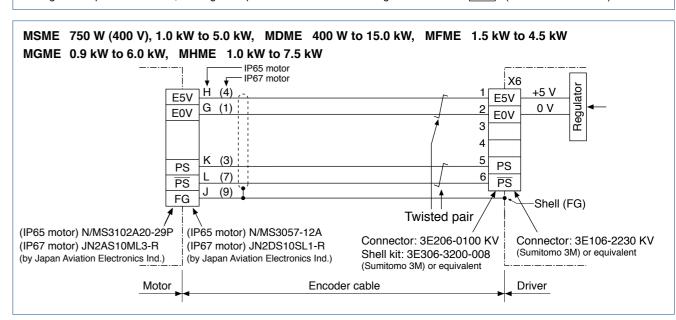




In Case of 20-bit Incremental Encoder





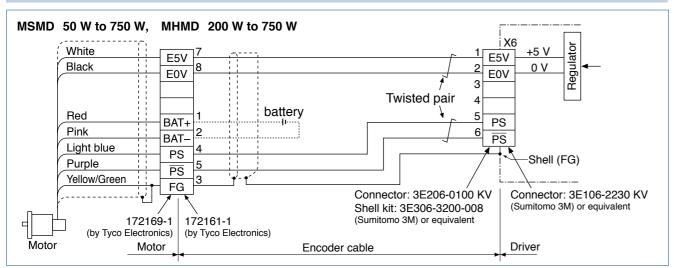


[Connector pin assignment] Refer to P.186, 187 "Specifications of Motor connector".

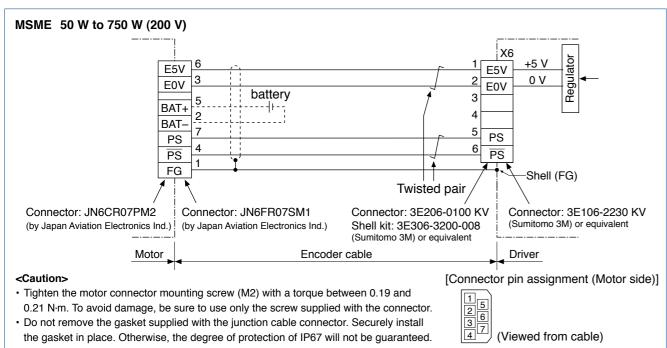
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

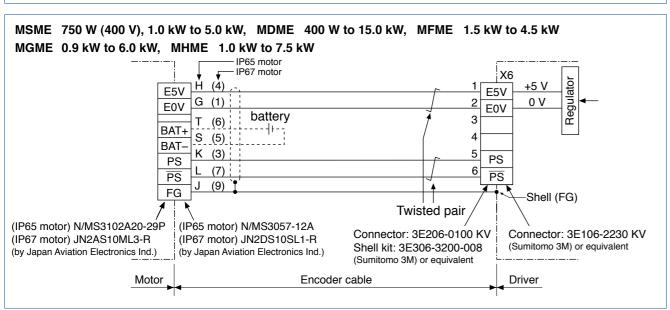
A5 Family

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



Wiring to the Connector, X6

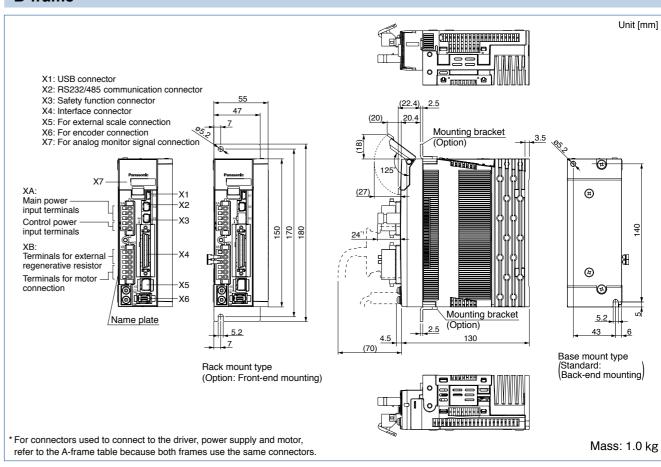




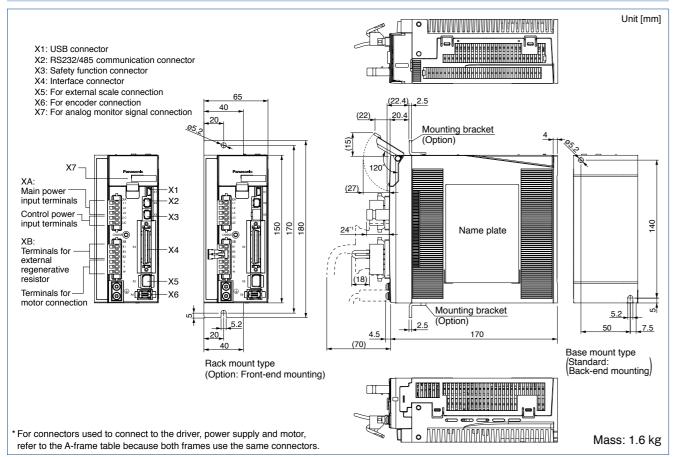
[Connector pin assignment] Refer to P.186, 187 "Specifications of Motor connector".

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 (Standard: Back-end mounting) (Option: Front-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 Connector XB 06JFAT-SAXGF J.S.T. Mfg. Co., Ltd. Connector X7 530140610 (or equivalent Japan Molex Inc.

B-frame



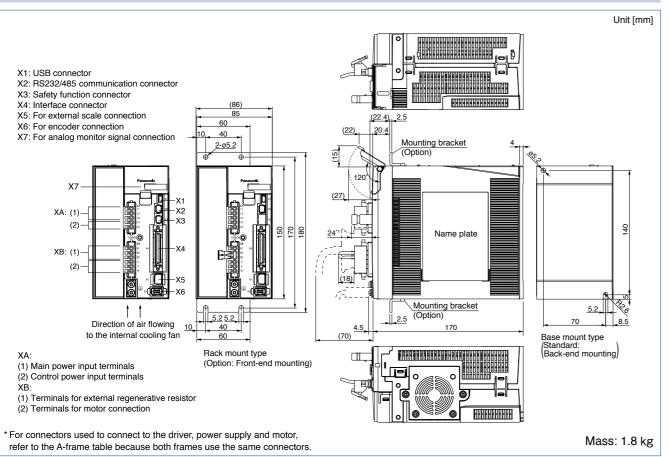
C-frame



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

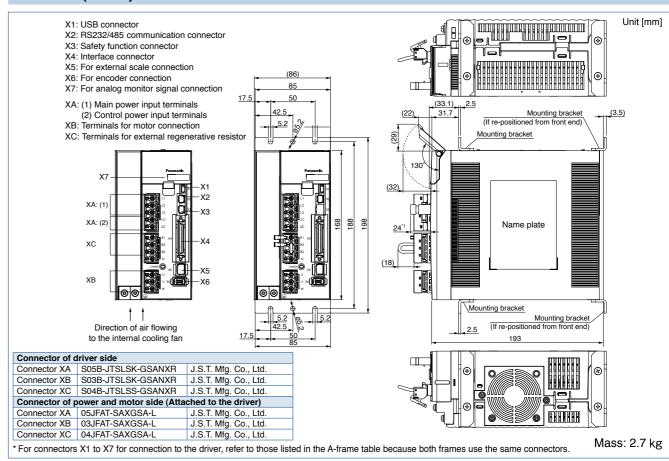
*1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

D-frame (200 V)



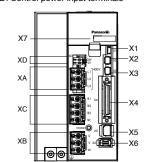
Unit [mm] XA: Main power input terminals XB: Terminals for motor connection XC: Terminals for external regenerative XD: Control power input terminals Rack mount type X1: USB connector (Option: Front-end mounting) X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector X5: For external scale connection X6: For encoder connection 2-05.2 X7: For analog monitor signal connection (Option) X7 XD -X2 XA Name plate XC ΧВ Mounting bracket (Option) 5.2 Base mount type Connector of driver side Connector XA S03B-JTSMSS-GSANYR J.S.T. Mfg. Co., Ltd. Back-end mounting Connector XB S03B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XD S02B-J25SK-GGR Connector XA 03JFAT-SAYGSA-M J.S.T. Mfg. Co., Ltd. Connector XB 03JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd. Connector XC 04JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd. Connector XD 02MJFAT-SAGF J.S.T. Mfg. Co., Ltd. Mass: 1.9 kg * 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.

E-frame (200 V)



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



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)

Direction of air flowing to the internal cooling fan

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.

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(If re-positioned from front end)

Name plate

Mass: 2.7 kg

Mounting bracket

\Mounting bracket

Connector XD 02MJFAT-SAGF 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.

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

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

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

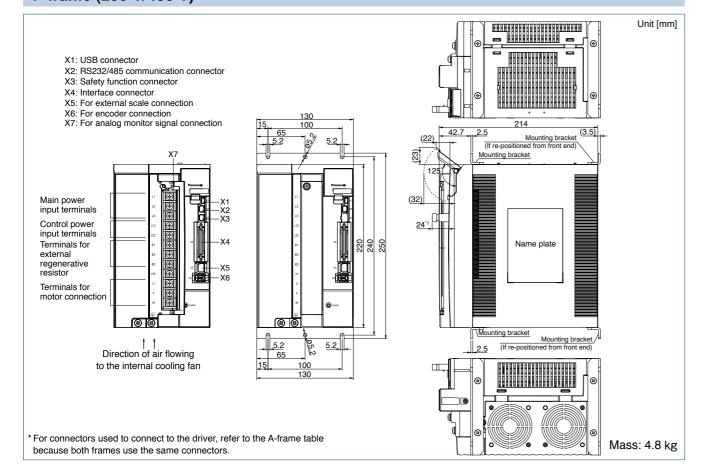
F-frame (200 V/400 V)

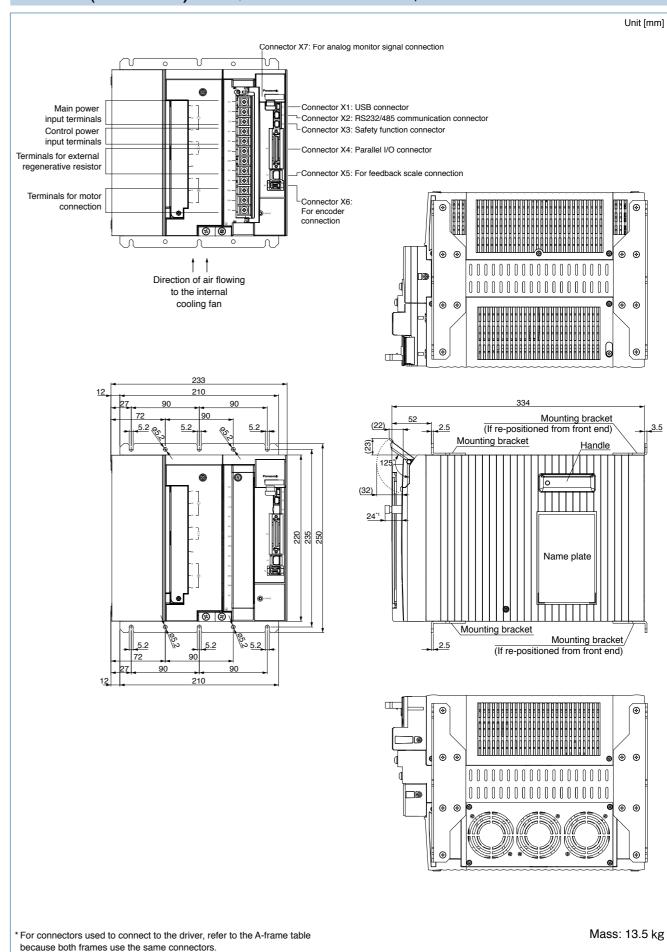
Connector XD S02B-J25SK-GGR

Connector XA 03JFAT-SAYGSA-L

Connector XB 03JFAT-SAXGSA-L

Connector XC 04JFAT-SAXGSA-L





A5 Family

Motor Specifications

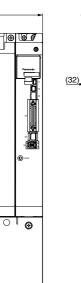
Unit [mm]

X6: For encoder connection

Screws for earth (x2) Control terminal for dynamic brake resiste - Control power input terminals Terminals for motor connection

Terminals for external regenerative resistor Main power input terminals

Name



Direction of air flowing to the internal cooling fan

Base mount type (Back-end mounting)

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

Features

Features/Lineup

 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 (1,048,576 pulse)
- 17-bit absolute encoder (131,072 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



MHMD 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



2000 r/min (from 11.0 kW) Rated speed: 2000 r/min : 1500 r/min

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



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

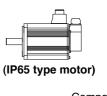


High inertia

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.



Compact

(IP67 type motor)

C: IP65 motor 1: IP67 motor MSME (100 V/200 V)

1.5 kW to 4.5 kW . P.89 **MGME (200 V)** 0.9 kW to 6.0 kW . P.92

MHME (200 V) 1.0 kW to 7.5 kW . P.97

MSME (400 V) 750 W to 5.0 kW. P.104

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) 1.0 kW to 7.5 kW P.130

IP67 motor dimensions...

P.137 **Motors with Gear Reducer**

Type and Specifications...... P.141 Model No. designation...... P.142 The combination of the driver and the motor.....

Table of motor specifications... P.143 Torque Characteristics of Motor

.P.144 Dimensions of Motor.....

Motor Specification Description

Environmental Conditions.... P.182 Notes on [Motor specification] Permissible Load at

Output Shaft...

Part No.: M ME **** ** Built-in Holding Brake

			AC1	00 V		
Motor model			MSMD5AZG1□	MSMD5AZS1□		
*1		IP67		-	-	
A	Model	A5II, A5	series	MAD	T1105	
Applicable *2	No.	A5IIE, A	5E series	MAD ⊘T1105E	_	
divoi	Fr	ame sym	ıbol	A-fra	ame	
Power supply	capacity	y	(kVA)	0.	.5	
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	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	Withou	t brake	0.025		
of rotor (×10 ⁻⁴	kg·m²)	With I	orake	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 sing	le turn	1,048,576	131,072	

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.

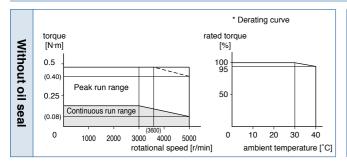
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

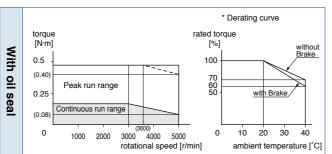
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
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, 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.

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

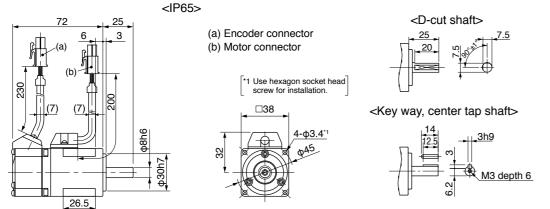




[Unit: mm]

Dimensions

<Without Brake> Mass: 0.32 kg



* 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 mod	*1	IP67			-	-
		Model A5II, A5 series		series	MAD ◇T150 5	
Applicable driver	*2	No.	A5IIE, A5E series		MAD ◇T1505E	-
ulivei		Fr	ame sym	bol	A-fr	ame
Power sup	ply c	apacity	/	(kVA)	0	.5
Rated outp	ut			(W)	5	0
Rated torq	ue			(N·m)	0.	16
Momentary	/ Ma	x. peal	torque	(N·m)	0.48	
Rated curr	ent		(.	A(rms))	1.1	
Max. curre	nt		((A(o-p))	4.7	
Regenerati	ve br	ake	Without option		No limit Note)2	
frequency (ti	mes/m	in) Note)1	DV0P4281		No limit Note)2	
Rated rota	tiona	l spee	d	(r/min)	3000	
Max. rotati	onal	speed		(r/min)	5000	
Moment of	iner	tia	Without brake		0.025	
of rotor (×1	0 ⁻⁴ k	(g·m²)	With brake		0.027	
Recommended moment of inertia ratio of the load and the rotor Note (S			tia Note)3	30 times	s or less	
Rotary encoder specification		fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution		n per sing	le turn	1,048,576	131,072	

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.

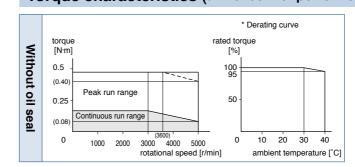
0.29 or more
35 or less
20 or less
0.3
1 or more
24±1.2

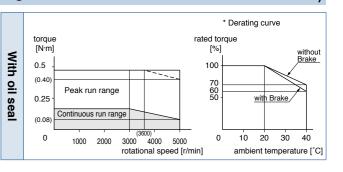
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
assembly	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, 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.

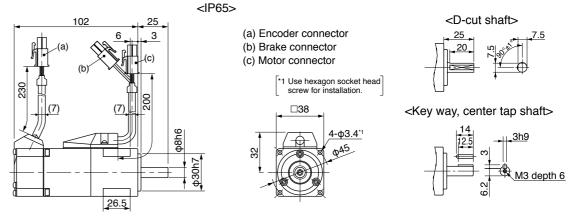
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<With Brake> Mass: 0.53 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]

49

A5 Family

Specifications

				AC1	AC100 V		
		IP65		MSMD011G1□	MSMD011S1		
Motor model		IP67		-	-		
	Model	A5II, A5	series	MAD ⇔ T1107			
Applicable driver *2	No.	A5IIE, A5E series		MAD ⊘T1107E	_		
unven	Fr	ame sym	bol	A-fra	ame		
Power supply	capacit	y	(kVA)	0	.4		
Rated output			(W)	10	00		
Rated torque			(N·m)	0.32			
Momentary M	lax. peal	k torque	(N·m)	0.95			
Rated current	t	(,	A(rms))	1.7			
Max. current		(A(o-p))	7.2			
Regenerative	brake	Without	option	No limit Note)2			
frequency (times	/min) Note)1	DV0P	4280	No limit Note)2			
Rated rotation	nal spee	d	(r/min)	3000			
Max. rotation	al speed		(r/min)	5000			
Moment of inc	ertia	Without	brake	0.051			
of rotor (×10	4 kg·m²)	With b	rake	0.054			
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less				
Rotary encod	Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
F	Resolutio	n per sing	le turn	1,048,576	131,072		

• 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.

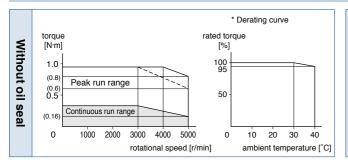
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

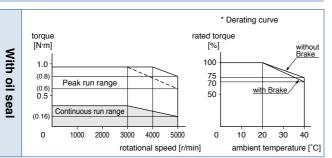
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
document	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, 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.>)

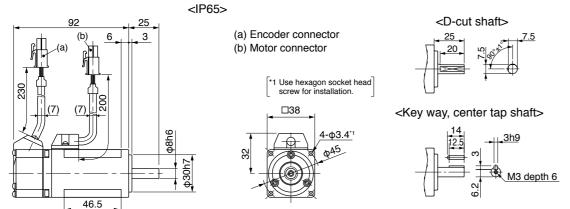




Dimensions

<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]

Specifications

				AC2	00 V
M - t - · · · · · · · · · · · · · · · · · ·		IP65		MSMD012G1□	MSMD012S1
Motor mode	:1	IP67		-	-
	Model	A5II, A5 series		MAD	T1505
Applicable driver *	No.	A5IIE, A5E series		MAD ⊘T1505E	-
unver	Fr	ame sym	bol	A-fra	ame
Power supp	ly capacity	y	(kVA)	0.	.5
Rated outpu	ut		(W)	10	00
Rated torqu	е		(N·m)	0.:	32
Momentary	Max. peal	k torque	(N·m)	0.95	
Rated curre	nt	(A(rms))	1.1	
Max. curren	nt		(A(o-p))	4.7	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4281		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	inertia	Without brake		0.051	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		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	
	Resolutio	n per sing	le turn	1,048,576	131,072

• 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.

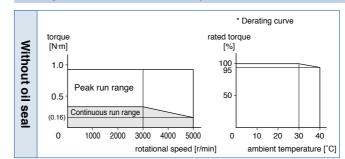
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

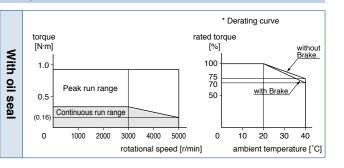
• Permissible load (For details, refer to P.183)

	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, 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.

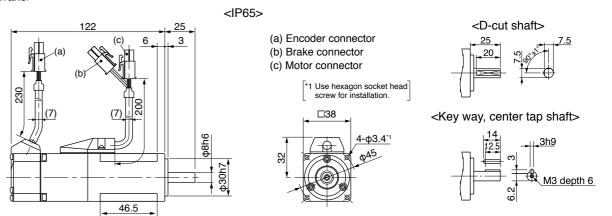
Torque characteristics (at AC200 V of power voltage)





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]

				AC1	00 V
Motor model	IP65		MSMD021G1□	MSMD021S1□	
wotor model *1		IP67		-	-
A If a solution	Model	A5II, A5 seri	ies	MBD ⇔ T2110	
Applicable 42	No.	A5IIE, A5E	series	MBD ⊘T2110E	_
anver	Fr	ame symbol	I	B-fra	ame
Power supply	capacit	y (kVA)	0	.5
Rated output			(W)	20	00
Rated torque		(N·m)	0.64	
Momentary M	ax. peal	k torque (N·m)	1.91	
Rated current		(A(r	rms))	2.5	
Max. current		(A(o-p))	10.6	
Regenerative b	orake	Without op	tion	No limi	t Note)2
frequency (times/	min) Note)1	DV0P428	83	No limit Note)2	
Rated rotation	al spee	d (r	/min)	3000	
Max. rotationa	ıl speed	(r/	/min)	5000	
Moment of ine	ertia	Without br	ake	0.14	
of rotor (×10 ⁻⁴	kg·m²)	With bral	ke	0.16	
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 t	turn	1,048,576	131,072

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.

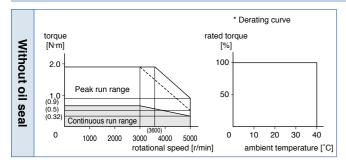
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

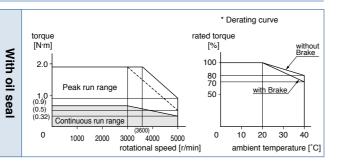
• Permissible load (For details, refer to P.183)

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

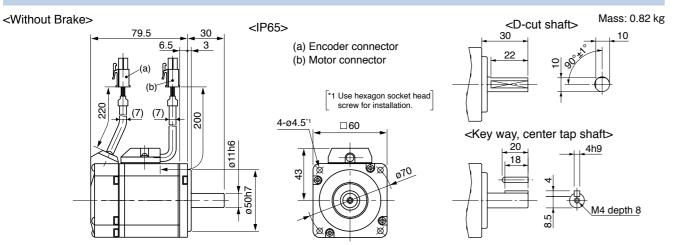
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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.

Specifications

			AC2	00 V	
		IP65		MSMD022G1□	MSMD022S1
Motor mod	eI *1	IP67		-	_
A 1: 1- 1	Mod	el A5II, A5	series	MAD ◇ T1507	
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ⊘T1507E	-
unven		Frame sym	ibol	A-fr	ame
Power supp	oly capa	ity	(kVA)	0	.5
Rated outp	ut		(W)	20	00
Rated torqu	ıe		(N·m)	0.0	64
Momentary	Мах. ре	ak torque	(N·m)	1.91	
Rated curre	ent	((A(rms))	1.6	
Max. curre	nt		(A(o-p))	6	.9
Regenerativ	e brake	Without	nout option No limit Note)2		t Note)2
frequency (tir	mes/min) Not	DV0P	4283	No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	3000	
Max. rotation	onal spe	ed	(r/min)	5000	
Moment of	inertia	Without	t brake	0.14	
of rotor (x1	0 ⁻⁴ kg·m	With b	orake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary enc	oder spe	cifications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single			ıle turn	1,048,576	131,072

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.

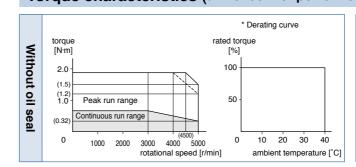
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

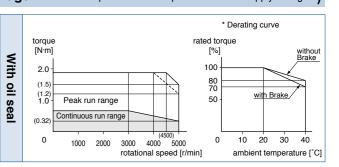
• Permissible load (For details, refer to P.183)

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

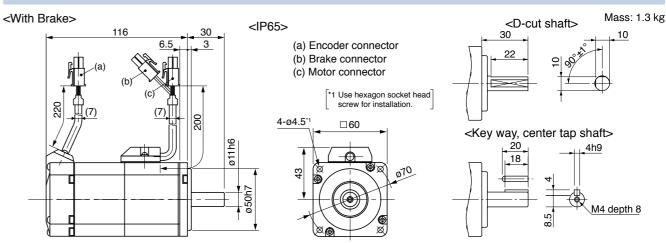
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver 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 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
Mataumaadal	IP65		MSMD041G1□	MSMD041S1	
Motor model		IP67		-	-
	Model	A5II, A5 series		MCD<	T3120
Applicable driver *2	No.	A5IIE, A5E series		MCD ♦T3120E	_
unven	Fr	ame sym	bol	C-fra	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 (A(o-p))			19).5	
Regenerative b	orake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P	4282	No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	5000	
Moment of ine	ertia	Without	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 encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1,048,576	131,072

• 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.

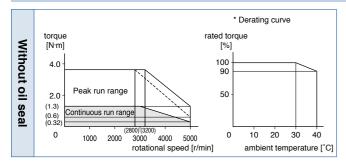
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

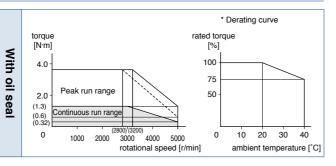
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
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, 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.

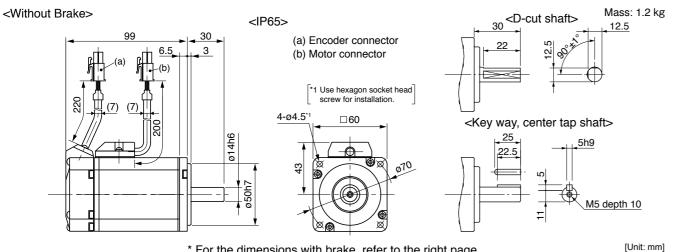
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





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.

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	
M		IP65		MSMD042G1□	MSMD042S1
Motor mode	:1	IP67		-	_
A	Model	A5 I I, A5	series	МВО	T2510
Applicable driver *	No.	A5IIE, A5E series		MBD ⊘T2510E	_
divoi	Fr	ame sym	bol	B-fra	ame
Power supp	ly capacit	y	(kVA)	0	9
Rated outpu	ut		(W)	40	00
Rated torqu	е		(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	
Regenerativ	e brake	Without	thout option No limit Note)2		t 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	0.26	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		0.28	
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 turn			1,048,576	131,072	

• 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.

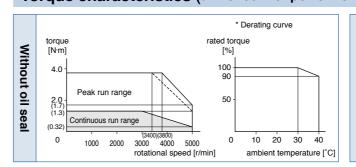
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

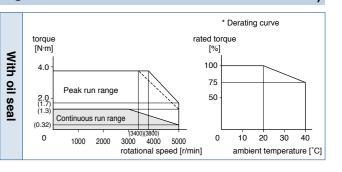
• Permissible load (For details, refer to P.183)

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)

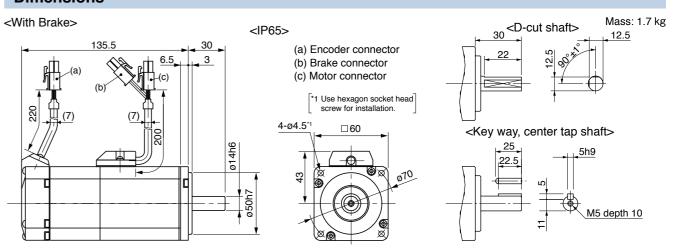
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

[Unit: mm]

			AC2	00 V
		IP65	MSMD082G1□	MSMD082S1□
Motor model *1		IP67	-	-
A munica mina	Model	A5II, A5 series	MCD ⊘ T3520	
Applicable driver *2	No.	A5IIE, A5E series	MCD ♦T3520E	-
unver	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		(A(o-p))	17	7.0
Regenerative b	rake	Without option	No lim	t Note)2
frequency (times/	nin) 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 ($\times 10^{-4}$	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			131,072

• 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.

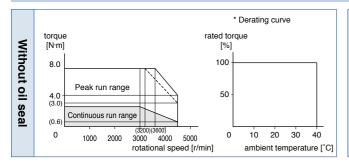
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

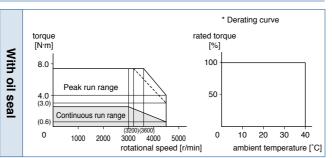
• Permissible load (For details, refer to P.183)

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

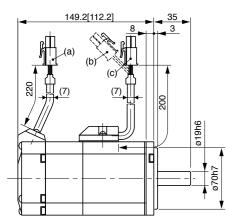
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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. □80

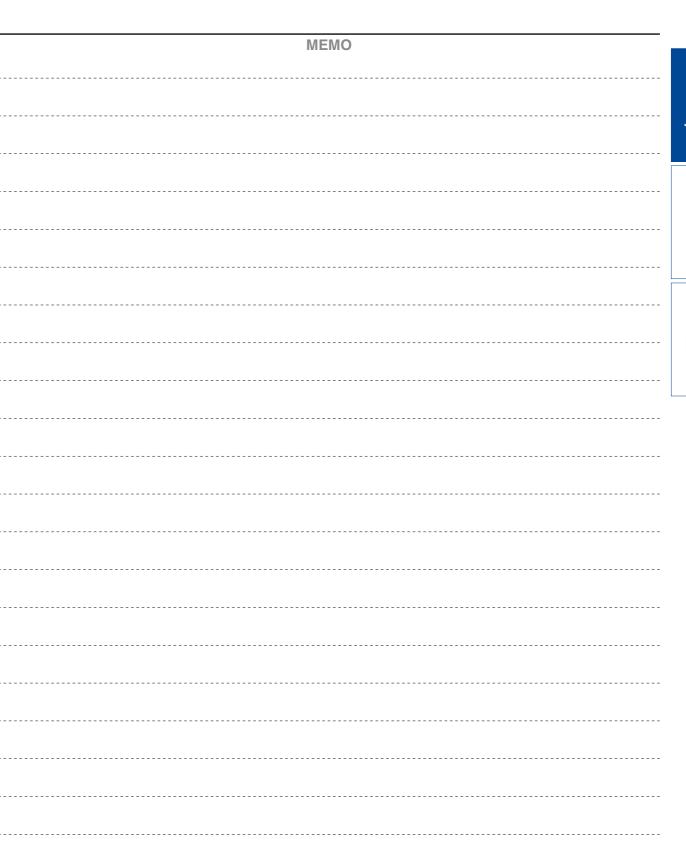
Mass: Without brake/ 2.3 kg With brake/ 3.1 kg <Key way, center tap shaft>

* 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.

<IP65>

(Unit:	mm1



			AC1	00 V	
Mataumadal		IP65		MHMD021G1□	MHMD021S1
Motor model		IP67		-	-
Amaliaahla	Model	A5II, A5	series	MBD ⊘ T2110	
Applicable driver *2	No.	A5IIE, A5	5E series	MBD ⊘T2110E	_
unven	Fr	ame sym	bol	B-fra	ame
Power supply	capacit	y	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.64	
Momentary M	ax. peal	k torque	(N·m)	1.91	
Rated current		(,	A(rms))	2.5	
Max. current		((A(o-p))	10.6	
Regenerative	orake	Without	option	No limit Note)2	
frequency (times	min) Note)1	DV0P4283		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	0.42	
of rotor (×10 ⁻²	kg·m²)	With b	rake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072	

• 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.

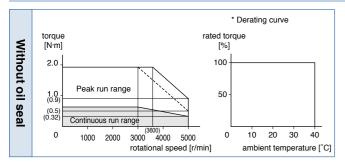
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

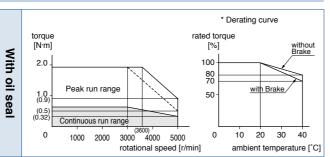
Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
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, 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.

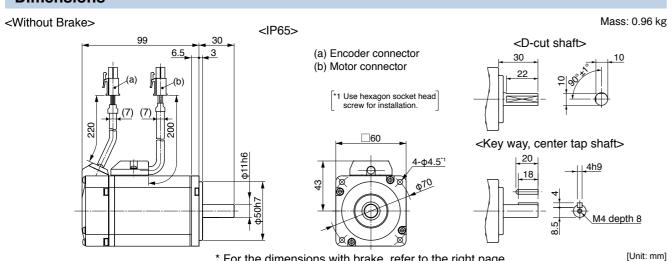
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





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

Specifications

			AC2	00 V	
Makau		IP65		MHMD022G1□	MHMD022S1
Motor mod	*1	IP67		-	-
A 1: 1- 1	Mode	A5II, A5	series	MAD	T1507
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ⊘T1507E	-
unven		Frame sym	ibol	A-fr	ame
Power supp	oly capac	ity	(kVA)	0	.5
Rated outp	ut		(W)	20	00
Rated torqu	ıe		(N·m)	0.0	64
Momentary	Max. pe	ak torque	(N·m)	1.91	
Rated curre	ent	(A(rms))	1.6	
Max. current (A(o-p))		6.9			
Regenerativ	/e brake	Without	option	No limit Note)2	
frequency (tir	mes/min) Note	DV0P	4283	No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	3000	
Max. rotation	onal spee	d	(r/min)	5000	
Moment of	inertia	Without	t brake	0.42	
of rotor (x1	0 ⁻⁴ kg·m ²) With b	orake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications No Resolution per single tu		Note)5	20-bit Incremental	17-bit Absolute	
		ion per sinc	ıle turn	1,048,576	131,072

• 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.

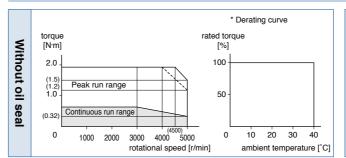
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

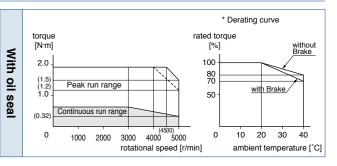
• Permissible load (For details, refer to P.183)

	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

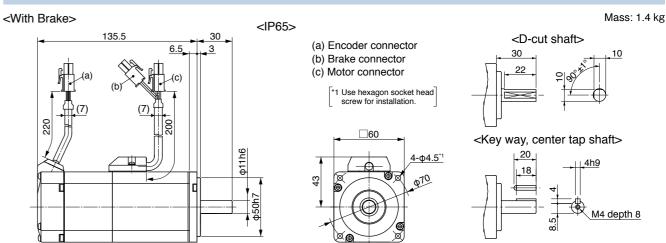
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

			AC1	00 V	
		IP65		MHMD041G1□	MHMD041S1
Motor model *1		IP67		-	-
Applicable	Model	A5II, A5 series		MCD ♦ T3120	
Applicable driver *2	No.	A5IIE, A5	E series	MCD ⊘T3120E	_
divoi	Fr	ame symb	ool	C-fr	ame
Power supply	capacit	y	(kVA)	0	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1	.3
Momentary M	ax. peal	k 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	DV0P4	1282	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	0.67	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			e turn	1,048,576	131,072

• 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.

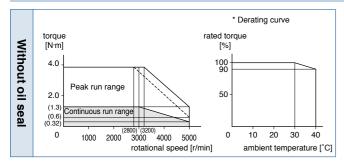
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

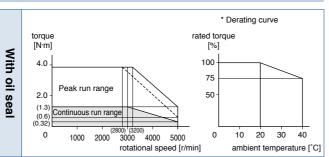
• Permissible load (For details, refer to P.183)

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

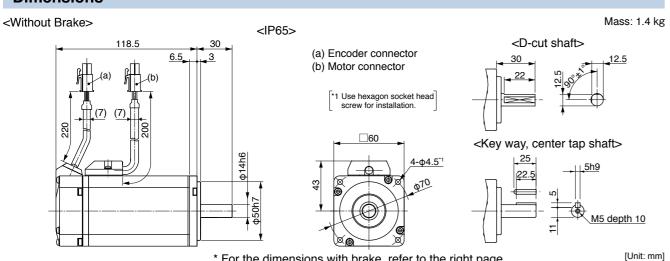
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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.

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

Specifications

			AC200 V		
Matanaaala		IP65		MHMD042G1□	MHMD042S1
Motor mode	:1	IP67		-	_
A L' l- L -	Model	A5 I I, A5	series	MBD<	T2510
Applicable driver *	No.	A5IIE, A	5E series	MBD ⊘T2510E	_
divoi	Fr	ame sym	bol	B-fra	ame
Power supp	ly capacit	y	(kVA)	0	.9
Rated outpu	ut		(W)	40	00
Rated torqu	е		(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	thout option No limit Note)2		t 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		0.67	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		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	1,048,576	131,072

200 V MHMD 400 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.

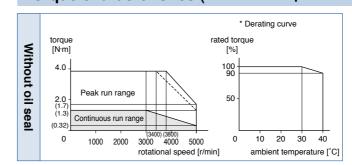
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

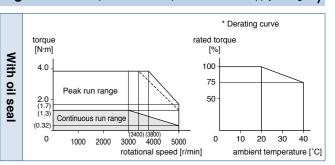
• Permissible load (For details, refer to P.183)

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)

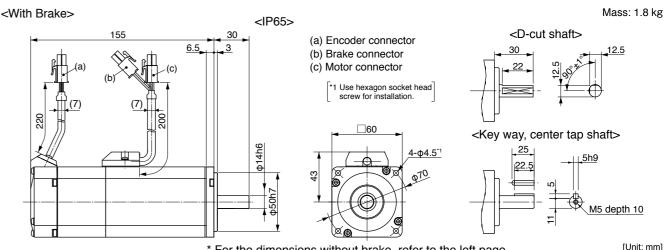
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

			AC2	00 V	
Matarranadal		IP65		MHMD082G1□	MHMD082S1
Motor model		IP67		-	-
Amaliaahla	Model	A5II, A5 ser	ries	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E	series	MCD ⊘T3520E	-
dilvei	Fi	ame symbo	ı	C-fr	ame
Power supply	capacit	у ((kVA)	1.	.3
Rated output			(W)	75	50
Rated torque		((N·m)	2	.4
Momentary N	1ax. pea	k torque ((N·m)	7.1	
Rated curren	t	(A(rms))	4.0	
Max. current		(A((o-p))	17	'.O
Regenerative	brake	Without option		No limit Note)2	
frequency (times	s/min) Note)1	DV0P4283		No limit Note)2	
Rated rotatio	nal spee	d (r	/min)	3000	
Max. rotation	al speed	(r	/min)	4500	
Moment of in	ertia	Without bi	rake	1.51	
of rotor (×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 encod	ler speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn			1,048,576	131,072

• 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.

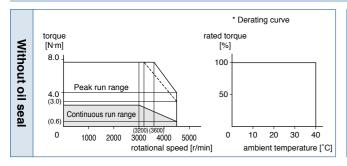
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

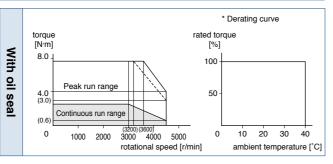
• Permissible load (For details, refer to P.183)

. .	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

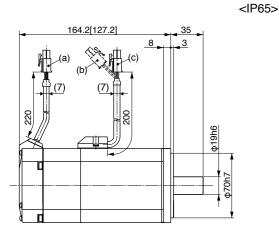
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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



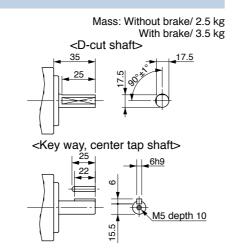


Dimensions



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

(a) Encoder connector



* 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

A5 Family

				AC100 V		
Motor model	IP65		-	_		
*1		IP67		MSME5AZG1□	MSME5AZS1□	
Ammliaabla	Model	A5II, A5	series	MAD	T1105	
Applicable 42	No.	A5IIE, A	5E series	MAD ⊘T1105E	_	
unver	Fi	ame sym	ıbol	A-fra	ame	
Power supply	capacit	y	(kVA)	0	.4	
Rated output			(W)	5	0	
Rated torque			(N·m)	0.	16	
Momentary M	ax. pea	k torque	(N·m)	0.48		
Rated current (A(rms))		1.1				
Max. current (A(o-p))		4.7				
Regenerative I	orake	Without	option	No limit Note)2		
frequency (times	min) Note)1	DV0P4280		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	6000		
Moment of ine	ertia	Withou	t brake	0.025		
of rotor (×10 ⁻²	kg·m²)	With I	orake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less				
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
F	Resolutio	n per sing	le turn	1,048,576	131,072	

• 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.

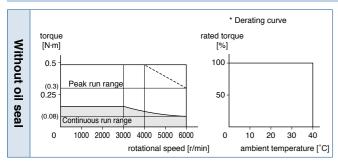
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

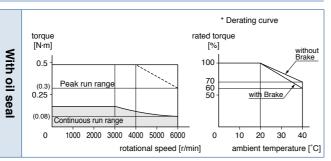
• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	147
During assembly	Thrust load A-direction (N)	88
assembly	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, 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.>)

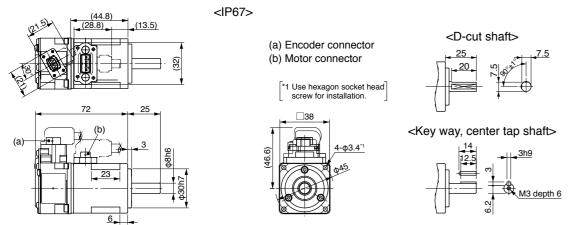




Dimensions

<Without Brake, Cable direction to output shaft>

Mass: 0.31 kg



* 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.

Specifications

					AC200 V		
			IP65		-	-	
Motor mod	1 C I *1		IP67		MSME5AZG1□	MSME5AZS1	
		Model	el A5II, A5 series		MAD	T1505	
Applicable driver	*2	No.	A5IIE, A5E series		MAD ⊘T1505E	-	
unver		Fr	ame sym	bol	A-fra	ame	
Power sup	ply c	apacit	/	(kVA)	0	.5	
Rated outp	out			(W)	5	0	
Rated torq	ue			(N·m)	0.	16	
Momentary	у Ма	x. peal	torque	(N·m)	0.48		
Rated current (A(rms))			1.1				
Max. current (A(o-p))			4.	.7			
Regenerati	ve br	ake	Without	option	No limit Note)2		
frequency (ti	imes/mi	n) Note)1	DV0P4280		No limit Note)2		
Rated rota	tiona	l spee	d	(r/min)	3000		
Max. rotati	ional	speed		(r/min)	6000		
Moment of	f iner	tia	Without	brake	0.025		
of rotor (x1	10 ⁻⁴ k	(g·m²)	With b	orake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less				
Rotary end	coder	speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per single turn			1,048,576	131,072		

• 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.

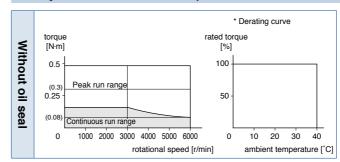
0.29 or more
35 or less
20 or less
0.3
1 or more
24±1.2

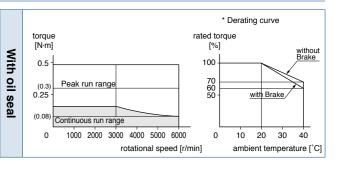
• Permissible load (For details, refer to P.183)

	During assembly 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, 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.

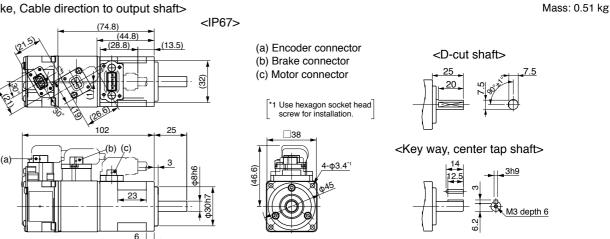
Torque characteristics (at AC200V of power voltage)





Dimensions

<With Brake, Cable direction to output shaft>



* 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.

			AC1	00 V
Motor model		IP65	-	-
*1		IP67	MSME011G1	MSME011S1
A !! !-! -	Model	A5II, A5 series	MAD	T1107
Applicable driver *2	No.	A5IIE, A5E series	MAD ⊘T1107E	-
unver	Fr	ame symbol	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))	1.6	
Max. current		(A(o-p))	6.9	
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/r	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	Noment of inertia Without b		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 encoder specifications Note)5			20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072

• 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.

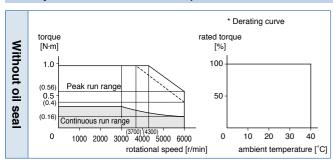
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

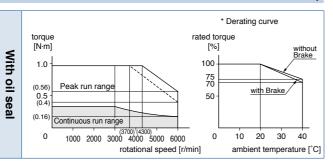
Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
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, 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.>)

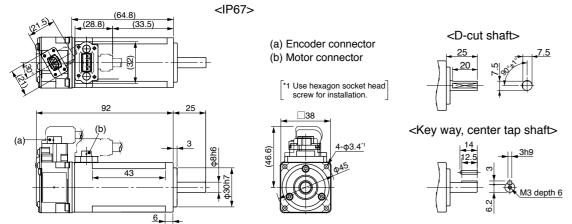




Dimensions

<Without Brake, Cable direction to output shaft>

Mass: 0.46 kg



* 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. [Unit: mm]

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

Specifications

				AC2	00 V
		IP65		-	-
Motor mod	el *1	IP67		MSME012G1□	MSME012S1
	Model	A5II, A5	series	MAD	T1505
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ◇T1505E	_
unven	F	rame sym	bol	A-fra	ame
Power supp	ply capacit	ty	(kVA)	0.	.5
Rated outp	ut		(W)	10	00
Rated torqu	ne		(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	ve brake	Without	option	No limit Note)2	
frequency (tir		1 DV0P4280		No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	3000	
Max. rotation	onal speed	i	(r/min)	6000	
Moment of	inertia	Without	brake	0.051	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	0.0	54
Recommended moment of inertia ratio of the load and the rotor Note)3		tia Note)3	30 times	s or less	
Rotary enc	oder spec	fications	Note)5	20-bit Incremental	17-bit Absolute
	n per sing	le turn	1,048,576	131,072	

• 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.

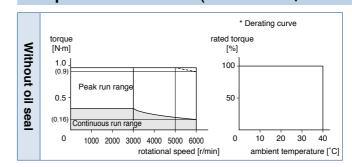
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

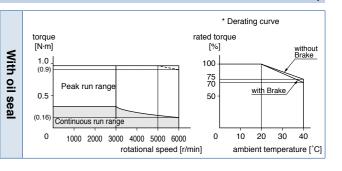
• Permissible load (For details, refer to P.183)

	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

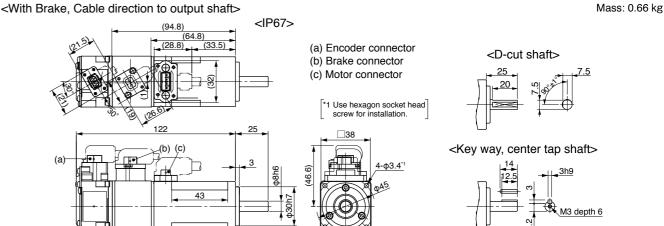
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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	
Mataumaadal	IP65		-	-	
Motor model *1		IP67		MSME021G1□	MSME021S1
A so so librar la La	Model	A5 I I, A5 se	eries	MBD<	T2110
Applicable 42	No.	A5IIE, A5I	E series	MBD ⊘T2110E	-
unvei	Fr	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. peal	k torque	(N·m)	1.91	
Rated current		(A	(rms))	2.5	
Max. current		(A	(o-p))	10.6	
Regenerative b	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)	6000	
Moment of ine	ertia	Without b	orake	0.14	
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	0.16	
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	1,048,576	131,072

• 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.

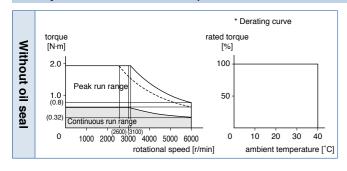
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

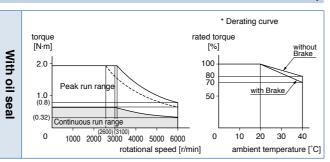
Permissible load (For details, refer to P.183)

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, 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.>)

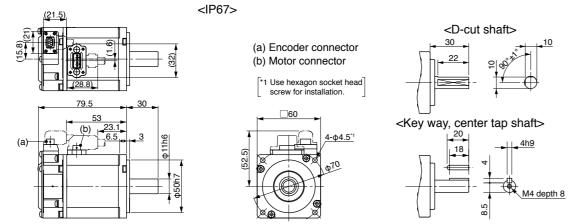




Dimensions

<Without Brake, Cable direction to output shaft>

Mass: 0.78 kg



* 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
Materia		IP65		-	-
Motor mode *	•	IP67		MSME022G1□	MSME022S1
A	Model	A5 I I, A5	series	MAD	T1507
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1507E	-
unvei	Fr	ame sym	bol	A-fra	ame
Power supp	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 curre	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·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 enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolutio	n per sing	le turn	1,048,576	131,072

200 V MSME 200 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.

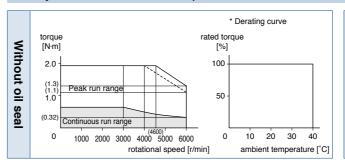
,
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

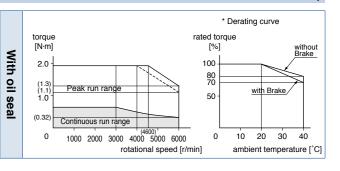
• Permissible load (For details, refer to P.183)

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, 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.

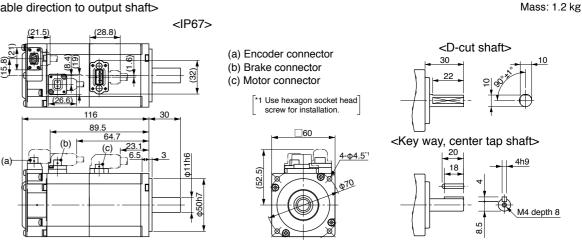
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<With Brake, Cable direction to output shaft>



* 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		
		IP65		-	-
Motor model *1		IP67		MSME041G1□	MSME041S1
A 1' 11	Model	A5II, A5 series		MCD()	T3120
Applicable driver *2	No.	A5IIE, A5E series		MCD ⊘T3120E	-
dilvei	Fr	ame sym	bol	C-fra	ame
Power supply	capacit	y	(kVA)	0.	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1.3	
Momentary Ma	ax. peal	k torque	(N·m)	3.8	
Rated current		(A(rms))	4.6	
Max. current		((A(o-p))	19.5	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/i	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 b	rake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1,048,576	131,072

• 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.

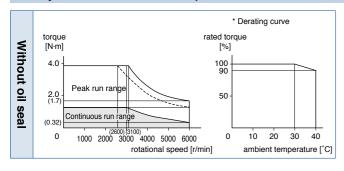
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

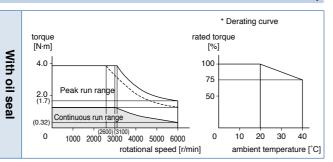
• Permissible load (For details, refer to P.183)

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

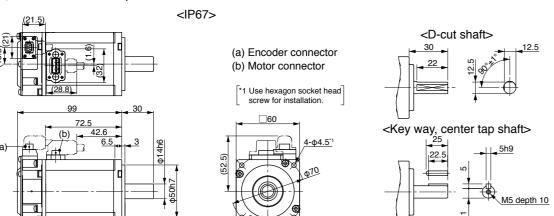
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Without Brake, Cable direction to output shaft>



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

[Unit: mm]

Mass: 1.2 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.

Specifications

				AC2	00 V
	-1	IP65		-	_
Motor mod	*1	IP67		MSME042G1□	MSME042S1
	Model	A5II, A5	series	MBD ◇T2510	
Applicable driver	*2 No.	A5IE, A	5E series	MBD ⊘T2510E	-
unver	F	rame sym	bol	B-frame	
Power sup	ply capaci	ty	(kVA)	0	.9
Rated outp	out		(W)	40	00
Rated torq	ue		(N·m)	1.	.3
Momentary	/ Max. pea	k torque	(N·m)	3.8	
Rated current (A(rms))			2.4		
Max. curre	nt		(A(o-p))	10.2	
Regenerati	ve brake	Without	option	No limi	t Note)2
frequency (ti	mes/min) Note)	DV0P4283		No limit Note)2	
Rated rota	tional spec	ed	(r/min)	3000	
Max. rotati	onal speed	t	(r/min)	6000	
Moment of	inertia	Without	t brake	0.26	
of rotor (×10 ⁻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	
Resolution per single turn			le turn	1,048,576	131,072

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.

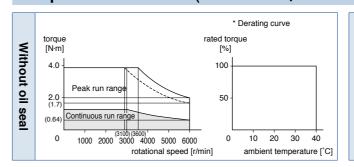
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

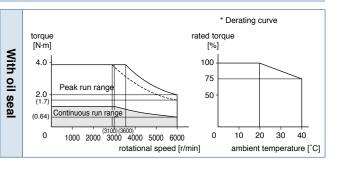
• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
doscinory	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, 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.>)

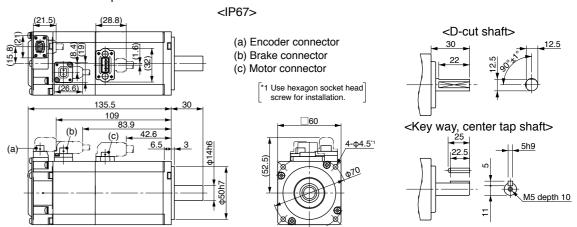




Dimensions

<With Brake, Cable direction to output shaft>





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

[Unit: mm]

			AC200 V	
Motor model		IP65	_	-
wotor model *1		IP67	MSME082G1□	MSME082S1
Amaliaahla	Model	A5II, A5 series	MCD ⊘ T3520	
Applicable driver *2	No.	A5IE, A5E series	MCD ⊘T3520E	-
unven	Fı	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	1	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2	.4
Momentary M	ax. pea	k torque (N·m)	7.1	
Rated current		(A(rms))	4.1	
Max. current		(A(o-p))	17.4	
Regenerative	brake	Without option	No limit Note)2	
frequency (times	/min) Note)1	DV0P4283	No limit Note)2	
Rated rotation	nal spee	d (r/min)	3000	
Max. rotationa	al speed	(r/min)	6000	
Moment of ine	ertia	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 encoder specifications Note)5			20-bit Incremental	17-bit Absolute
F	Resolutio	n per single turn	1,048,576	131,072

• 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.

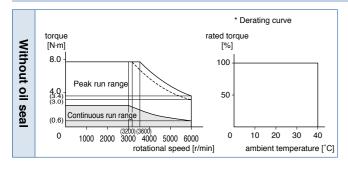
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

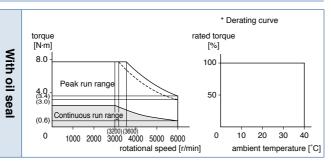
Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	686
During assemb	Thrust load A-direction (N)	294
accomb	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operatio	n Thrust load A, B-direction (N)	147

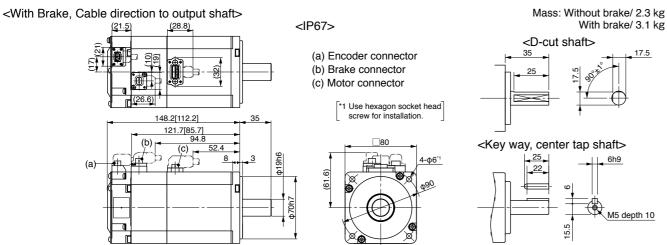
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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



* Figures in [] represent the dimensions without brake.

73

[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			MSME102GC□	MSME102SC	
Motor mod	1 e l *1		IP67		MSME102G1□	MSME102S1	
		Model	A5II, A5 series		MDD<	T5540	
Applicable driver	*2	No.	A5IIE, A5E series		MDD \diamondsuit T5540E	_	
unver		Fr	ame sym	bol	D-fr	D-frame	
Power sup	ply c	apacit	/	(kVA)	1.	.8	
Rated outp	out			(W)	10	00	
Rated torq	ue			(N·m)	3.	18	
Momentary Max. peak torque (N·m)				9.55			
Rated current (A(rms))			6.6				
Max. current (A(o-p))				28			
Regenerati	ve br	ake	Without option		No limit Note)2		
frequency (ti	imes/m	in) Note)1	DV0P4284		No limit Note)2		
Rated rota	tiona	l spee	d	(r/min)	3000		
Max. rotati	ional	speed		(r/min)	5000		
Moment of	f iner	tia	Without	brake	2.0	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 end	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per si			n per sing	le turn	1,048,576	131,072	

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.

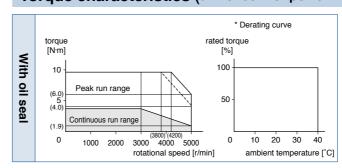
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

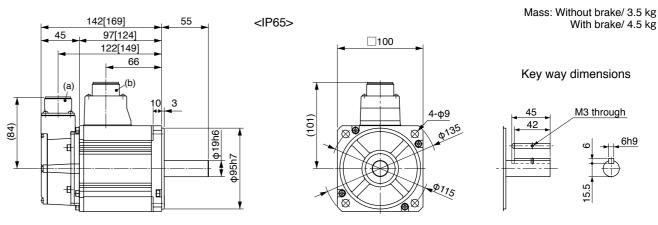
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, 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.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 IP67		MSME152GC□	MSME152SC	
*1			MSME152G1□	MSME152S1	
Amaliaahla	Model	A5II, A5 series	;	MDD<	T5540
Applicable *2	No.	A5IIE, A5E se	ries	MDD ◇T5540E	-
dilvei	Fr	ame symbol		D-fra	ame
Power supply	capacit	y (k\	/A)	2.	3
Rated output		(W)	15	00
Rated torque		(N	m)	4.7	77
Momentary Ma	ax. peal	k torque (N	m)	14.3	
Rated current		(A(rm	s))	8.2	
Max. current		(A(o-	p))	35	
Regenerative b	rake	Without option		No limit Note)2	
frequency (times/r	nin) Note)1 DV0P4284			No limi	t Note)2
Rated rotation	al spee	d (r/m	in)	3000	
Max. rotationa	l speed	(r/m	in)	5000	
Moment of ine	rtia	Without brak	е	2.84	
of rotor (×10 ⁻⁴	kg·m²)	With brake	!	3. ⁻	17
Recommended moment of inertia ratio of the load and the rotor Note)3			te)3	15 times or less	
Rotary encode	er speci	fications No	te)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single tu	'n	1,048,576	131,072

• 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.

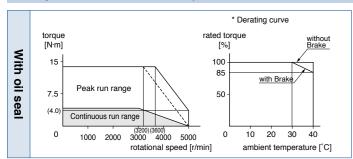
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

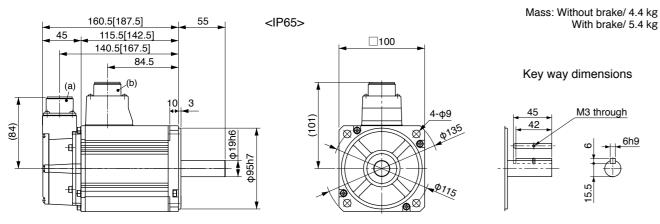
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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 (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
		IP65		MSME202GC□	MSME202SC
Motor mode	e 1	IP67 MSME		MSME202G1□	MSME202S1
	Model	A5II, A5 series		MED◇	T7364
Applicable driver	No.	A5IIE, A	5E series	MED ⊘T7364E	-
unven	Fi	rame sym	bol	E-fra	ame
Power supp	oly capacit	у	(kVA)	3.	.3
Rated outpo	ut		(W)	20	00
Rated torqu	ie		(N·m)	6.5	37
Momentary	Max. pea	k torque	(N·m)	19.1	
Rated curre	ent	(A(rms))	11.3	
Max. current (A(o-p))		4	8		
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tin	nes/min) Note)1	DV0P	4285	No limit Note)2	
Rated rotat	ional spee	d	(r/min)	30	00
Max. rotation	nal speed		(r/min)	5000	
Moment of	inertia	Without brake		3.68	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	4.0	01
Recommen ratio of the			tia Note)3	15 times	s or less
Rotary encoder specificat		fications	Note)5	20-bit Incremental	17-bit Absolute
	Resolutio	n per sing	le turn	1,048,576	131,072

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.

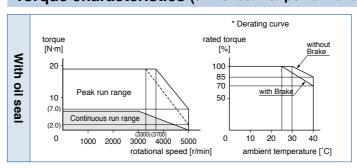
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

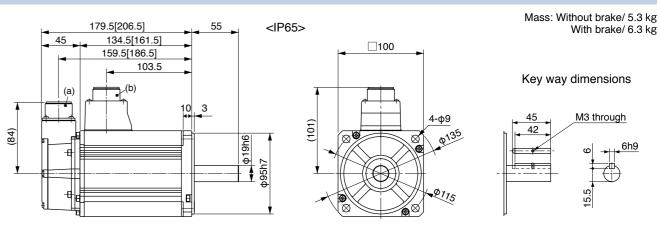
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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		
Motor model		IP65	MSME302GC□	MSME302SC□		
*1		IP67	MSME302G1□	MSME302S1□		
Amaliaahla	Model	A5II, A5 series	MFD⇔TA390			
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_		
anver	Fr	ame symbol	F-fra	ame		
Power supply	capacit	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/i	min) Note)1	DV0P4285×2	No limi	t Note)2		
Rated rotation	nal speed (r/min)		Rated rotational speed		30	00
Max. rotationa	l speed	(r/min)	50	00		
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 encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1,048,576	131,072		

• 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.

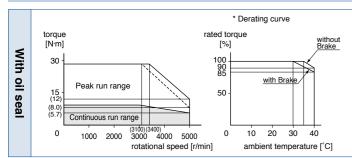
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

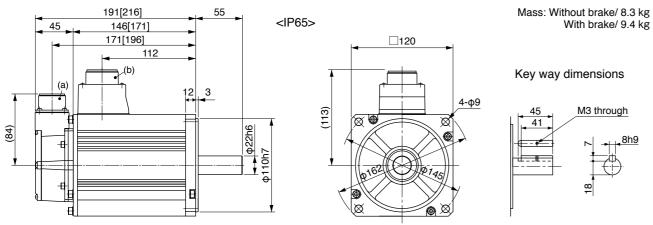
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.>)



(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
			IP65		MSME402GC□	MSME402SC
Motor mod	1 CI *1		IP67		MSME402G1□	MSME402S1
		Model	A5II, A5	series	MFD♦	TB3A2
Applicable driver	*2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
unver		Fr	ame sym	bol	F-fra	ame
Power sup	ply c	apacity	/	(kVA)	6.	0
Rated outp	out			(W)	40	00
Rated torq	ue			(N·m)	12	2.7
Momentary	у Ма	x. peal	c torque	(N·m)	38.2	
Rated curr	ent		(A(rms))	19.6	
Max. curre	nt		((A(o-p))	8	3
Regenerati	ve br	ake	Without option		No limit Note)2	
frequency (ti	imes/mi	n) Note)1	DV0P4	285×2	No limi	t Note)2
Rated rota	tiona	l spee	d	(r/min)	30	00
Max. rotati	ional	speed		(r/min)	45	00
Moment of	f iner	tia	Without brake		12.9	
of rotor (x1	10 ⁻⁴ k	g·m²)	With b	rake	14.2	
Recommer ratio of the			0	tia Note)3	15 times	s or less
Rotary end	coder	specif	fications	Note)5	20-bit Incremental	17-bit Absolute
	Re	solutio	n per sing	le turn	1,048,576	131,072

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.

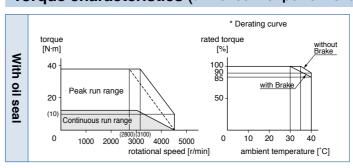
,	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

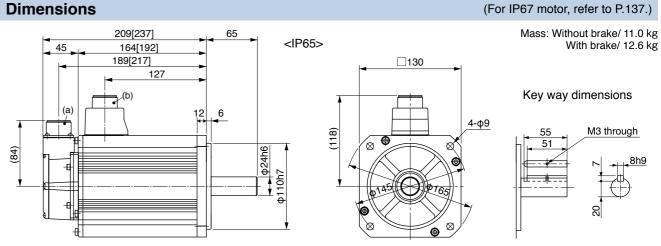
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.>)



(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		MSME502GC□	MSME502SC□
*1		IP67	MSME502G1□	MSME502S1
A mustic a late	Model	A5II, A5 series	MFD⇔TB3A2	
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fı	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	7	.5
Rated output		(W)	50	00
Rated torque		(N·m)	15.9	
Momentary Ma	ax. pea	k 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/i	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 (×10 ⁻⁴	kg·m²)	With brake	18.6	
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	Resolution per single turn			131,072

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.

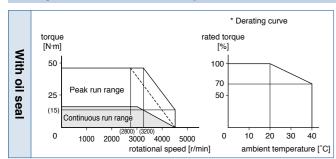
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

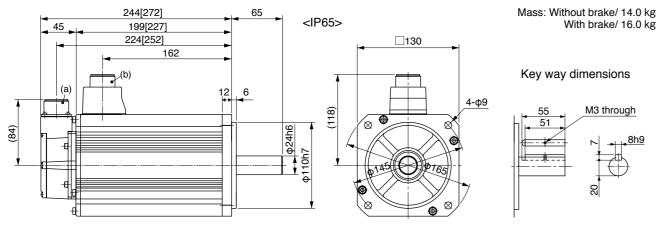
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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



Dimensions

(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
M -4	-1	IP65		MDME102GC	MDME102SC
Motor mod	*1	IP67		MDME102G1□	MDME102S1
	Model	A5II, A5	series	MDD<	T3530
Applicable driver	*2 No.	A5IIE, A	5E series	MDD ⊘T3530E	-
unven	F	rame sym	bol	D-fr	ame
Power supp	oly capacit	ty	(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. current (A(o-p))			2	4	
Regenerativ	/e brake	Without	option	No limi	t Note)2
frequency (tir	mes/min) Note)	DV0P4284		No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	onal speed	i	(r/min)	3000	
Moment of	inertia	Without	brake	4.60	
of rotor (×10 ⁻⁴ kg·m ²)		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 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		n per sina	le turn	1,048,576	131,072

200 V MDME 1.0 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.

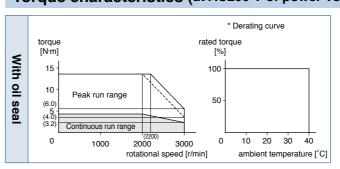
,	,
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

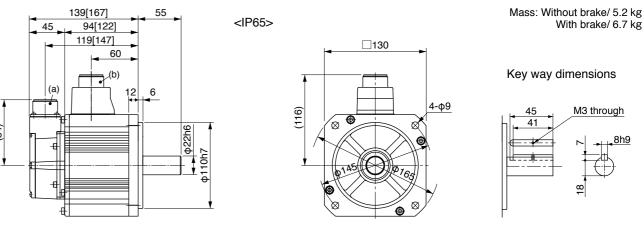
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, 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.138.)



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

[Unit: mm]

			AC2	00 V
Motor model	IP65		MDME152GC	MDME152SC
WIOTOT MODE!		IP67	MDME152G1	MDME152S1
A multipolate	Model	A5II, A5 series	MDD ◇T 5540	
Applicable driver *2	No.	A5IIE, A5E series	MDD \diamondsuit T5540E	_
unver	Fı	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	2	.3
Rated output		(W)	15	00
Rated torque		(N·m)	7.16	
Momentary Ma	ax. pea	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/i	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·m²)	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			131,072

• 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.

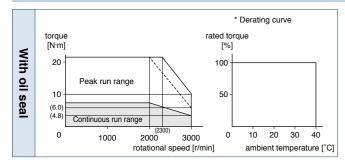
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

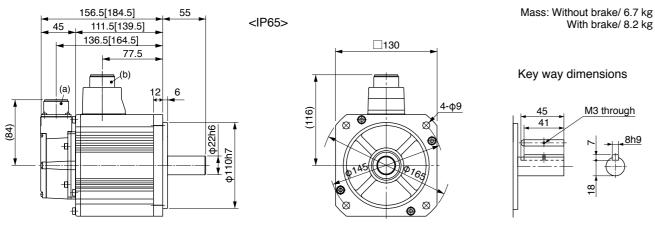
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

(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		MDME202GC□	MDME202SC	
Motor mod	*1		IP67		MDME202G1□	MDME202S1
		Model	A5II, A5	series	MED<	T7364
Applicable driver	*2	No.	A5IIE, A	5E series	MED ⊘T7364E	-
unven		Fr	ame sym	bol	E-fra	ame
Power sup	ply o	capacity	/	(kVA)	3.	.3
Rated outp	out			(W)	20	00
Rated torq	ue			(N·m)	9.9	55
Momentary	/ Ma	x. peal	c torque	(N·m)	28.6	
Rated curr	ent		(A(rms))	11.5	
Max. curre	nt		((A(o-p))	4	9
Regenerati	ve b	rake	Without	option	No limit Note)2	
frequency (ti			DV0P	P4285 No limit Note)2		t Note)2
Rated rotal	tiona	al spee	d	(r/min)	2000	
Max. rotati	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without	brake	8.72	
of rotor (×10 ⁻⁴ kg·m²)		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		Note)5	20-bit Incremental	17-bit Absolute		
Resolutio		n per sina	le turn	1,048,576	131,072	

200 V MDME 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.

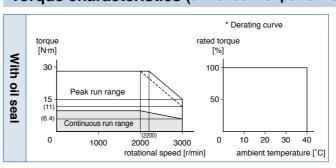
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

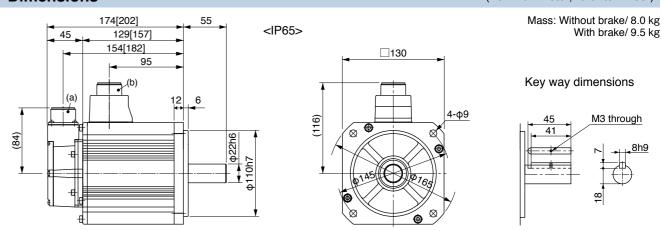
	Radial load P-direction (N)	980
During assem	Thrust load A-direction (N)	588
doooni	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operati	on Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.138.)



- (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.

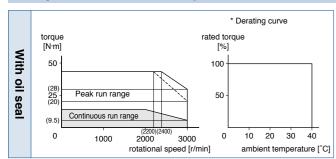
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

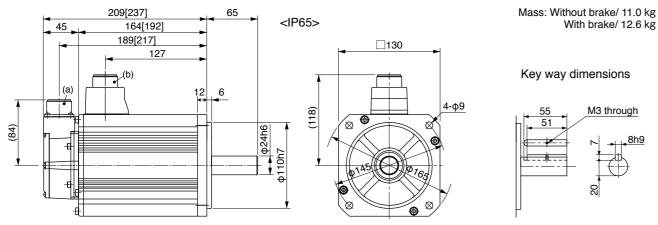
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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

Specifications

			AC2	00 V
Makanasadal		IP65	MDME402GC	MDME402SC
Motor model		IP67	MDME402G1□	MDME402S1
A 1: 1- 1	Model	A5II, A5 series	MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fı	rame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6	.0
Rated output		(W)	40	00
Rated torque		(N·m)	19).1
Momentary M	ax. pea	k torque (N·m)	57.3	
Rated current		(A(rms))	21.0	
Max. current		(A(o-p))	8	9
Regenerative b	orake	Without option	No limi	it Note)2
frequency (times/	min) Note)1	DV0P4285×2	No limi	it 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 (×10 ⁻⁴	kg·m²)	With brake	38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131,072

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.

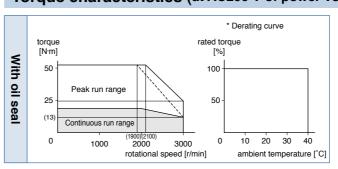
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

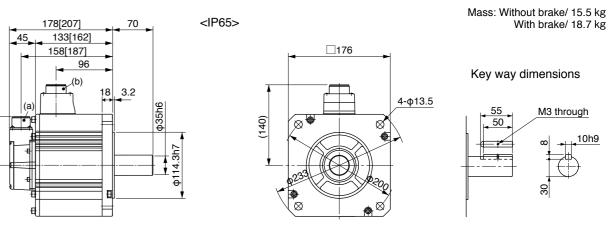
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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]

				AC2	00 V
IP65		MDME502GC	MDME502SC		
Motor model *1		IP67		MDME502G1	MDME502S1
A II I- I -	Model	A5II, A5	series	MFD ⊘TB3A2	
Applicable driver *2	No.	A5IIE, A5	E series	MFD ⊘TB3A2E	-
unver	Fr	ame syml	bol	F-fra	ame
Power supply	capacit	у	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	23	1.9
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/r	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 ($\times 10^{-4}$	kg·m²)	With b	rake	48.8	
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			le turn	1,048,576	131,072

• 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.

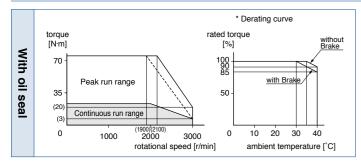
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

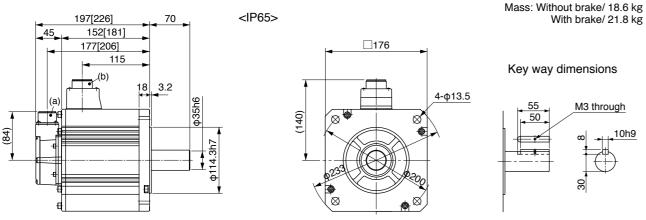
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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
Matauaraada		IP65		-	-
Motor model	·	IP67		MDME752G1	MDME752S1
A II In I .	Model	A5 I I, A5	series	MGD♦	TC3B4
Applicable driver *2	No.	A5IIE, A	5E series	-	_
unver	Fr	ame sym	bol	G-fr	ame
Power suppl	y capacit	y	(kVA)	1	1
Rated outpu	t		(W)	75	00
Rated torque	e		(N·m)	47	'.8
Momentary I	Max. peal	k torque	(N·m)	119	
Rated currer	nt	(A(rms))	44.0	
Max. current	İ	((A(o-p))	16	35
Regenerative	brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0P4	0V0P4285×3 No limit Note)2		t Note)2
Rated rotation	nal spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	3000	
Moment of ir	nertia	Without	brake	101	
of rotor (×10 ⁻⁴ kg·m²) With brake		rake	107		
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			1,048,576	131,072	

200 V MDME 7.5 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.

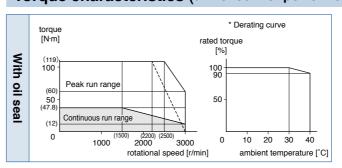
,	,
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

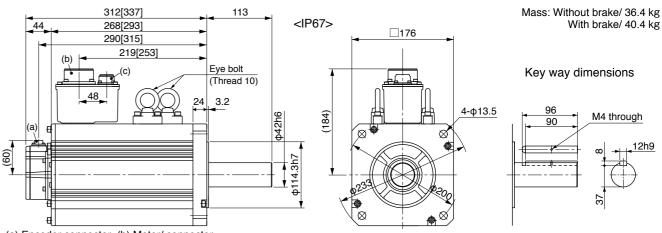
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
document	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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		IP67	MDMEC12G1	MDMEC12S1
Ammlianhla	Model	A5II, A5 series	MHD ⊘TC3B 4	
Applicable driver *2	No.	A5IIE, A5E series	_	_
anver	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/	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 (×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	1,048,576	131,072

• 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.

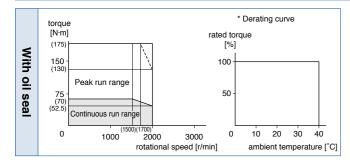
100 or more
300 or less
140 or less
1.08±10 %
2 or more
24±2.4

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

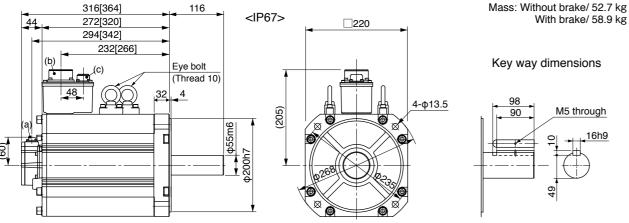
_	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
assembly	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, 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
Mataumaada		IP65		-	-
Motor mode *	.	IP67		MDMEC52G1	MDMEC52S1
A II I. I .	Model	A5 I I, A5	series	MHD♦	TC3B4
Applicable driver *	No.	A5IIE, A	5E series	-	_
unver	Fr	ame sym	bol	H-fr	ame
Power supp	ly capacit	y	(kVA)	2	2
Rated outpu	it		(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 (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	30)2
of rotor (×10 ⁻⁴ kg·m²) With brak		rake	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		
Resolution per single turn			1,048,576	131,072	

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.

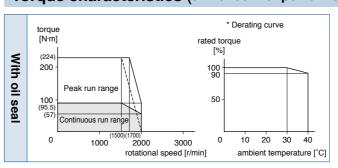
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

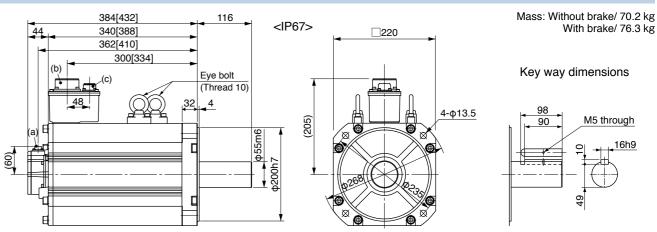
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
document	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, 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]

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.

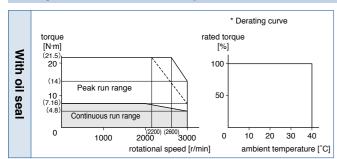
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

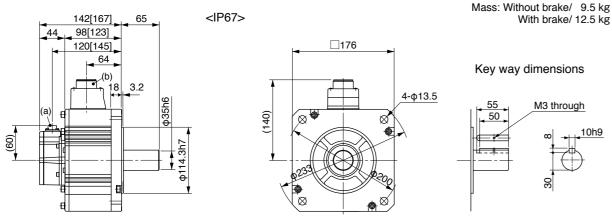
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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) 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
Mataumat	-1	IP65		-	-
Motor mode	el *1	IP67		MFME252G1□	MFME252S1
A	Model	A5 I I, A5	series	MED◇	T7364
Applicable driver	*2 No.	A5IIE, A	5E series	MED ⊘T7364E	_
unven	F	rame sym	bol	E-fra	ame
Power supp	oly capacit	у	(kVA)	3.	.8
Rated outp	ut		(W)	25	00
Rated torqu	ıe		(N·m)	11	.9
Momentary	Max. pea	k torque	(N·m)	30.4	
Rated curre	ent	(.	A(rms))	13.4	
Max. current (A(o-p))			57		
Regenerativ	/e brake	Without	option	7	5
frequency (tir	mes/min) Note)1	DV0P4285		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	35	5.8
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	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		Note)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1,048,576	131,072

200 V MFME 2.5 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.

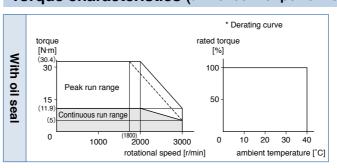
21.6 or more
150 or less
100 or less
0.75±10 %
2 or more
24±2.4

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

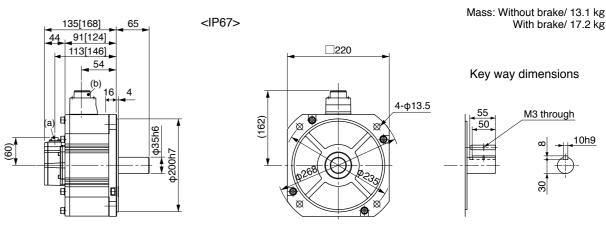
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, 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 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]

				AC2	00 V
		IP65		-	-
Motor model		IP67		MFME452G1□	MFME452S1
A Un a la la	Model	A5I , A 5 s	eries	MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5	E series	MFD ⊘TB3A2E	_
unven	Fr	ame symb	ol	F-fra	ame
Power supply	capacit	y	(kVA)	6.	.8
Rated output			(W)	45	00
Rated torque			(N·m)	21	.5
Momentary M	ax. peal	k torque	(N·m)	54.9	
Rated current		(A	(rms))	24.7	
Max. current		(/	A(o-p))	105	
Regenerative	orake	Without option		67	
frequency (times	min) Note)1	DV0P4285×2		375	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotationa	al speed		(r/min)	3000	
Moment of ine	ertia	Without I	brake	63.1	
of rotor (×10 ⁻²	kg·m²)	With br	ake	70.9	
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		
F	Resolution per single turn			1,048,576	131,072

• 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.

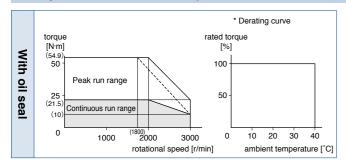
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

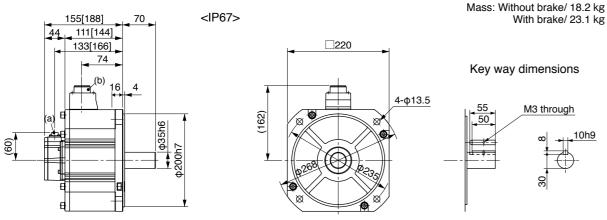
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, 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	
Matawasada		IP65		MGME092GC□	MGME092SC
Motor mode	el ⊧1	IP67		MGME092G1□	MGME092S1
A I' l. l .	Model	A5II, A5	series	MDD<	T5540
Applicable driver *	No.	A5IIE, A	5E series	MDD ⊘T5540E	-
unven	F	rame sym	bol	D-fr	ame
Power supp	oly capaci	ty	(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 current (A(rms))		7.6			
Max. current (A(o-p))		24			
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tim	nes/min) Note)	DV0P4284		No limit Note)2	
Rated rotati	ional spec	ed	(r/min)	1000	
Max. rotation	nal speed	t	(r/min)	2000	
Moment of	inertia	Without	t brake	6.70	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	7.9	99
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		ile turn	1,048,576	131,072	

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.

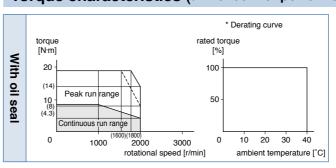
1	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

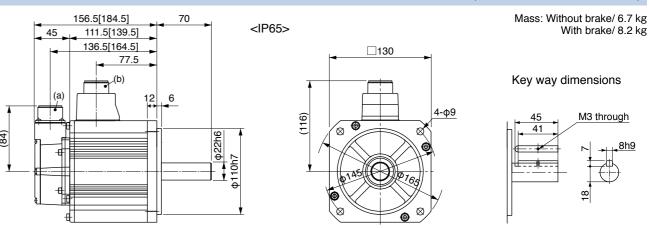
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	686
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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]

			AC2	00 V
Motor mode	al	IP65	MGME202GC□	MGME202SC□
	∄ I ∗1	IP67	MGME202G1□	MGME202S1□
Annliaahla	Model	A5II, A5 series	MFD⇔	TA390
Applicable driver	No.	A5IIE, A5E series	MFD ⊘TA390E	_
dilvoi	Fi	rame symbol	F-fra	ame
Power supp	oly capacit	y (kVA)	3	.8
Rated outpo	ut	(W)	20	00
Rated torqu	ıe	(N·m)	19).1
Momentary	Max. pea	k torque (N·m)	47.7	
Rated current (A(rms))			17.0	
Max. current (A(o-p))		6	0	
Regenerative brake Without option		No limi	t Note)2	
frequency (times/min) Note)1		DV0P4285×2	No limit Note)2	
Rated rotat	ional spee	d (r/min)	1000	
Max. rotation	onal speed	(r/min)	2000	
Moment of	inertia	Without brake	30.3	
of rotor (×1	0 ⁻⁴ kg·m ²)	With brake	31.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary enco	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolution per single turn		1,048,576	131,072	

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.

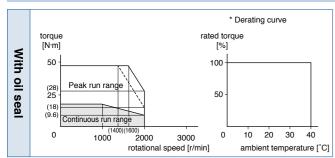
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

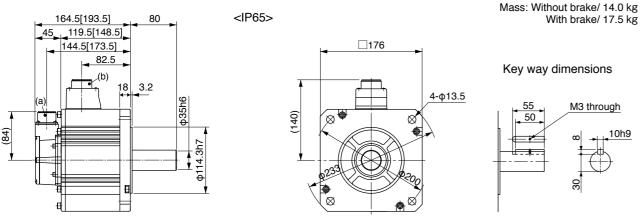
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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
Matanagadal		IP65		MGME302GC□	MGME302SC
Motor model		IP67		MGME302G1□	MGME302S1
A II I- I	Model	A5 I I, A5	series	MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-
unven	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	4.	.5
Rated output			(W)	30	00
Rated torque			(N·m)	28	3.7
Momentary M	ax. peal	k torque	(N·m)	71.7	
Rated current		(.	A(rms))	22.6	
Max. current (A(o-p))		8	0		
Regenerative I	orake	Without	option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1000	
Max. rotationa	al speed		(r/min)	2000	
Moment of ine	ertia	Without brake		48.4	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	e 49.2	
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		
F	Resolution per single turn			1,048,576	131,072

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.

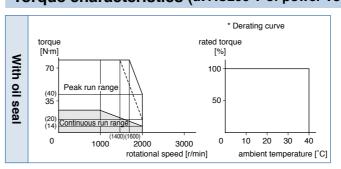
1	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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 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, 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

210.5[239.5]

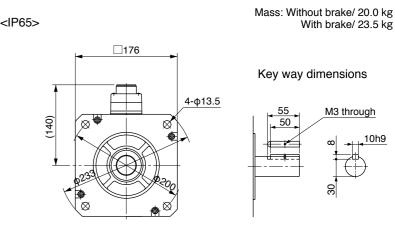
165.5[194.5]

128.5

3.2

190.5[219.5]

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



- (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. [Unit: mm]

			AC2	00 V
IP65		-	-	
Motor model *1		IP67	MGME452G1□	MGME452S1□
A	Model	A5II, A5 series	MFD◇	TB3A2
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
dilvei	Fr	ame symbol	F-fra	ame
Power supply of	capacity	y (kVA)	7.	.5
Rated output		(W)	45	00
Rated torque		(N·m)	43	3.0
Momentary Ma	ax. peal	k torque (N·m)	107	
Rated current (A(rms))		29.7		
Max. current (A(o-p))		110		
Regenerative brake Without option		Without option	No limi	t Note)2
t		DV0P4285×2	No limit Note)2	
Rated rotations	al spee	d (r/min)	1000	
Max. rotational	speed	(r/min)	2000	
Moment of ine	rtia	Without brake	79.1	
of rotor (×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 encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Re	esolutio	n per single turn	1,048,576	131,072

• 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.

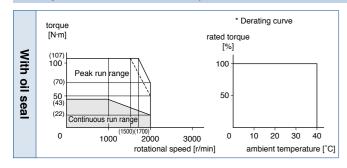
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

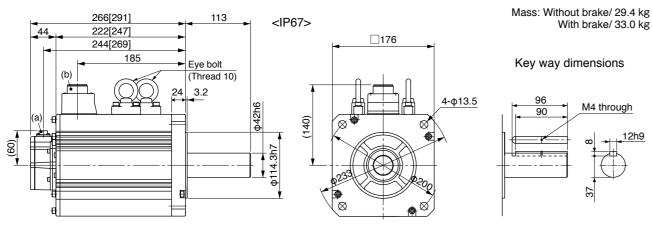
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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	
Motor mode	al.	IP65		-	-
	*1	IP67		MGME602G1□	MGME602S1
	Mode	odel A5II, A5 series		MGD◇	TC3B4
Applicable driver	*2 No.	A5IIE, A	5E series	_	_
diivoi	F	rame sym	bol	G-fr	ame
Power supp	oly capaci	ty	(kVA)	9	.0
Rated outp	ut		(W)	60	00
Rated torqu	ıe		(N·m)	57	7.3
Momentary	Max. pea	ak torque	(N·m)	143	
Rated curre	ent	(A(rms))	38.8	
Max. current (A(o-p))			149		
Regenerativ	e brake	Without	option	No limi	it Note)2
frequency (tir	mes/min) Note)	DV0P4	285×4	4 No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	1000	
Max. rotation	onal spee	d	(r/min)	2000	
Moment of	inertia	Without	t brake	101	
of rotor (×10 ⁻⁴ kg·m²) With brake			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			20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072	

• 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.

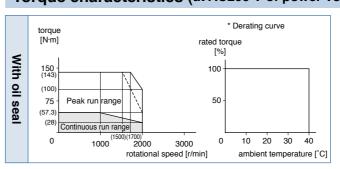
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

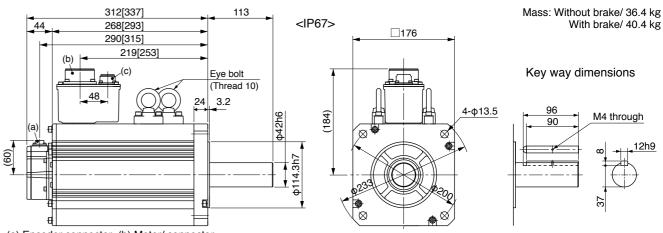
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588

- For details of Note 1 to Note 5, refer to P.182, 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]

Motor model *1 IP67 MHME102G1				AC200 V	
Applicable driver *2 Model No. A5II, A5 series MDD T350E Frame symbol D-frame Power supply capacity (kVA) 1.8 Rated output (W) 1000 Rated torque (N·m) 4.77 Momentary Max. peak torque (N·m) 14.3 Rated current (A(rms)) 5.7 Max. current (A(o-p)) 24 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note frequency (times/min) speed (r/min) 3000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Without brake 26.0 Recommended moment of inertia	Mater model		IP65	MHME102GC	MHME102SC
Applicable driver *2 Frame symbol Power supply capacity (kVA) Rated output (W) Rated torque (N·m) Momentary Max. peak torque (N·m) Rated current (A(rms)) Max. current (A(o-p)) Regenerative brake frequency (times/min) Note)1 Rated rotational speed (r/min) Max. rotational speed (r/min) Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Recommended moment of inertia **DVDP4284** **MDD T3530E **MDD T3530E **IMDD T			IP67	MHME102G1□	MHME102S1
driver *2 No. ASILE, ASE series MDDCT3530E	A	Model	A5II, A5 series	MDD<	T3530
Power supply capacity (kVA) 1.8 Rated output (W) 1000 Rated torque (N·m) 4.77 Momentary Max. peak torque (N·m) 14.3 Rated current (A(rms)) 5.7 Max. current (A(o-p)) 24 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note (requency (times/min) speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 26.0 Recommended moment of inertia	• • •	No.	A5IIE, A5E series	MDD ⊘T3530E	_
Rated output (W) 1000 Rated torque (N·m) 4.77 Momentary Max. peak torque (N·m) 14.3 Rated current (A(rms)) 5.7 Max. current (A(o-p)) 24 Regenerative brake frequency (times/min) Note)1 Without option 83 DV0P4284 No limit Note (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Without brake 24.7 Recommended moment of inertia 5 times or limitators or limita	unver	Fr	ame symbol	D-fr	ame
Rated torque (N·m) 4.77 Momentary Max. peak torque (N·m) 14.3 Rated current (A(rms)) 5.7 Max. current (A(o-p)) 24 Regenerative brake frequency (times/min) Note)1 Without option 83 No limit Note frequency (times/min) Note)1 DV0P4284 No limit Note frequency (r/min) Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Without brake 24.7 Recommended moment of inertia 5 times or limitations or limitati	Power supply	capacit	y (kVA)	1	.8
Momentary Max. peak torque (N·m) 14.3 Rated current (A(rms)) 5.7 Max. current (A(o-p)) 24 Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note Note Note Note Note Note Note Not	Rated output		(W)	10	00
Rated current (A(rms)) 5.7 Max. current (A(o-p)) 24 Regenerative brake frequency (times/min) Note) DV0P4284 No limit Note Note Note Note Note Note Note Not	Rated torque		(N·m)	4.	77
Max. current Regenerative brake frequency (times/min) Note)1 Rated rotational speed Max. rotational speed Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Recommended moment of inertia (A(o-p)) 24 No limit No (r/min) 2000 (r/min) 3000 Without brake 24.7	Momentary Max. peak torque (N·m)			14.3	
Regenerative brake frequency (times/min) Note)1 DV0P4284 No limit Note)1 DV0P4284 No limit Note)1 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 26.0 Recommended moment of inertia	Rated current (A(rms))			5.7	
frequency (times/min) Note) 1 DV0P4284 No limit Note Note Note Note Note Note Note Not	Max. current (A(o-p))			2	4
Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 24.7 of rotor (x10 ⁻⁴ kg·m²) With brake 26.0 Recommended moment of inertia 5 times or 1	Regenerative brake		Without option	83	
Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake 24.7 With brake 26.0 Recommended moment of inertia 5 times or leading to the state of	frequency (times	/min) Note)1	DV0P4284	No limit Note)2	
Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 26.0 Recommended moment of inertia 5 times or least of the least of	Rated rotation	Rated rotational speed (r/min)		2000	
of rotor (×10 ⁻⁴ kg·m²) With brake 26.0 Recommended moment of inertia	Max. rotation	al speed	(r/min)	3000	
Recommended moment of inertia 5 times or 1	Moment of in	ertia	Without brake	24.7	
5 times or l	of rotor (×10 ⁻⁴ kg·m ²)		With brake	26	5.0
ratio of the load and the rotor Note)3				5 times or less	
Rotary encoder specifications Note)5 20-bit Incremental	Rotary encoder specifications Note)5				17-bit Absolute
Resolution per single turn 1,048,576	F	Resolution per single turn			131,072

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.

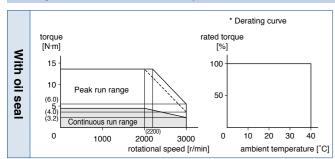
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

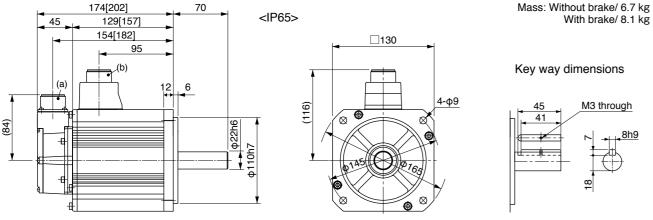
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

(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				MHME152GC	MHME152SC
Motor model	·	IP67		MHME152G1□	MHME152S1
Amuliaabla	Model	odel A5II, A5 series		MDD<	T5540
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T5540E	_
unven	Fr	ame sym	bol	D-fr	ame
Power suppl	y capacit	y	(kVA)	2	.3
Rated output	t		(W)	15	00
Rated torque	e		(N·m)	7.	16
Momentary I	Max. peal	k torque	(N·m)	21.5	
Rated currer	nt	(A(rms))	9.4	
Max. current (A(o-p))			4	0	
Regenerative	brake	Without	option	2	2
frequency (time	es/min) Note)1	DV0P4284		130	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of inertia W		Without	brake	37	'.1
of rotor (×10 ⁻⁴ kg·m ²)		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			20-bit Incremental	17-bit Absolute	
	Resolution per single turn				131,072

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.

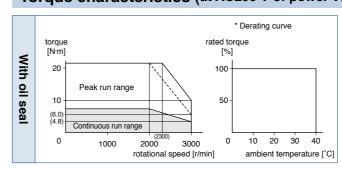
•	
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

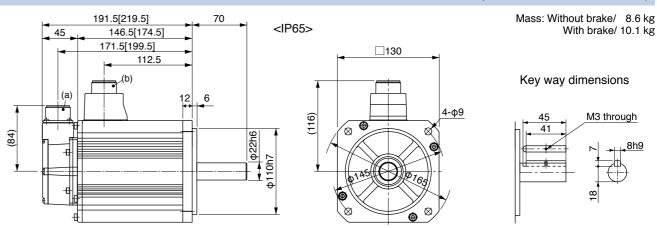
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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
Amaliaabla	Model	A5II, A5	series	MED<	T7364
Applicable *2	No.	A5IIE, A	5E series	MED ⊘T7364E	_
unver	Fr	ame sym	bol	E-fra	ame
Power supply	capacit	y	(kVA)	3.	.3
Rated output			(W)	20	00
Rated torque			(N·m)	9.	55
Momentary M	ax. peal	k torque	(N·m)	28.6	
Rated current		(A(rms))	11.1	
Max. current (A(o-p))			47		
Regenerative I	orake	Without option		45	
frequency (times/	min) Note)1	DV0P4285		142	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	al speed		(r/min)	3000	
Moment of ine	ertia	Without	t brake	57.8	
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	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		
F	Resolution per single turn			1,048,576	131,072

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.

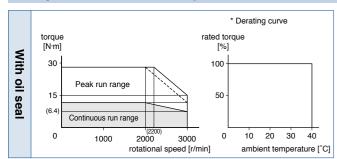
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

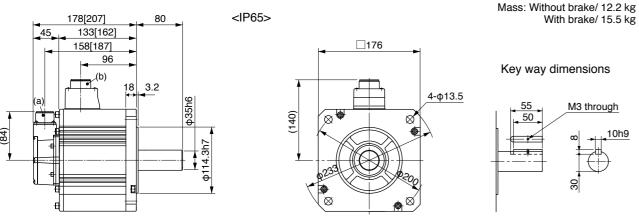
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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	
		IP65		MHME302GC□	MHME302SC
Motor mod	el *1	IP67		MHME302G1□	MHME302S1
	Model	A5II, A5	series	MFD ⊘TA390	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD ⊘TA390E	-
unven	F	rame sym	bol	F-fra	ame
Power supp	ply capaci	ty	(kVA)	4.	.5
Rated outp	ut		(W)	30	00
Rated torqu	ne		(N·m)	14	.3
Momentary	Max. pea	k torque	(N·m)	43.0	
Rated curre	ent	(A(rms))	16.0	
Max. current (A(o-p))		6	8		
Regenerativ	ve brake	Without	option	19	
frequency (tir		DV0P4	285×2	142	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	onal speed	t	(r/min)	3000	
Moment of	inertia	Without	brake	90.5	
of rotor (×10 ⁻⁴ kg·m ²)		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	
Resolution		n per sina	le turn	1,048,576	131,072

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.

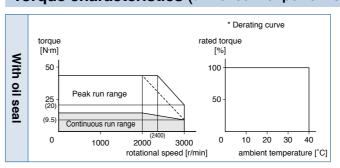
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

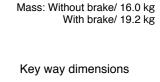
- For details of Note 1 to Note 5, refer to P.182, 183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver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

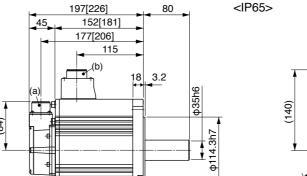
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)





55 M3 through

10h9

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

[Unit: mm]

			AC200 V	
Motor model	IP65		MHME402GC	MHME402SC
Motor model *1		IP67	MHME402G1□	MHME402S1
Amaliaabla	Model	A5II, A5 series	MFD◇	TB3A2
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_
unver	Fı	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6	.0
Rated output		(W)	40	00
Rated torque		(N·m)	19).1
Momentary Ma	ax. pea	k torque (N·m)	57.3	
Rated current		(A(rms))	21.0	
Max. current (A(o-p))			89	
Regenerative brake Without option		17		
		DV0P4285×2	12	25
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	112	
of rotor ($\times 10^{-4}$	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		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1,048,576	131,072

• 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.

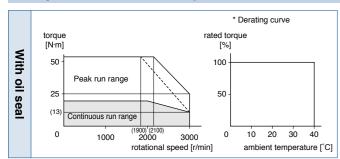
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

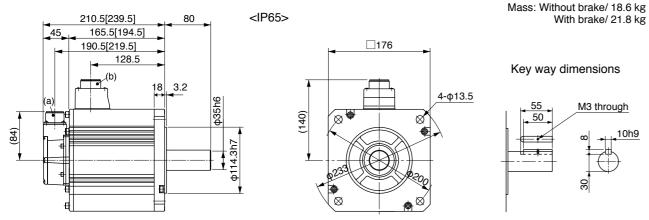
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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□ N		MHME502SC	
Motor mode	e 1	IP67		MHME502G1□	MHME502S1	
	Model	A5II, A5	series	MFD♦	MFD ⊘TB3A2	
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_	
unven	Fi	rame sym	bol	F-fra	ame	
Power supp	oly capacit	у	(kVA)	7.	.5	
Rated outpo	ut		(W)	50	00	
Rated torqu	ie		(N·m)	23	3.9	
Momentary	Max. pea	k torque	(N·m)	71.6		
Rated curre	ent	(A(rms))	25.9		
Max. current (A(o-p))		11	10			
Regenerativ	e brake	Without	option	10		
frequency (tin	nes/min) Note)1	DV0P4285×2		7	6	
Rated rotat	ional spee	d	(r/min)	2000		
Max. rotation	nal speed		(r/min)	3000		
Moment of	inertia	Without	brake	162		
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	164		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute			
		n per sina	le turn	1,048,576	131,072	

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.

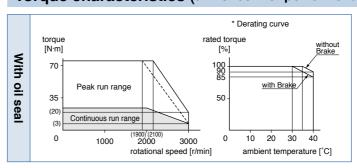
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

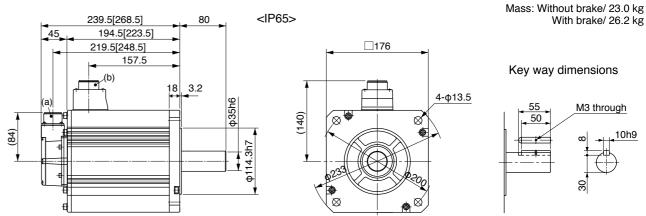
Radial load P-direction (N)	1666
Thrust load A-direction (N)	784
Thrust load B-direction (N)	980
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, 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.140.)



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

[Unit: mm]

			AC200 V		
IP65		_	_		
Motor model *1		IP67	MHME752G1□	MHME752S1	
A 11 11	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	000	
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 brake Without option		No lim	No limit Note)2		
frequency (times/min) Note)1 DV		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 encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	Resolution per single turn			131,072	

• 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.

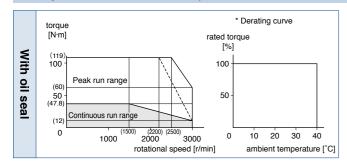
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

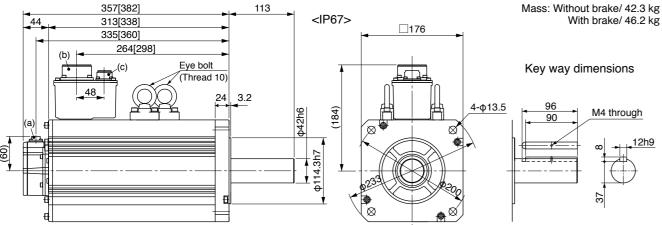
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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		MSME084GC□	MSME084SC
Motor mode *	.	IP67		MSME084G1□	MSME084S1
A II In I .	Model	A5 I I, A5	series	MDD<	T2412
Applicable driver **	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-
unver	Fr	ame sym	bol	D-fr	ame
Power suppl	ly capacit	y	(kVA)	1.	.6
Rated outpu	t		(W)	75	50
Rated torque	е		(N·m)	2.5	39
Momentary I	Max. peal	k torque	(N·m)	7.16	
Rated currer	nt	(A(rms))	2.4	
Max. current (A(o-p))			1	0	
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 in	nertia	Without brake		1.61	
of rotor (×10) ⁻⁴ kg·m ²)	With b	rake	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	1,048,576	131,072

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.

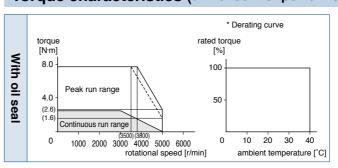
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
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, 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.>)



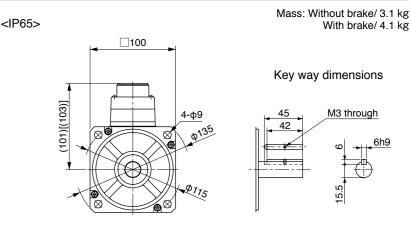
Dimensions

132.5[159.5]

87.5[114.5]

112.5[139.5] 56.5[53.5]

(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	
IP65		MSME104GC□	MSME104SC		
Motor model *1		IP67	MSME104G1□	MSME104S1	
Amaliaabla	Model		MDD<	T3420	
Applicable driver *2	No.	A5IIE, A5E series	MDD ⊘T3420E	_	
unver	Fr	ame symbol	D-fr	ame	
Power supply of	capacity	y (kVA)	1.	.8	
Rated output		(W)	10	00	
Rated torque		(N·m)	3.	3.18	
Momentary Ma	ıx. 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/m	nin) Note)1	DV0PM20048	No limit Note)2		
Rated rotationa	al spee	d (r/min)	3000		
Max. rotational	speed	(r/min)	5000		
Moment of iner	rtia	Without brake	2.03		
of rotor ($\times 10^{-4}$ l	kg·m²)	With brake	2.35		
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		
Re	esolutio	n per single turn	1,048,576	131,072	

• 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.

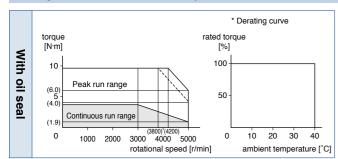
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

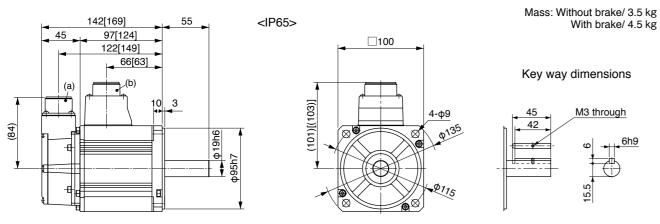
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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	
		IP65		MSME154GC	MSME154SC
Motor mode	ÐΙ ∗1	IP67		MSME154G1□	MSME154S1
	Model	A5II, A5	series	MDD ◇T3420	
Applicable driver	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	F	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)	4.	77
Momentary	Max. pea	k torque	(N·m)	14.3	
Rated curre	ent	(.	A(rms))	4.2	
Max. current (A(o-p))			1	8	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tir	nes/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed		(r/min)	5000	
Moment of	inertia	Without	brake	2.84	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	3.17	
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
	Resolutio	n per sing	le turn	1,048,576	131,072

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.

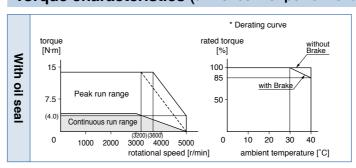
	•
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

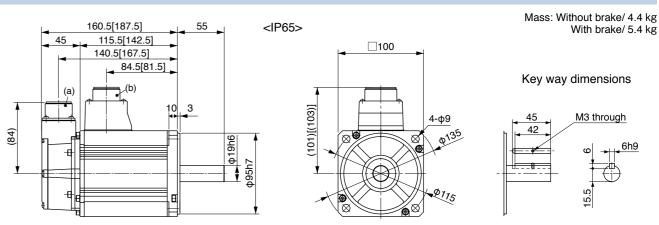
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.

[Unit: mm]

			AC4	00 V	
IP65		MSME204GC□	MSME204SC□		
Motor model *1		IP67		MSME204G1□	MSME204S1
Amaliaalala	Model	A5II, A5	series	MED<	T4430
Applicable *2	No.	A5IIE, A	5E series	MED ⊘T4430E	_
dilvei	Fr	ame sym	ıbol	E-fra	ame
Power supply	capacit	y	(kVA)	3	.3
Rated output			(W)	20	00
Rated torque			(N·m)	6.37	
Momentary Ma	ax. peal	k torque	(N·m)	19.1	
Rated current (A(rms))		5.7			
Max. current (A(o-p))		24			
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	nin) Note)1	DV0PM20049		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Withou	t brake	3.68	
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1,048,576	131,072

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.

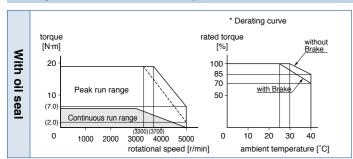
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

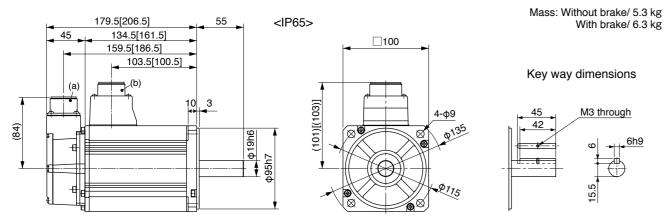
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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	
M - t - · · · · - · · · ·		IP65		MSME304GC□	MSME304SC
Motor mode	el ⊧1	IP67		MSME304G1□	MSME304S1
A II l. l .	Model	A5II, A5	series	MFD◇	T5440
Applicable driver	No.	A5IIE, A5E series		MFD \diamondsuit T5440E	-
unver	Fr	ame sym	bol	F-fra	ame
Power supp	oly capacit	y	(kVA)	4.	.5
Rated outpo	ut		(W)	30	00
Rated torqu	ie		(N·m)	9.	55
Momentary	Max. peal	k torque	(N·m)	28.6	
Rated curre	ent	(.	A(rms))	9.2	
Max. current (A(o-p))			3	9	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of	inertia	Without brake		6.50	
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	7.85	
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		
Resolution		n per sing	le turn	1,048,576	131,072

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.

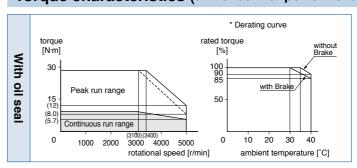
•	
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

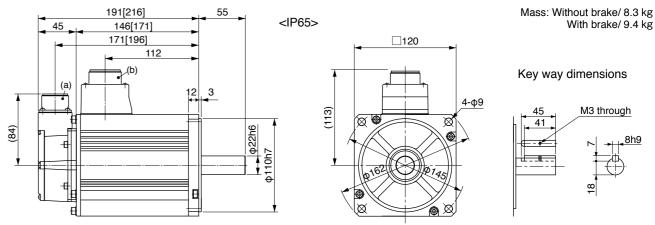
	Radial load P-direction (N)	980
During assem	Thrust load A-direction (N)	588
doooni	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operati	on Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.

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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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			AC400 V		
		IP65	MSME404GC	MSME404SC	
Motor model *1		IP67	MSME404G1□	MSME404S1	
A	Model	A5II, A5 series	MFD♦	TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_	
unver	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 Ma	ax. peal	k torque (N·m)	38.2		
Rated current		(A(rms))	9.9		
Max. current (A(o-p))			4	2	
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/r	nin) Note)1	DV0PM20049×2	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	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 encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131,072	

• 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.

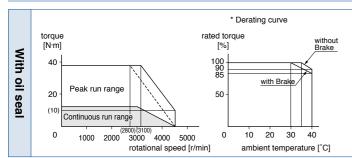
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

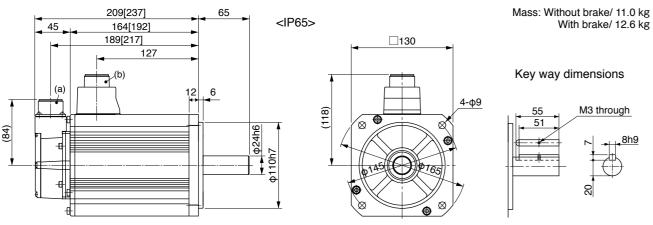
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.>)



(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
		IP65		MSME504GC	MSME504SC
Motor model	·	IP67		MSME504G1□	MSME504S1
	Model	A5II, A5	series	MFD◇	TA464
Applicable driver *2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-
unver	Fr	ame sym	bol	F-fra	ame
Power suppl	y capacit	y	(kVA)	7.	.5
Rated output	t		(W)	50	00
Rated torque)		(N·m)	15	5.9
Momentary I	Max. peal	k torque	(N·m)	47.7	
Rated currer	nt	(A(rms))	12.0	
Max. current (A(o-p))			5	51	
Regenerative	brake	Without	option	357	
frequency (time	es/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	4500	
Moment of ir	nertia	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		
Resolution per single turn			le turn	1.048.576	131.072

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.

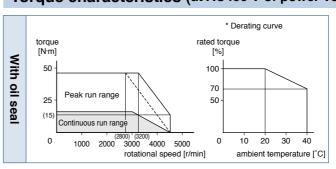
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

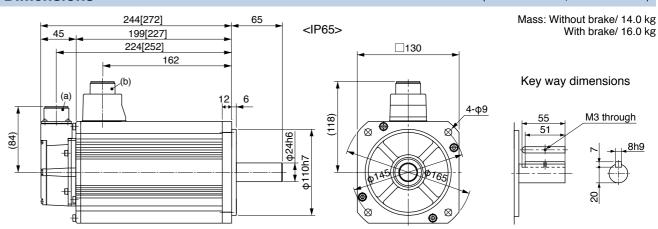
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, 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.138.)



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

[Unit: mm]

				AC4	00 V
Matanasadal	00		MDME044GC	MDME044SC	
Motor model *1		IP67		MDME044G1□	MDME044S1
A If a salad a	Model	A5II, A5 s	series	MDD ◇T2407	
Applicable driver *2	No.	A5IIE, A5E series		MDD ⊘T2407E	-
anver	Fr	ame symb	ool	D-fr	ame
Power supply	capacit	у	(kVA)	0	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1.9	91
Momentary M	ax. peal	k torque	(N·m)	5.73	
Rated current		(A	A(rms))	1.2	
Max. current (A(o-p))			4.9		
Regenerative b	orake	Without option		No limit Note)2	
frequency (times/	min) Note)1	DV0PM20048		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		1.61	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	1.9	
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	Resolution per single turn			1,048,576	131,072

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.

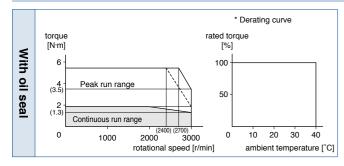
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

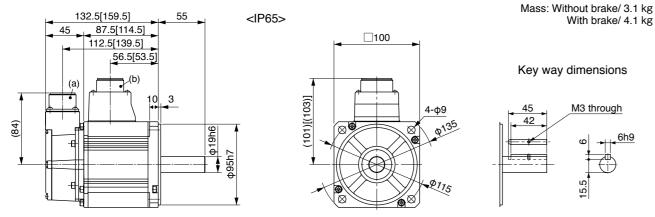
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver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

<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		MDME064GC	MDME064SC		
Motor mod	*1		IP67		MDME064G1□	MDME064S1	
Ammiinahin	ı	Model	A5 I I, A5	series	MDD<	T2407	
Applicable driver	*2	No.	A5IIE, A	5E series	MDD ⊘T2407E	_	
divei		Fr	ame sym	bol	D-fr	ame	
Power sup	ply ca	apacity	y	(kVA)	1.	.2	
Rated outp	ut			(W)	60	00	
Rated torqu	ue			(N·m)	2.	86	
Momentary	/ Max	. peal	k torque	(N·m)	8.59		
Rated curre	ent		(A(rms))	1.5		
Max. curre	nt			(A(o-p))	6.5		
Regenerativ	ve bra	ake	Without	option	No limit Note)2		
frequency (tir	mes/mir	n) Note)1	DV0PM	120048	No limit Note)2		
Rated rotat	tional	spee	d	(r/min)	2000		
Max. rotation	onal	speed		(r/min)	3000		
Moment of	inert	ia	Without	brake	2.03		
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)			With b	orake	2.35		
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			
Resolutio			n per sing	le turn	1,048,576	131,072	

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.

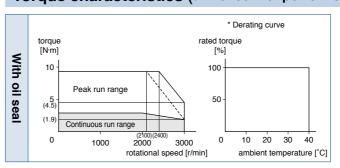
,	,
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

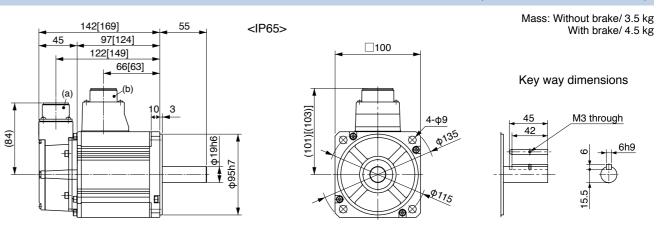
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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	MDME104GC	MDME104SC
Motor model *1		IP67	MDME104G1□	MDME104S1
	Model	A5II, A5 series	MDD<	T2412
Applicable driver *2	No.	A5IIE, A5E series	MDD \diamondsuit T2412E	_
unver	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	1.	.8
Rated output		(W)	10	00
Rated torque		(N·m)	4.	77
Momentary Ma	ax. 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/r	min) Note)1	DV0PM20048	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	4.60	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	5.90	
Recommender ratio of the loa			10 times or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072

• 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.

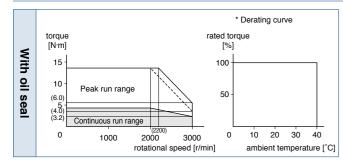
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

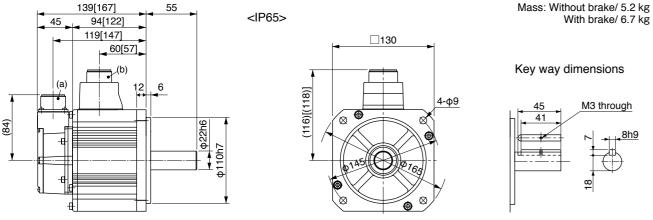
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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	
		IP65			MDME154GC	MDME154SC	
Motor mode	eI *1		IP67		MDME154G1	MDME154S1	
A	N	Model	A5 I I, A5	series	MDD<	T3420	
Applicable driver '	*2	No.	A5IIE, A	5E series	MDD ⊘T3420E	-	
anvoi		Fr	ame sym	bol	D-fr	ame	
Power supp	ply ca	apacity	y	(kVA)	2	.3	
Rated outp	ut			(W)	15	00	
Rated torqu	ue			(N·m)	7.	16	
Momentary	/ Мах	c. peal	k torque	(N·m)	21.5		
Rated curre	ent		(A(rms))	4.7		
Max. currer	nt		((A(o-p))	20		
Regenerativ	e bra	ake	Without option		No limi	t Note)2	
frequency (tin	mes/mir	n) Note)1	DV0PM	20048	No limit Note)2		
Rated rotat	ional	spee	d	(r/min)	2000		
Max. rotation	onal	speed		(r/min)	3000		
Moment of	inert	ia	Without	brake	6.	70	
of rotor (×1	0 ⁻⁴ k	g·m²)	With b	orake	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			
Resolution per s			n per sing	le turn	1,048,576	131,072	

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.

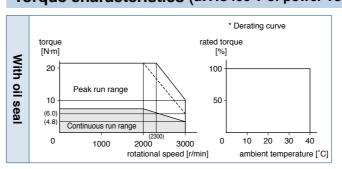
1	
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

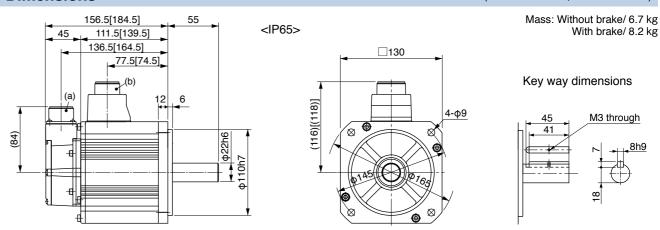
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.

[Unit: mm]

			AC400 V		
IP65			MDME204GC	MDME204SC	
Motor model *1		IP67		MDME204G1	MDME204S1
Amalianda	Model	A5II, A5 s	series	MED<	T4430
Applicable driver *2	No.	A5IIE, A5	E series	MED ⊘T4430E	_
unver	Fr	ame symb	ool	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	A(rms))	5.9	
Max. current		(,	A(o-p))	25	
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/r	nin) Note)1	DV0PM2	DV0PM20049 No limit Note)2		t 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 encode	r speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Re	esolutio	n per singl	e turn	1,048,576	131,072

• 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.

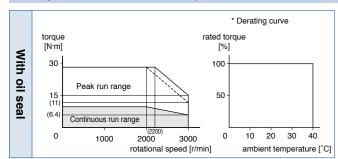
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

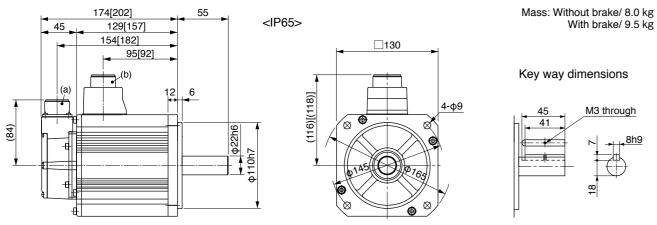
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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.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	
		IP65		MDME304GC□	MDME304SC
Motor mod	1 CI *1	IP67		MDME304G1□	MDME304S1
A 1: 1- 1 -	Mod	lel A5II, A5	series	MFD◇	T5440
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	-
unven		Frame sym	ıbol	F-fra	ame
Power sup	ply capa	city	(kVA)	4.	.5
Rated outp	out		(W)	30	00
Rated torq	ue		(N·m)	14	1.3
Momentary	у Мах. р	eak torque	(N·m)	43.0	
Rated curr	ent	((A(rms))	8.7	
Max. current (A(o-p))			37		
Regenerati	ve brake	Without	toption	No limit Note)2	
frequency (ti	imes/min) No	te)1 DV0PM2	20049×2	No limit Note)2	
Rated rota	tional sp	eed	(r/min)	2000	
Max. rotati	onal spe	ed	(r/min)	3000	
Moment of	inertia	Withou	t brake	12.9	
of rotor (×1	IO⁻⁴ kg·m	²) With I	orake	14	1.2
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note		Note)5	20-bit Incremental	17-bit Absolute	
Resolutio		tion per sing	gle turn	1,048,576	131,072

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.

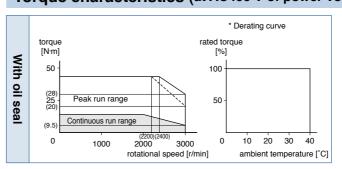
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

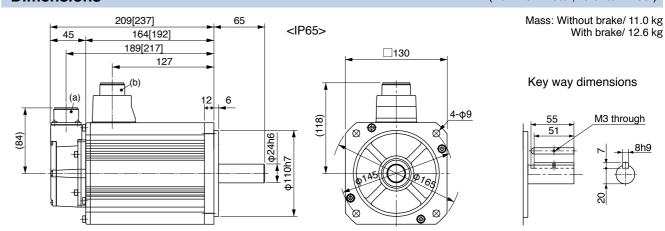
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
documbry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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]

				AC4	00 V
Motor model			MDME404GC	MDME404SC	
*1		IP67		MDME404G1	MDME404S1
Amaliaabla	Model	A5II, A5 se	eries	MFD⇔	TA464
Applicable driver *2	No.	A5IIE, A5I	E series	MFD \diamondsuit TA464E	-
unver	Fr	ame symb	ol	F-fra	ame
Power supply	capacit	y	(kVA)	6	.8
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))			10.6		
Max. current (A(o-p))			45		
Regenerative brake Without option		ption	No limi	t Note)2	
frequency (times/min) Note)1 DV0PM20049:		049×2	No limi	t Note)2	
Rated rotation	al spee	d ((r/min)	2000	
Max. rotationa	l speed	((r/min)	3000	
Moment of ine	rtia	Without b	orake	37.6	
of rotor ($\times 10^{-4}$	kg·m²)	With bra	ake	38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single	turn	1,048,576	131,072

• 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.

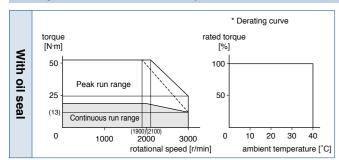
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

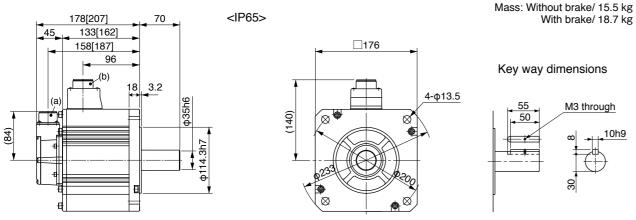
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

[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		
Matanasadal		IP65		MDME504GC	MDME504SC		
Motor mode	9I *1		IP67		MDME504G1□	MDME504S1	
A II l. l .	N	/lodel	A5 I I, A5	series	MFD◇	TA464	
Applicable driver	*2 N	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_	
unven		Fr	ame sym	bol	F-fra	ame	
Power supp	oly ca	apacit	y	(kVA)	7.	5	
Rated outpo	ut			(W)	50	00	
Rated torqu	ıe			(N·m)	23	.9	
Momentary	Max	. peal	k torque	(N·m)	71.6		
Rated curre	ent		(A(rms))	13.0		
Max. currer	nt		((A(o-p))	55		
Regenerativ	e bra	ıke	Without option		120		
frequency (tin	nes/min) Note)1	DV0PM20049×2		No limit Note)2		
Rated rotat	ional	spee	d	(r/min)	2000		
Max. rotation	onal s	speed		(r/min)	3000		
Moment of	inerti	a	Without	brake	48	8.0	
of rotor (×1	0 ⁻⁴ k{	g·m²)	With brake		48.8		
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	1,048,576	131,072		

400 V MDME 5.0 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.

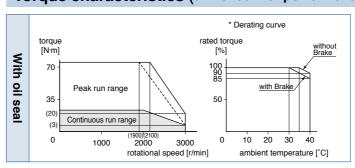
1	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

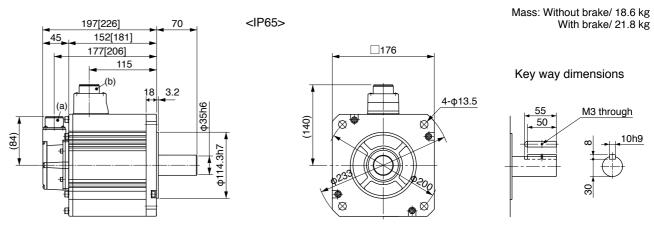
Radial load P-direction (N)	1666
Thrust load A-direction (N)	784
Thrust load B-direction (N)	980
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.182, 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]

			AC4	00 V	
		IP65	-	-	
Motor model *1		IP67	MDME754G1□	MDME754S1	
A !! I- I -	Model	A5II, A5 series	MGD◇	TB4A2	
Applicable 42	No.	A5IIE, A5E series	-	-	
divei	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))	22		
Max. current		(A(o-p))	83		
Regenerative brake Without option		No limit Note)2			
		DV0PM20049×3	No lim	t 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 (×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 encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1,048,576	131,072	

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.

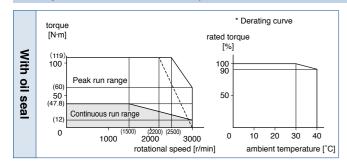
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

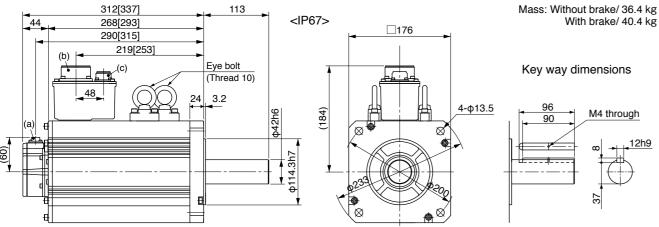
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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 ♦ 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	
		IP65		-	-
Motor model		IP67		MDMEC14G1	MDMEC14S1
Amaliaalala	Model	A5 I I, A5	series	МНО◇	TB4A2
Applicable driver *2	No.	A5IIE, A	5E series	_	-
diivei	Fr	ame sym	bol	H-fra	ame
Power suppl	y capacit	y	(kVA)	1	7
Rated output	t		(W)	110	000
Rated torque)		(N·m)	7	0
Momentary N	∕lax. peal	k torque	(N·m)	175	
Rated currer	nt	(A(rms))	27.1	
Max. current		((A(o-p))	101	
Regenerative	brake	Without	option	No limi	t Note)2
frequency (time	s/min) Note)1	DV0PM	120059	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	1500	
Max. rotation	al speed		(r/min)	2000	
Moment of in	ertia	Without	brake	212	
of rotor (×10 ⁻⁴ kg·m²) With brake			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			1,048,576	131,072

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.

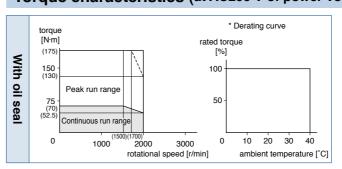
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

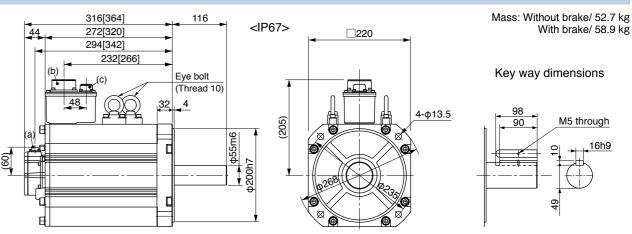
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
document	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, 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 \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/ connector
- (c) Brake connector (only with brake)
- * 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.

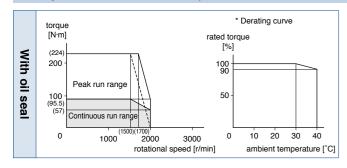
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

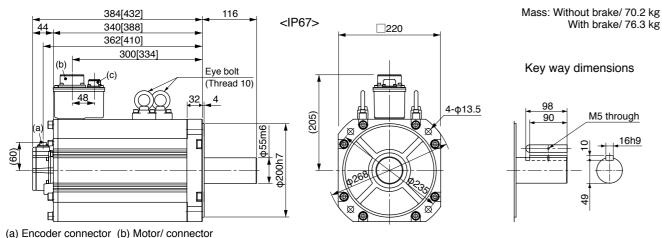
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
assembly	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, 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



(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.

400 V MFME 1.5 kW [Middle inertia, Middle capacity]

Motor Specifications

Specifications

				AC4	00 V	
		IP65		-	-	
Motor mod	*1		IP67		MFME154G1□	MFME154S1
	N	Model	A5II, A5	series	MDD<	T3420
Applicable driver	*2	No.	A5IIE, A	5E series	MDD ⊘T3420E	_
ulivei		Fr	ame sym	bol	D-fra	ame
Power sup	ply ca	apacity	/	(kVA)	2.	4
Rated outp	ut			(W)	15	00
Rated torqu	ue			(N·m)	7.	16
Momentary	/ Max	. peal	c torque	(N·m)	21.5	
Rated curre	ent		(.	A(rms))	3.8	
Max. curre	nt		((A(o-p))	1	6
Regenerativ	ve bra	ake	Without	option	100	
frequency (ti	mes/mir	n) Note)1	DV0PM20048		No limit Note)2	
Rated rotal	tional	spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	inert	ia	Without	brake	18.2	
of rotor (×10 ⁻⁴ kg·m ²)		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 pe			n per sina	le turn	1,048,576	131,072

• 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.

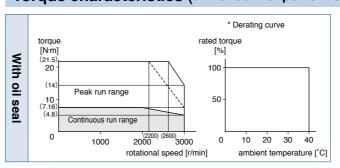
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

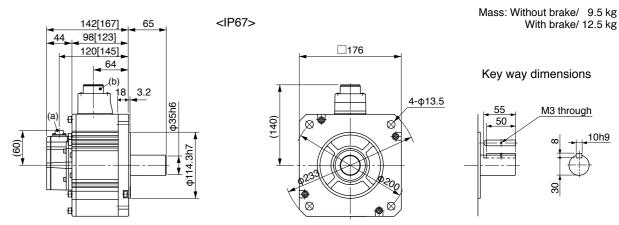
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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
		IP65		-	-
Motor model *1		IP67		MFME254G1	MFME254S1
A mustice a late	Model	A5II, A5	series	MED<	T4430
Applicable 42	No.	A5IIE, A	5E series	MED ⊘T4430E	-
unvei	Fr	ame sym	bol	E-fra	ame
Power supply	capacit	у	(kVA)	3	.9
Rated output			(W)	25	00
Rated torque			(N·m)	11.9	
Momentary Max. peak torque (N·m)			30.4		
Rated current		(A(rms))	6.7	
Max. current		((A(o-p))	29	
Regenerative b	rake	Without	option	7	5
frequency (times/r	min) Note)1	DV0PM	120049	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 ($\times 10^{-4}$	kg·m²)	With b	orake	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	
Resolution per single turn			le turn	1,048,576	131,072

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.

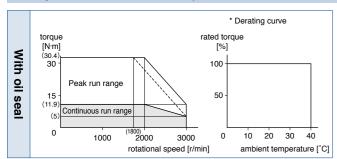
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

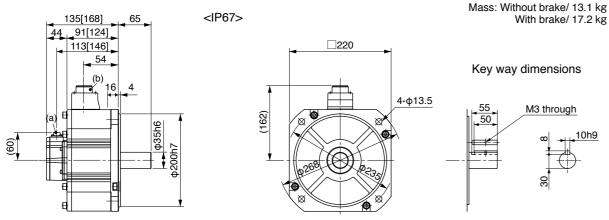
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, 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]

<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			-	-
Motor mod	1 C I *1		IP67		MFME454G1□	MFME454S1
		Model	A5II, A5 series		MFD◇	TA464
Applicable driver	*2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unver		Fr	ame sym	bol	F-fra	ame
Power sup	ply c	apacit	y	(kVA)	6	.9
Rated outp	out			(W)	45	00
Rated torq	ue			(N·m)	21	.5
Momentary	у Ма	x. peal	k torque	(N·m)	54.9	
Rated current (A(rms))			12.4			
Max. curre	nt		((A(o-p))	5	3
Regenerati	ve br	rake	Without	option	67	
frequency (ti	imes/m	in) Note)1	DV0PM2	0049×2	375	
Rated rota	tiona	al spee	d	(r/min)	2000	
Max. rotati	ional	speed		(r/min)	3000	
Moment of	f iner	tia	Without	brake	63.1	
of rotor (x1	10 ⁻⁴ l	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 end	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
	Re	solutio	Resolution per single turn			131,072

400 V MFME 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.

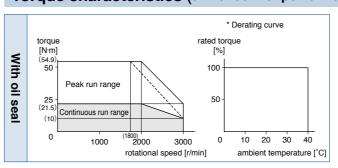
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

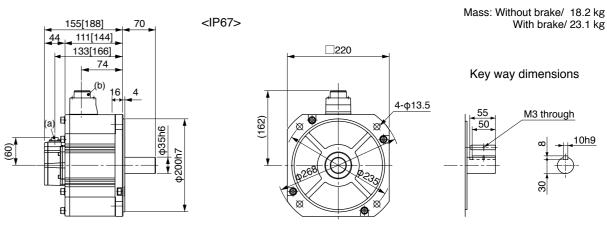
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
accombly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, 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]

A5 Family

 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.

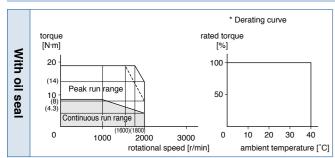
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

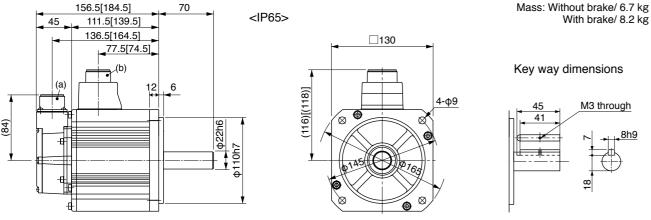
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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 mode	el *1	IP67		MGME204G1□	MGME204S1
	Model	A5 I I, A5	series	MFD⇔T5440	
Applicable driver	*2 No.	A5IIE, A5E series		MFD \diamondsuit T5440E	-
unven	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	3	.8
Rated outp	ut		(W)	20	00
Rated torqu	ıe		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	47.7	
Rated curre	ent	(.	A(rms))	8.5	
Max. currer	nt	((A(o-p))	3	0
Regenerativ	/e brake	Without	option	No limit Note)2	
frequency (tir	mes/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	1000	
Max. rotation	onal speed	I	(r/min)	2000	
Moment of	inertia	Without brake		30.3	
of rotor (×1	0 ⁻⁴ kg·m ²)	With brake		31.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary enc	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
	n per sing	le turn	1,048,576	131,072	

• 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.

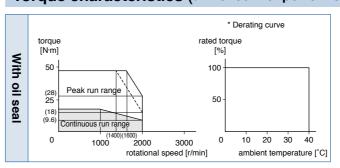
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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, 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.

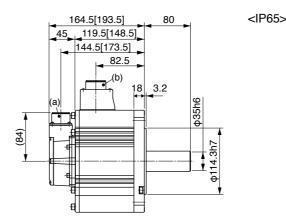
Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

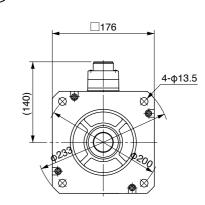


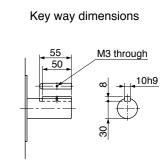
Dimensions

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

Mass: Without brake/ 14.0 kg With brake/ 17.5 kg







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

[Unit: mm]

			AC4	00 V
Motor model			MGME304GC□	MGME304SC□
*1		IP67	MGME304G1□	MGME304S1
Amaliaabla	Model	A5II, A5 series	MFD \bigcirc TA464	
Applicable *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
unver	Fı	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	28	3.7
Momentary Ma	ax. pea	k torque (N·m)	71.7	
Rated current		(A(rms))	11.3	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0PM20049×2	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 (×10 ⁻⁴	kg·m²)	With brake	49.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072

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.

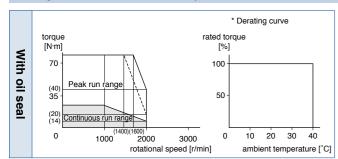
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

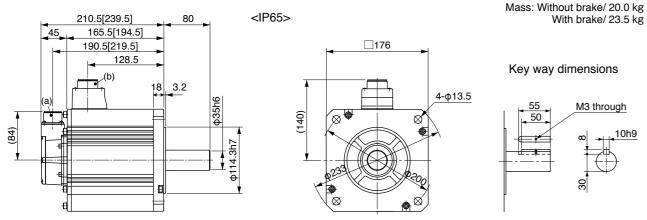
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

[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
Matanada		IP65		-	-
Motor mode	:1	IP67		MGME454G1□	MGME454S1
	Model	A5II, A5 series		MFD♦	TA464
Applicable driver *	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	-
unver	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	7.	.5
Rated outpu	ıt		(W)	45	00
Rated torqu	е		(N·m)	43	3.0
Momentary	Max. peal	k torque	(N·m)	107	
Rated curre	nt	(.	A(rms))	14.8	
Max. curren	t	((A(o-p))	55	
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (tim	es/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	nertia	Without brake		79.1	
of rotor (×10) ⁻⁴ kg·m²)	With brake		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 tur			le turn	1,048,576	131,072

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.

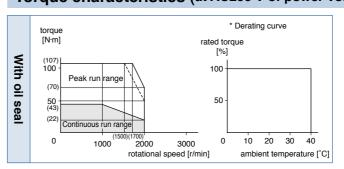
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

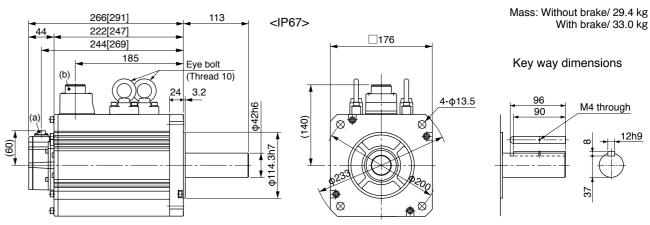
	During assembly During operation	Radial load P-direction (N)	2058
		Thrust load A-direction (N)	980
		Thrust load B-direction (N)	1176
		Radial load P-direction (N)	1470
		Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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			_	
Wiotor model		IP67	MGME604G1□	MGME604S1	
A south a shift	Model	A5II, A5 series	MGD♦	TB4A2	
Applicable driver *2	No.	A5IIE, A5E series	_	_	
divei	Fr	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 Max. peak torque (N·m)			143		
Rated current (A(rms))			19.4		
Max. current (A(o-p))			74		
Regenerative brake Without option			No lim	it Note)2	
frequency (times/	min) Note)1	DV0PM20049×3	No limit Note)2		
Rated rotational speed (r/min)		1000			
Max. rotationa	l speed	(r/min)	2000		
Moment of ine	rtia	Without brake	101		
of rotor (×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	1,048,576	131,072	

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.

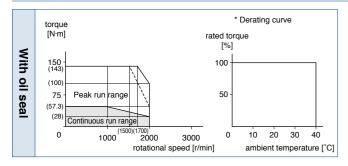
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

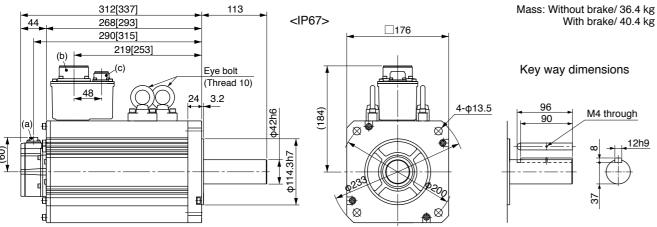
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1764
	Thrust load A, B-direction (N)	588

- For details of Note 1 to Note 5, refer to P.182, 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	
		IP65		MHME104GC	MHME104SC	
Motor mode	1	IP67		MHME104G1□	MHME104S1	
	Model	A5II, A5	series	MDD<	T2412	
Applicable driver *	No.	A5IIE, A5E series		MDD \diamondsuit T2412E	_	
unven	Fr	ame sym	bol	D-fra	ame	
Power supp	ly capacity	y	(kVA)	1.	8	
Rated outpu	ıt		(W)	10	00	
Rated torqu	е		(N·m)	4.	77	
Momentary	Max. peal	k torque	(N·m)	14	14.3	
Rated current (A(rms))		2.9				
Max. current (A(o-p))			12			
Regenerative	e brake	Without	option	83		
frequency (tim	es/min) Note)1	DV0PM20048		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	nertia	Without	brake	24.7		
of rotor (x10) ⁻⁴ kg·m²)	With b	rake	26	5.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1,048,576	131,072	

400 V MHME 1.0 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.

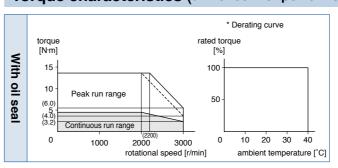
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

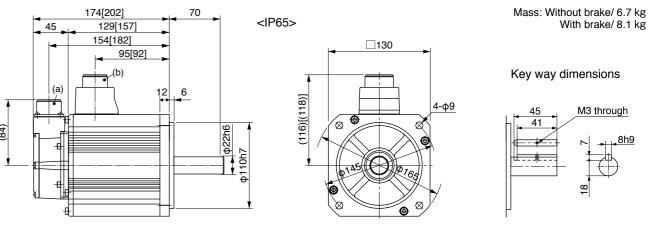
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.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.

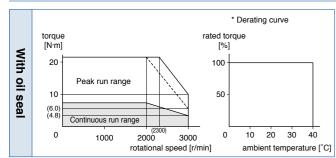
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

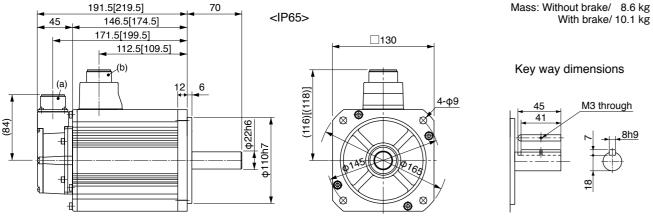
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

				AC4	00 V
		IP65		MHME204GC	MHME204SC
Motor model		IP67		MHME204G1□	MHME204S1
A 1: 1- 1 -	Model	A5 I I, A5	series	MED<	T4430
Applicable driver *2	No.	A5IIE, A	5E series	MED ⊘T4430E	-
unven	Fr	ame sym	bol	E-fra	ame
Power suppl	y capacit	y	(kVA)	3	.3
Rated output	t		(W)	20	00
Rated torque)		(N·m)	9.	55
Momentary N	Max. peal	k torque	(N·m)	28.6	
Rated current (A(rms))		5.5			
Max. current (A(o-p))			2	4	
Regenerative	brake	Without	option	45	
frequency (time	s/min) Note)1	DV0PM20048		142	
Rated rotation	nal 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 b	orake	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		
Resolution per single turn			1,048,576	131,072	

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.

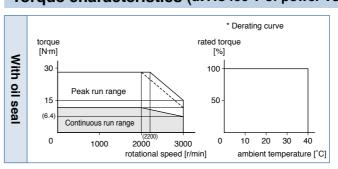
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

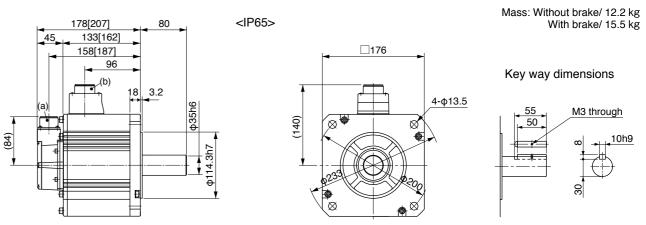
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

<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.

131

[Unit: mm]

132

			AC4	00 V	
Matarraadal		IP65		MHME304GC□	МНМЕ304SC□
Motor model *1		IP67		MHME304G1□	MHME304S1
Amaliaabla	Model	A5II, A5	series	MFD♦	T5440
Applicable 42	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_
unver	Fı	rame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	4.	.5
Rated output			(W)	30	00
Rated torque			(N·m)	14	.3
Momentary M	ax. pea	k torque	(N·m)	43.0	
Rated current		(A(rms))	8.0	
Max. current		((A(o-p))	34	
Regenerative b	rake	Without option		19	
frequency (times/	min) Note)1	DV0PM20049×2		142	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	90.5	
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	92.1	
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	1,048,576	131,072

• 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.

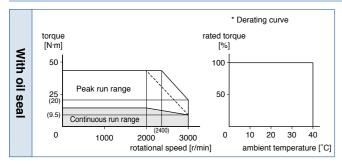
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

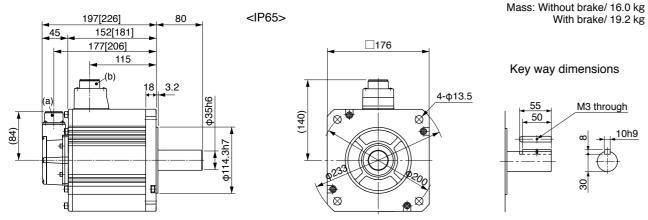
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\rightarrow \) in number of applicable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

400 V MHME 4.0 kW [High inertia, Middle capacity]

Specifications		
	AC400 V	

			AC400 V		
Mataumadal		IP65	MHME404GC	MHME404SC	
Motor model *1		IP67	MHME404G1□	MHME404S1	
	Model	A5II, A5 series	MFD♦	TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	-	
unver	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	6.	.8	
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))	10.5		
Max. current		(A(o-p))	4	5	
Regenerative b	rake	Without option	17		
frequency (times/r	min) Note)1	DV0PM20049×2	125		
Rated rotation	al spee	d (r/min)	20	00	
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	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 encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1,048,576	131,072	

• 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.

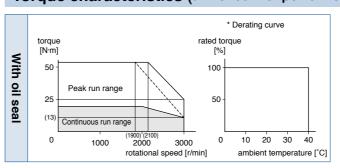
,	,
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

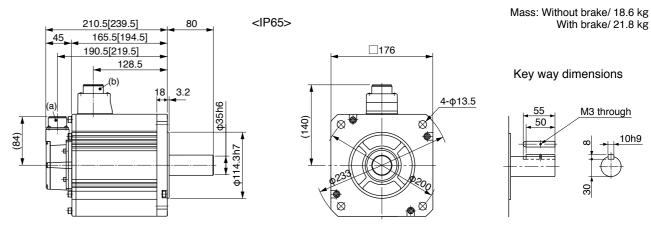
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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]

				AC4	00 V
Motor model				MHME504GC	MHME504SC
*1		IP67		MHME504G1□	MHME504S1
	Model	A5II, A5 s	series	MFD♦	TA464
Applicable driver *2	No.	A5IIE, A5	E series	MFD \diamondsuit TA464E	_
unven	Fı	ame symb	ool	F-fra	ame
Power supply	capacit	y	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	23	3.9
Momentary M	ax. pea	k torque	(N·m)	71.6	
Rated current		(A	A(rms))	13.0	
Max. current		(4	A(o-p))	55	
Regenerative I	orake	Without	option	10	
frequency (times/	min) Note)1	DV0PM20	0049×2	76	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	al speed		(r/min)	3000	
Moment of ine	ertia	Without	brake	162	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	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
F	esolutio	n per singl	e turn	1,048,576	131,072

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.

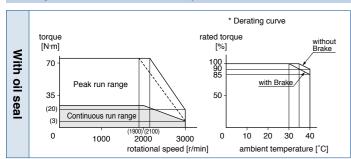
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

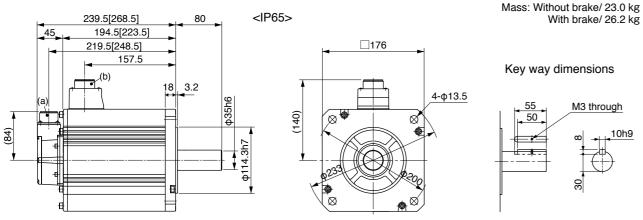
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.>)



(For IP67 motor, refer to P.140.)



(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	
		IP65		-	-
Motor model		IP67		MHME754G1□	MHME754S1
	Model	A5II, A5	series	MGD♦	TB4A2
Applicable driver *2	No.	A5IIE, A	5E series	-	_
unver	Fr	ame sym	bol	G-fr	ame
Power supply	y capacit	y	(kVA)	9	.0
Rated output	t		(W)	75	00
Rated torque)		(N·m)	47	7.8
Momentary N	Max. peal	k torque	(N·m)	119	
Rated currer	nt	(A(rms))	22.0	
Max. current		((A(o-p))	83	
Regenerative	brake	Without	option	No limi	t Note)2
frequency (time	s/min) Note)1	DV0PM20049×3		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	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	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn		le turn	1.048.576	131.072	

400 V MHME 7.5 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.

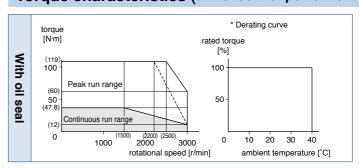
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

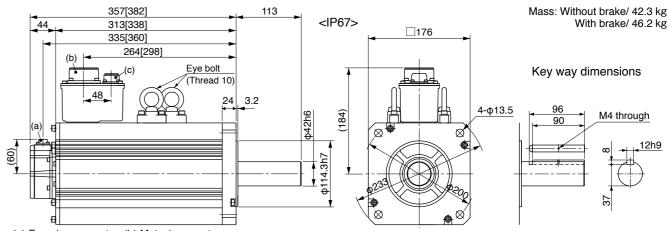
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 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 \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

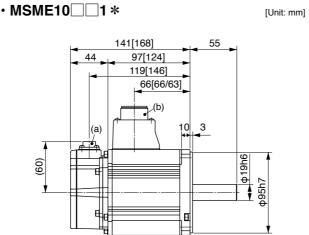


- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

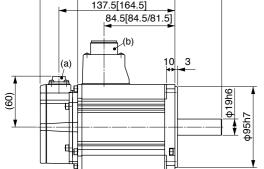
A5 Family

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

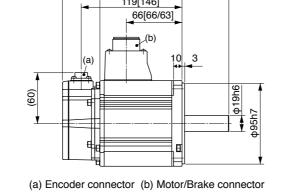


* Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

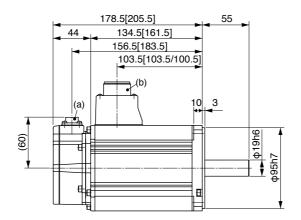
 MSME15□□1* [Unit: mm] 159.5[186.5] 115.5[142.5] 137.5[164.5] 84.5[84.5/81.5]



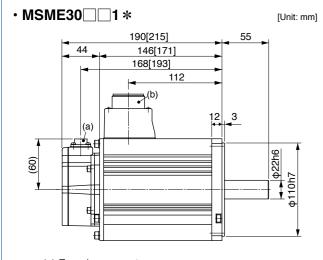
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



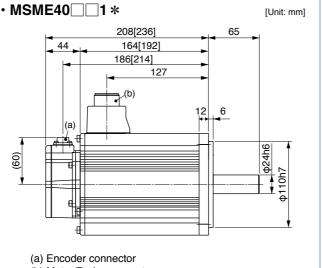
 MSME20□□1* [Unit: mm]



- (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.



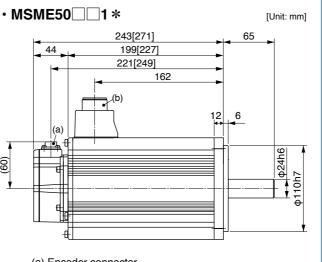
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



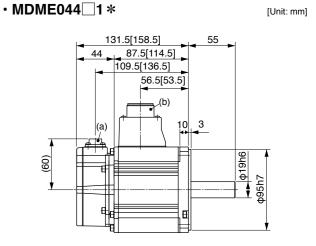
137

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

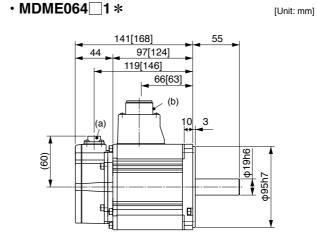
* For motor specifications, refer to IP65 motor page.



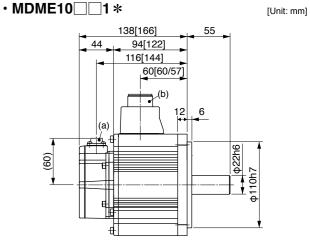
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



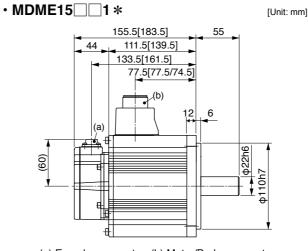
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



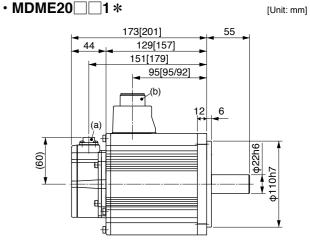
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (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. 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.

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^{*} For motor specifications, refer to IP65 motor page.

Dimensions

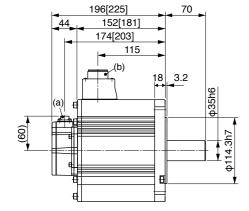
[Unit: mm]

• MDME30 □ 1 * [Unit: mm] 208[236] . 44 164[192] 186[214] 127 (a) Encoder connector

* Figures in [] represent the dimensions with brake.

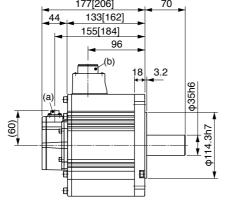
(b) Motor/Brake connector

 MDME50□□1 * [Unit: mm]



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

MDME40□□1* 177[206] 133[162] 155[184]



[Unit: mm]

[Unit: mm]

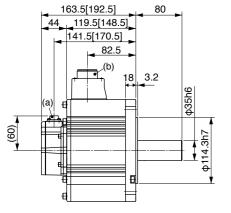
(a) Encoder connector

IP67 motor (MDME 200 V/ 400 V type) MGME 200 V/ 400 V type)

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

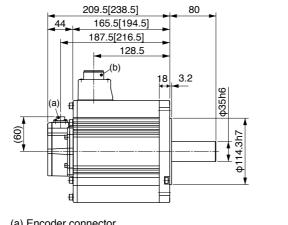
MGME09□□1 * [Unit: mm] 155.5[183.5] 111.5[139.5] 133.5[161.5] 77.5[77.5/74.5]

- (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.
- MGME20□□1 * [Unit: mm]



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

MGME30□□1 *

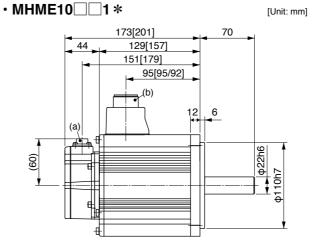


(a) Encoder connector

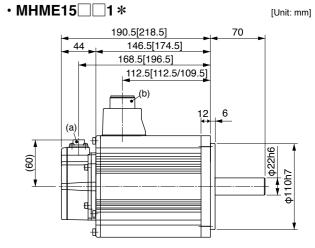
139

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

* For motor specifications, refer to IP65 motor page.

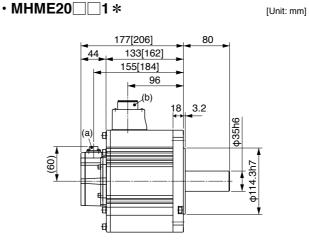


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

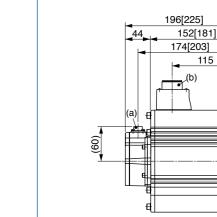


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

3.2



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



• MHME30□□1 *

(a) Encoder connector

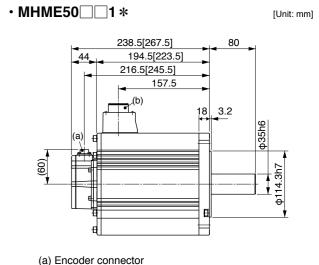
[Unit: mm]

140

(b) Motor/Brake connector

(b) Motor/Brake connector

- * Figures in [] represent the dimensions with brake.
- MHME40 □ □ 1 * 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.



* Figures in [] represent the dimensions with brake.

^{*} For motor specifications, refer to IP65 motor page

Motor Types with Gear Reducer

MSME

100 W to 750 W

Model Designation/ The Combination of the Driver and the Motor Motors with Gear Reducer

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

M S M

				Motor ra	ated output
Symbol	Туре			Symbol	Specification
MSMD	Low iner			01	100 W
100 W to 750	50 W		02	200 W	
MSME	Low iner			04	400 W
	High iner		08 75	750 W	
MHMI)	200 W to 7				

Rotary encoder specifications

Format

Incremental

Absolute

* S: can be used in incremental.

Symbol

ol Specifications 100 W 200 W 400 W 750 W

Voltage specifications

Symbol Rated output

2

Pulse counts

17-bit

100 V

200 V

Resolution

1,048,576

131,072

Wire

5

7

	Symbol	Reduction	Motor output (W)				Type of
Symbol	ratio	100	200	400	750	reducer	
	1N	1/5	•	•	•	•	
	2N	1/9	•	•	•	•	For high
	3N	1/15	•	•	•	•	precision
	4N	1/25	•	•	•	•	
	+ 141 114	400 14/:					

* MHMD 100 W is not prepared.

Motor types with gear reducer

Motor structure

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

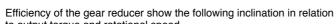
Model Designation

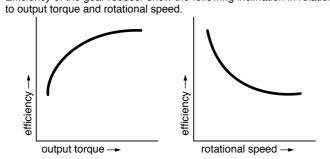
MSMD	мнмр
100 W to 750 W	200 W to 750 W

Type and Specifications

Reduction		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.





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 %		
0	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 to 40 °C (free from condensation)		
Environment	Ambient humidity	85 %RH (free from condensation) or less		
	Vibration resistance	49 m/s² or less (at motor frame)		
	Impact resistance	98 m/s² or less		

The Combination of the Driver and the Motor

	100 \	1	200 V	
Motor output	Part No. of motor	Single phase, 100 V	Part No. of motor	3-phase, 200 V
	with reducer	Part No. of driver	with reducer	Part No. of drive
		MADHT1107		MADHT1505
100 W	MSME011	MADKT1107	MSME012 N	MADKT1505
100 11	MSMD011□□□N	MADHT1107E	$MSMD012 \square \square \square N$	MADHT1505
		MADKT1107E		MADKT1505I
		MBDHT2110		MADHT1507
	MSME021 N MBDKT2110 MSME022 N		MADKT1507	
200 W	MSMD021 ON	MBDHT2110E	MSMD022 N	MADHT1507I
	MHMD021	MBDKT2110E		MADKT1507I
		MCDHT3120		MBDHT2510
	MSME041□□□N	MCDKT3120	MSME042 N	MBDKT2510
400 W	MSMD041□□□N		MSMD042	
	MHMD041□□□N	MCDHT3120E	MHMD042 N	MBDHT2510I
		MCDKT3120E		MBDKT2510I
750 W			MOMEOOO	MCDHT3520
			MSME082 N MSMD082 N MHMD082 N	MCDKT3520
750 W	_	_		MCDHT3520I
				MCDKT3520I

^{*} Motor specifications enter to $\square\square\square$ of the motor model number. Refer to "Model designation".

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Torque Characteristics of Motor

Table of Motor Specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque	(motor +			ess w/ brake		Permissible thrust load
		(w)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J(×10 ⁻⁴			g)	(N)	(N)
	MSME01	(44)	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 AN	-	1/25	80	120	240	6.27	19.0	0.0885	0.0915	2.15	2.35	1670	833
	MSME02 1N		1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
2	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	-	1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
MO-	MSME04 1N		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
rtia	MSME04 3N	400	1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
	MSME04	1	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		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 🗆 🗆 4N		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
	MSMD02 III 1N		1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
₹	MSMD02 an	2000	1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02 an	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 iner	MSMD04 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
ner	MSMD04 🗆 🗆 2N	400	1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
lia	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		1/15	635	200	300	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSMD082		1/25	635	120	180	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02	-	1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02	200	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02 3N	-	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
MHMD	MHMD02		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
Š	MHMD04		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
Hig	MHMD04 2N	400	1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
High inertia	MHMD04 3N		1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
erti	MHMD04		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
8	MHMD082	-	1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
	MHMD082	750	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
	MHMD082	-	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	1/5	1/9	1/15	1/25
	100 W	MSME011 1N torque [N·m] 4.0 Peak run range Continuous run range 0 500 1000 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 [r/min]	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 1 N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSME021 2N torque [N-m] 16.0 Peak run range. Contiruous run range 0 400 800 rotational speed [r/min]	MSME021 3N torque [N-m] 20 Peak run range Continuous 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 run range 0 500 1000 rotational speed [//min]	MSME041 2N torque [N-m] 40 Peak run range Continuous nun range 0 400 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 run range 2.0 Continuous run tange 0 500 1000 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 0 200 400 rotational speed [r/min]	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 run range 4.0 Continuous run tange 0 500 1000	MSME022 2N torque [N·m] 16.0 Peak run range Continuous run ranga 0 4000 rotational speed [r/min]	MSME022 3N torque [N·m] 20 Peak run range Continuous run range 0 200 400	MSME022 4N torque [N·m] 40 Peak run range Continuous tun range 0 100 200 rotational speed [r/min]
200 V	400 W	MSME042 1N torque [N-m] Peak run range Continuous tun tange 0 500 1000 rotational speed [r/min]	MSME042 2N torque [N·m] 40 Peak run range 0 400 800 rotational speed [r/min]	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 run range 40 Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MSME082 1N torque [N·m] 40 Peak run range Continuous run range Totational 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 tange Continuous run range 0 200 400 rotational speed [r/min]	MSME082 4N torque [N·m] 160 Peak run range 80 Continuous 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□□1N MSMD011□□2N MSMD011□□3N MSMD011 □ □ 4N 100 W MSMD021□□2N $MSMD021 \square \square 1N$ 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.	Dotted line re	epresents the	torque at 1	10 % less	supply voltage.
----------------------------------------------------------------	----------------	---------------	-------------	-----------	-----------------

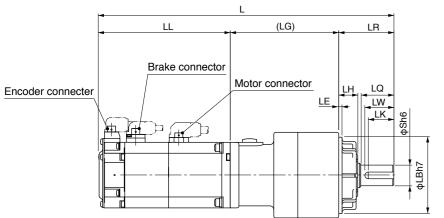
MHM	D series	s (200 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
100 V	200 W	MHMD021 1N torque [N·m] 8.0 Peak run tange 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N-m] 16.0 Peak run frange Continuous run frange 0 400 800 rotational speed [r/min]	MHMD021 3N torque [N-m] 20 Peak run range Contiruous run range 0 200 400 rotational speed [r/min]	MHMD021 4N torque [N-m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
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 Continuous run range 0 200 400 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 Contihuous run range 0 500 1000 rotational speed [r/min]	MHMD022 2N torque [N·m] 16.0 Peak run range Continuous run fange 0 400 800 rotational speed [r/min]	MHMD022 3N torque [N-m] 20 Peak run tange 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 PBak run range 1 Continuous run range 0 0 800 rotational speed [r/min]	MHMD042 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD042 4N torque [N·m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MHMD082 1N torque [N·m] 40 Peak run range Continuous run range	MHMD082 2N torque [N·m] 80 Pelak 1 run range 1	MHMD082 3N torque [N·m] 120 60 Peak run range Continuous run range	MHMD082 4N torque [N·m] 160 Peak run range Contiruous run range

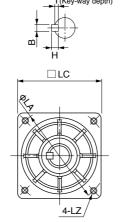
Dotted line represents the torque at 10 % less supply voltage.

Dimensions of Motor

[Unit: mm]

MSMD series





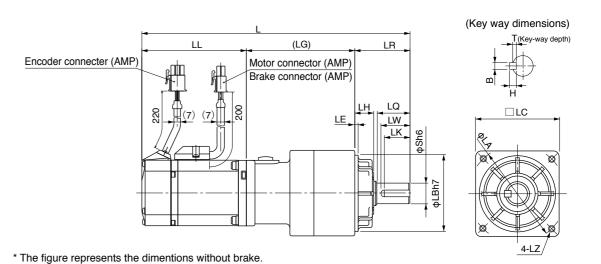
(Key way dimensions)

 $^{^{\}star}$ The figure represents the dimentions 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										
MCME04		4 //5	191.5	92																							
MSME01		1/5	221.5	122										67.5													
MSME01 2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.5		4×4×16	2.5										
WISINIEUTZIN	100	1/9	221.5	122	32	20	52	50	00	12	10	12	10			484810	2.5										
MSME01	100	1/15	202	92										78													
WISINIEUT		1/13	232	122										70													
MSME01		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5										
MOMEOT		1725	264	122	30	50	70	70	30	13	''	20	20	32		UNUNZZ	0.0										
MSME02		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5										
WSWE02		1/3	220.5	116	52	20	52	30	00	12	10	12	10	12.5		424210	2.5										
MSME02□□□2N		1/9	219	79.5										89.5	3												
WISWIEUZZIV	200	175	255.5	116										03.5													
MSME02□□□3N	200	1/15	229.5	79.5																							
MONEOZ		1710	266	116										100													
MSME02 4N		1/25	229.5	79.5										100													
		1720	266	116	50	30	78	70	90	19	17	M6 Depth	26			6×6×22	3.5										
MSME04		1/5	238.5	99								20				onon	0.0										
													275	135.5										89.5			
MSME04 2N		1/9	238.5	99																							
	400		275	135.5																							
MSME04□□□3N		1/15	249	99										100													
			285.5	135.5								140															
MSME04□□□4N		1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4										
			300.5	135.5								20															
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										
			291.7	148.2								20															
MSME082□□2N		1/9	270.7	112.2										97.5													
	750	-	306.7	148.2																							
MSME082□□3N		1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4										
			319.2	148.2	148.2			90	90	0 115	115 24		B Depth 20		110												
MSME082□□4N		1/25	283.2	112.2																							
			319.2	148.2																							

Upper column: without brake

Lower column: without brake Lower column: with brake



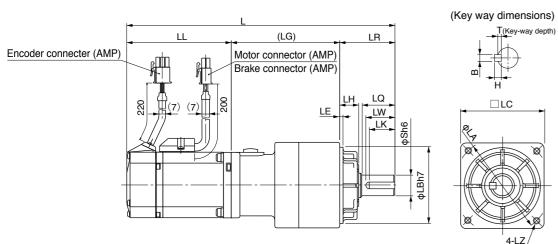
Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	Т							
MSMD01		1/5	191.5	92																				
		.,,	221.5	122										67.5										
MSMD01 = 2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18			4×4×16	2.5							
	100		221.5	122 92								12												
MSMD01□□□3N		1/15	232	122										78										
			234	92								M6												
MSMD01□□□4N		1/25	264	122	50	30	78	70	90	19	17	Depth 20	26	92		6×6×22	3.5							
			184	79.5								M5												
MSMD02□□□1N		1/5	220.5	116	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5							
MCMDOO		1/0	219	79.5										00.5	3									
MSMD02 2N	200	1/9	255.5	116										89.5	3									
MSMD02 3N	200	1/15	229.5	79.5																				
WSWD02		1/13	266	116										100										
MSMD02□□□4N	1	1/25	229.5	79.5										100										
			266	116	50	30	78	70	90	19 17	M6 Depth	26			6×6×22	3.5								
MSMD04□□□1N	-	1/5	238.5	99								20												
						-				275	135.5										89.5			
MSMD04□□□2N							1/9	238.5 275	99															
	400		249	99																				
MSMD04□□□3N		1/15	285.5	135.5										100										
			264	99								M8												
MSMD04 U 4N		1/25	300.5	135.5	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4							
		4.5	255.7	112.2			70	70		4.0	47	M6		00.5	_	0 0 00	0.5							
MSMD082□□1N		1/5	292.7	149.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5							
MSMD082□□2N		1/9	270.7	112.2										97.5										
WISWIDU62ZN	750	1/9	307.7	149.2										97.5										
MSMD082□□3N	700	1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4							
55002011		., 10	320.2	149.2	01	.0	98 90	90	90 115	0 115 24	5 24 18	20	55	110	5	8×7×30	4							
MSMD082□□4N		1/25	283.2	112.2																				
			320.2	149.2																				

Upper column: without brake

Lower column: with brake

[Unit: mm]

MHMD series



* The figure represents the dimentions 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							
MUMPOOF		4.5	203.5	99						40		M5	40	70.5			0.5							
MHMD02 1N		1/5	240	135.5	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5							
MUMDOOFFON		1/0	238.5	99										00.5										
MHMD02 2N	200	1/9	275	135.5										89.5										
MHMD02	200	1/15	249	99																				
WITHWIDUZSIN		1/13	285.5	135.5										100										
MHMD02□□□4N		1/25	249	99										100	3									
		1720	285.5	135.5	50	30	78	70	90	19	17	M6 Depth	26			6×6×22	3.5							
MHMD04□□□1N		1/5	258	118.5								20					0.0							
			294.5	155										89.5										
MHMD04□□□2N	400	1/9	258	118.5																				
		400	400	1		294.5	155																	
MHMD04□□□3N					100	400	400	400	400	400	400	400	1/15	268.5	118.5 155									
			305 283.5	118.5								M8												
MHMD04□□□4N		1/25			61	40	98	90	115	5 24	18	Depth	35	104	5	8×7×30	4							
			320	155								20												
MHMD082□□1N		1/5	270.7	127.2	50	30	78	70	90	19	17	M6 Depth	26	93.5	3	6×6×22	3.5							
			307.7	164.2								20												
MHMD082□□2N		1/9	285.7	127.2										97.5										
	750	-	322.7	164.2								Mo												
MHMD082□□3N		1/15	298.2	127.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4							
	-		335.2	164.2	61					115 24	24 18	20		110										
MHMD082□□4N					1/25	298.2	127.2																	
MHMD082□□4N	082□□4N			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 (1,048,576 pulse)
- 17-bit absolute encoder (131,072 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

Enclosure : IP65

Middle capacity



MGMF (Low speed/ High torque type)

Max. speed : 2000 r/min Rated speed: 1000 r/min

Rated output: IP65 0.9 kW to 3.0 kW Enclosure : IP65

High inertia

Max. speed : 3000 r/min Rated speed: 2000 r/min **Special Order Product Motor Contents**

MSMJ (200 V)

MSME (200 V)

MDME (200V)

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

Enclosure : IP65

Rated output: IP65 1.0 kW to 5.0 kW

200 W to 750 W.....

1.0 kW to 5.0 kW P.158

1.0 kW to 5.0 kW P.164

MGME (200 V)

0.9 kW to 5.0 kW P.170

MHMJ (200 V)

MHME (200V)

1.0 kW to 5.0 kW P.176

200 W to 750 W P.173

Servo Motor

Model Designation

Symbol Type MSMJ Low inertia (200 W to 750 W) Low inertia (1.0 kW to 5.0 kW) MSMF MDMF Middle inertia (1.0 kW to 5.0 kW) High inertia (0.9 kW to 5.0 kW) MGMF High inertia (200 W to 750 W) MHMJ MHME High inertia (1.0 kW to 5.0 kW)

Motor rated output

Symbol	Rated output
02	200 W
04	400 W
80	750 W
09	0.9 kW
10	1.0 kW
15	1.5 kW
20	2.0 kW
30	3.0 kW
40	4.0 kW
50	5.0 kW

Rotary encoder specifications

, , ,				
Symbol	Format	Pulse counts	Resolution	Wires
G	Incremental	20-bit	1,048,576	5
S	Absolute	17-bit	131,072	7

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

<Cautions>

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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 S M *

Voltage specifications

M A D K T 1 5 0 5

M A D K T 1 5 0 5 E **

2: 200 V

	Sh	aft	Holding	g brake	Oil	seal
Symbol	Round	Key-way, center tap	without	with	without	with
Α	•		•		•	
В	•			•	•	
С	•		•			•
D	•			•		•
S		•	•		•	
Т		•		•	•	
U		•	•			•
V		•		•		•

MSME, MDME, MGME, MHME

Symbol	Shaft		Holding	g brake	Oil seal			
Syllibol	Round	Key-way	without	with	without	with		
С	•		•			•		
D	•			•		•		
G		•	•			•		
Н		•		•		•		

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					

001.00		
Symbol	Velocity, Position, Torque, Full-Closed type	Position control type
K	A5 II series	A5 II E series

Supply voltage specifications

Specifications Symbol 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 detector current rating Symbol Specifications

Special specifications

Special specifications

Cyllibol	Opcomodiono
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

<Cautions> Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

A5 Family Table of Part Numbers and Options: Special Order Product 0.2 kW to 5.0 kW

			Motor				Driver		Power				Option	al parts				
		_		Dord No.	Rating/	A5II series Part No.	A5IIE series Part No.		capacity	Encode	er Cable		Motor	Cable	Brake Cable	External	Reactor	Noise Filte
Mo	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		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								DV0P227 DV0P220	DV0P4170
	(Leadwire) type	0	400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	MFECA 0**0EAM	MFECA 0**0EAE		MFMCA 0**0EED	-	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM200
	3000 r/min	Single phase/	750	MSMJ082 □ 1 *	157	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4						DV0P220	DV0PM200
-		3-phase 200 V	1000	MSME102 ☐ C * M	158	MDDKT5540	MDDKT5540E		Approx. 1.8								DV0P228	
ow in ordinate of the control of the			1500	MSME152 □ C * M	159	MDDKT5540	MDDKT5540E	D-frame	Арргох. 2.3				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P222 DV0PM20047 DV0P222	DV0P422
	MSME		2000	MSME202 □ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3						_	DV0P4285 Note) 5	DV0P223	DV0PM200
	3000 r/min	3-phase	3000	MSME302 □ C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5							11000,0	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	DV0P34
			5000	MSME502 □ C * M	163	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5	i						-	Note) 6	
		Single phase/	1000	MDME102 ☐ C * M	164	MDDKT3530	MDDKT3530E		Approx. 1.8								DV0P228 DV0P222	
<u> </u>		3-phase 200 V	1500	MDME152 □ C * M	165	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3	.3 MFECA 0**0ESD			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P422
Middle inertia	MDME 2000 r/min		2000	MDME202 □ C * M	166	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	3						DV0P4285 Note) 5	DV0P223	DV0PM20
<u>1</u>	2000 1/111111	3-phase	3000	MDME302 □ C * M	167	MFDKTA390	MFDKTA390E		Approx. 4.5								DV0P224	
		200 V	4000	MDME402 □ C * M	168	MFDKTB3A2	MFDKTB3A2E		F-frame Approx. 6	-				MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P225
		0	5000	MDME502 ☐ C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5								Note) 6	
	MGME Low speed/\ High torque	Single phase/ 3-phase 200 V	900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E	D-frame	Approx. 1.8				MFMCD 0**2ECD	MFMCA **2FCD		DV0P4284	DV0P228 DV0P221	DV0P422
\	type /	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	F-frame	Approx. 3.8				MFMCA	MFMCA		DV0P4285	DV0P223	DV0P34
	1000 r/min	200 V	3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	r-rame	Approx. 4.5			(0**3ECT	0**3FCT		×2 in parallel	DV0P224	DV0F34
	MHMJ /Leadwire\		200	MHMJ022 ☐ 1 *	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MFECA	MFECA		MFMCA		MFMCB	B. (2B. 222	DV0P227 DV0P220	DV0P41
<u> </u>	(type) 3000 r/min	Single	400	MHMJ042 □ 1 *	174		MBDKT2510E	B-frame	B-frame Approx. 0.9	0**0EAM	0**0EAE Note) 4		0**0EED	_	0**0GET	DV0P4283	DV0P228	
High inertia		phase/ 3-phase	750	MHMJ082 □ 1 *	175	MCDKT3520	MCDKT3520E	C-frame	C-frame Approx. 1.3		11010)						DV0P220	DV0PM20
<u>1</u>		200 V	1000		176		MDDKT3530E	D-frame	Approx. 1.8				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P42
			1500	MHME152 ☐ C * M	177	MDDKT5540	MDDKT5540E		Approx. 2.3								DV0P222	
	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	DV0PM20
		3-phase	3000	MHME302 □ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5				MEN	MENTO		DV65 :	DV0P224	
		200 V	4000	MHME402 ☐ C * M	180	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P34
			5000	MHME502 □ C * M	181	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5								Note) 6	

Note) 1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.152)

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Options

A to D-frame E-frame A to D-frame E-frame C-frame E-frame D-frame E-frame C-frame C-frame D-frame	Single row type Double row type ame RS232 Scale	DV0PM20044 DV0PM20044 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010	2 2 2 2 1 1 1	
A to D-frame E-frame A to D-fra E-frame E-frame E-frame E-frame A-frame A-frame B-frame C-frame	Single row type Double row type ame RS232 Scale	DV0P4121 DV0P4130 DV0P4131 DV0P4132 DV0PM20032 DV0PM20033 DV0PM20044 DV0PM20034 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0P4380 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20010 DV0PM20031 DV0PP2990 DV0P4430 DV0PM20027	2 2 2 1 1	
A to D-frame E-frame A to D-fra E-frame E-frame E-frame E-frame A-frame A-frame B-frame C-frame	Single row type Double row type ame RS232 Scale	DV0P4130 DV0P4131 DV0P4131 DV0P4132 DV0PM20032 DV0PM20034 DV0PM20034 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0P4380 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20010 DV0PM20031 DV0PP2990 DV0PM430 DV0PM430 DV0PM20027	2 2 2 2 1 1	
A to D-frame E-frame A to D-fra E-frame E-frame E-frame E-frame A-frame A-frame B-frame C-frame	Single row type Double row type ame RS232 Scale	DV0P4131 DV0P4132 DV0PM20032 DV0PM20033 DV0PM20044 DV0PM20034 DV0PM20045 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4380 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20025 DV0PM20010 DV0PM20010 DV0PM20010 DV0PM20031 DV0PP430 DV0PM430 DV0PM430 DV0PM430 DV0PM430	2 2 2 2 1 1 1 2 2 2	
D-frame E-frame A to D-fr: E-frame E-frame Donnectio RS485, I Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	Double row type ame RS232 Scale	DV0P4132 DV0PM20032 DV0PM20033 DV0PM20044 DV0PM20034 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4380 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0PP430 DV0PP430 DV0PP430 DV0PP430 DV0PM20027	2 2 2 1 1	
D-frame E-frame A to D-fr: E-frame E-frame Donnectio RS485, I Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	Double row type ame RS232 Scale	DV0PM20032 DV0PM20033 DV0PM20044 DV0PM20034 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4380 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20025 DV0PM20010 DV0PM20010 DV0PM20031 DV0P2990 DV0PM430 DV0PM430 DV0PM430 DV0PM20027	2 2 2 1 1	
D-frame E-frame A to D-fr: E-frame E-frame Donnectio RS485, I Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	Double row type ame RS232 Scale	DV0PM20033 DV0PM20044 DV0PM20044 DV0PM20034 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0PM430 DV0PM20027	2 2 2 2 1 1	
E-frame A to D-fra E-frame E-frame Donnectio RS485, I Safety Interface External Encoder Analog M ute Enco A-frame 3-frame C-frame	m RS232 Scale	DV0PM20033 DV0PM20044 DV0PM20034 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0PM430 DV0PM430 DV0PM430 DV0PM20027	2 2 2 1 1	
A to D-frame E-frame E-frame Donnectio RS485, I Safety Interface External Encoder Analog M ute Enco A-frame B-frame C-frame	n RS232 Scale	DV0PM20034 DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0PP4380 DV0PP4380	2 2 1	
E-frame E-frame E-frame Encoder A-frame B-frame C-frame	n RS232 Scale	DV0PM20046 DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0PM430 DV0PM430 DV0PM20027	2 2 1	
E-frame PRS485, I Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	RS232 Scale	DV0PM20045 DV0P4290 DV0P4310 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0PM430 DV0PM20027	2 2 1	
PS485, I Safety Interface External Encoder Analog Nute Encoder A-frame B-frame C-frame	RS232 Scale	DV0P4290 DV0P4310 DV0P4320 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	2 2 1	
RS485, I Safety Interface External Encoder Analog M ute Enco A-frame B-frame C-frame	RS232 Scale	DV0P4310 DV0P4320 DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	2 2 1	
RS485, I Safety Interface External Encoder Analog M ute Enco A-frame B-frame C-frame	RS232 Scale	DV0P4320 DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0P4350 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
RS485, I Safety Interface External Encoder Analog M ute Enco A-frame B-frame C-frame	RS232 Scale	DV0P4330 DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0PM20026 DV0PM20010 I DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
RS485, I Safety Interface External Encoder Analog M ute Enco A-frame B-frame C-frame	RS232 Scale	DV0P4340 DV0P4380 DV0PM20024 DV0PM20025 DV0P4350 DV0PM20026 DV0PM20010 I DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	Scale Monitor Signa	DV0P4380 DV0PM20024 DV0PM20025 DV0P4350 DV0PM20026 DV0PM20010 I DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	Scale Monitor Signa	DV0P4380 DV0PM20024 DV0PM20025 DV0P4350 DV0PM20026 DV0PM20010 I DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	Scale Monitor Signa	DV0PM20024 DV0PM20025 DV0P4350 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
Safety Interface External Encoder Analog N ute Enco A-frame B-frame C-frame	Scale Monitor Signa	DV0PM20025 DV0P4350 DV0PM20026 DV0PM20010 I DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
nterface External Encoder Analog M ute Enco A-frame B-frame C-frame	Scale Monitor Signa	DV0P4350 DV0PM20026 DV0PM20010 DV0PM20031 DV0P2990 DV0P4430 DV0PM20027	1	
External Encoder Analog M ute Enco A-frame B-frame C-frame	Scale Monitor Signa	DV0PM20026 DV0PM20010 I DV0PM20031 DV0P2990 DV0P4430 DV0PM20027		
Encoder Analog M ute Enco A-frame B-frame C-frame	Monitor Signa	DV0PM20010 I DV0PM20031 DV0P2990 DV0P4430 DV0PM20027		
Analog Mute Enco A-frame B-frame C-frame	Monitor Signa	DV0PM20031 DV0P2990 DV0P4430 DV0PM20027		
ute Enco A-frame B-frame C-frame		DV0P2990 DV0P4430 DV0PM20027	2	
A-frame B-frame C-frame	oder	DV0P4430 DV0PM20027	2	
3-frame C-frame		DV0PM20027	_	
3-frame C-frame				
C-frame		DV0PM20028		
			208	
)-frame		DV0PM20029		
ae		DV0PM20030		
		MFECA0**0EAD	Г	
without E	Battery Box	MFECA0**0EAM	1	
	, ,	MFECA0**0ESD	1	
		MFECA0**0EAE	1	
with Batt	tery Box	MFECA0**0ESE	1	
		MFMCA0**0EED	H	
		MFMCD0**2ECD	192	
without E	Brake			
			1	
with Bral	ke			
			1	
		MFMCB0**0GET	1	
A-frame				
3-frame		DV0P4283		
C-frame			2	
D-frame		DV0P4284	2	
E-frame		DV0D4005		
F-frame		DVUP4285		
DV0P22	3, DV0P224	, DV0P225,	2	
DV0P41	70, DV0PM	20042	2	
			2	
			f	
	hase	DV0P4190		
3-phase		DV0P4190 DV0P1450	2	
	A-frame 3-frame C-frame C-frame F-frame OVOP22 OVOP22 OVOP41	B-frame C-frame C-frame C-frame E-frame C-frame MFMCA0**3FCT MFMCB0**0GET A-frame 3-frame DV0P4283 C-frame D-frame DV0P4284 E-frame DV0P4285 DV0P220, DV0P221, DV0P222, DV0P223, DV0P224, DV0P225, DV0P227, DV0P227, DV0P227, DV0P42047 DV0P4170, DV0PM20042 DV0P420, DV0PM20043 DV0P3410		

<Cautions> Please avoid the motor, or equipment containing the motor to

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.

Specifications

			AC200 V			
Motor model		IP65	MSMJ022G1□	MSMJ022S1□		
Wiotor model		IP67	-	_		
Ammliaabla	Model	A5II series	MADKT1507			
Applicable driver *2	No.	A5IIE series	MADKT1507E	_		
divei	Fr	ame symbol	A-frame			
Power supply	capacit	y (kVA)	0.5			
Rated output		(W)	200			
Rated torque		(N·m)	0.64			
Momentary Ma	ax. peal	k torque (N·m)	1.91			
Rated current		(A(rms))	1.6			
Max. current		(A(o-p))	6.9			
Regenerative b	rake	Without option	No limit Note)2			
frequency (times/r	min) Note)1	DV0P4283	No limi	t Note)2		
Rated rotation	al spee	d (r/min)	3000			
Max. rotationa	l speed	(r/min)	5000			
Moment of ine	rtia	Without brake	0.14			
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.16			
Recommende ratio of the loa			30 times or less			
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1,048,576	131,072		

• 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)

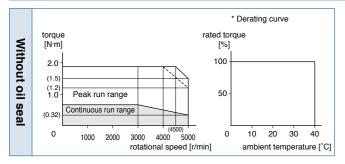
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
accombi	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

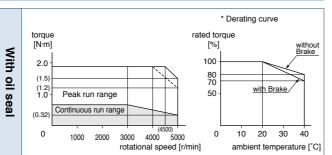
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MSMJ 200 W [Low inertia, Small capacity]

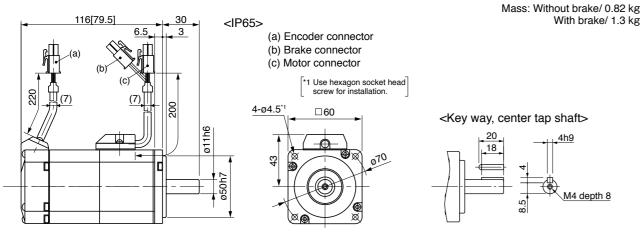
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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

			AC2	00 V		
Mataumaal	-1	IP65		MSMJ042G1□	MSMJ042S1	
Motor mode	€I *1	IP67		-	-	
A I' l. l .	Model	A5II serie	s	MBDKT2510		
Applicable driver	No.	A5IIE ser	ries	MBDKT2510E	-	
unven	F	rame sym	bol	B-frame		
Power supp	oly capaci	ty	(kVA)	0.	.9	
Rated outp	ut		(W)	40	00	
Rated torqu	ıe		(N·m)	1.3		
Momentary Max. peak torque (N·m)				3.8		
Rated current (A(rms))				2.6		
Max. currer	nt		(A(o-p))	11.0		
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tin	nes/min) Note)	DV0P4283		No limit Note)2		
Rated rotational speed (r/min)				3000		
Max. rotational speed (r/min)				5000		
Moment of	inertia	Without brake		0.26		
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With brake		0.28		
Recommen ratio of the			30 times or less			
Rotary enco	oder spec	ifications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolution	n per sing	le turn	1,048,576	131,072	

• 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.

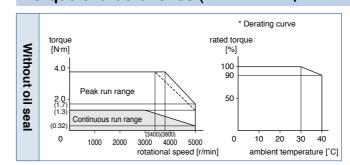
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

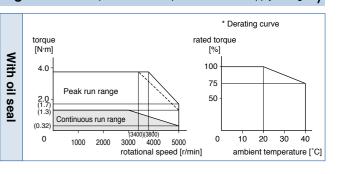
• Permissible load (For details, refer to P.183)

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

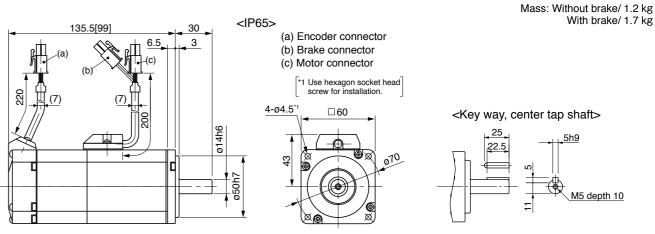
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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 MSMJ 750 W [Low inertia, Small capacity] Please contact us for more information.

Specifications

			AC2	00 V	
Motor model	IP65			MSMJ082G1□	MSMJ082S1□
*1		IP67		-	_
Amaliaahla	Model	A5II series		MCDK	T3520
Applicable driver *2	No.	A5IIE series		MCDKT3520E	_
divei	Fr	ame symb	ool	C-frame	
Power supply	capacity	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	A(rms))	4.0	
Max. current		(,	A(o-p))	17.0	
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. rotational	speed		(r/min)	4500	
Moment of ine	rtia	Without	brake	0.87	
of rotor (×10 ⁻⁴ kg·m²) With brak		rake	0.97		
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	
Resolution per single turn			e turn	1,048,576	131,072

• 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.

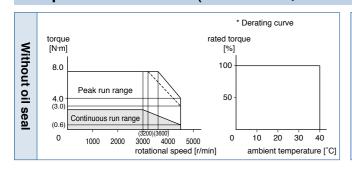
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

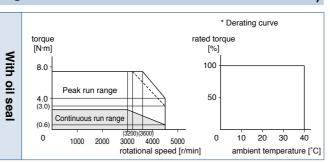
Permissible load (For details, refer to P.183)

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

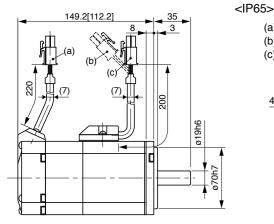
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





Dimensions



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

4-ø6*

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**

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

Please contact us for more information

Specifications

			AC2	00 V		
Maka alal		IP65		MSME102GC□M	MSME102SC□N	
Motor mode	€I ∗1		IP67		-	-
Amaliaahla		Model	A5II serie	s	MDDK	T5540
Applicable driver	*2	No.	A5IIE ser	ies	MDDKT5540E	-
anvoi		Fr	ame sym	bol	D-fr	ame
Power supp	oly c	apacit	y	(kVA)	1.	.8
Rated outp	ut			(W)	10	00
Rated torqu	ıe			(N·m)	3.	18
Momentary	Ма	x. peal	k torque	(N·m)	9.55	
Rated curre	ent		(A(rms))	6.6	
Max. currer	nt		((A(o-p))	28	
Regenerativ	/e br	ake	Without	option	No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0P	4284	No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	50	00
Moment of	iner	tia	Without	brake	2.03	
of rotor (×10 ⁻⁴ kg·m ²)		⟨g·m²)	With b	rake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less			
Rotary encoder specificatio		fications	Note)5	20-bit Incremental	17-bit Absolute	
		n per sina	le turn	1,048,576	131,072	

• 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.

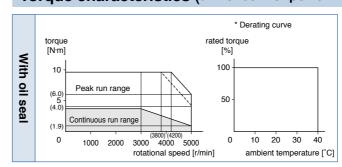
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

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

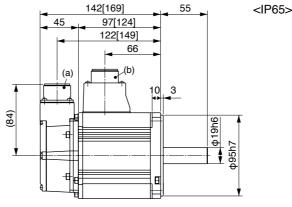
	Radial load P-direction (N)	980
During assem	Thrust load A-direction (N)	588
doooni	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operati	on Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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

Key way dimensions

Mass: Without brake/ 3.5 kg

With brake/ 4.5 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.

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V
		IP65	MSME152GC□M	MSME152SC□M
Motor model *1		IP67	-	-
A madia a la la	Model	A5I series	MDDK	T5540
Applicable *2	No.	A5IIE series	MDDKT5540E	_
anver	Fr	ame symbol	D-fr	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/n	nin) 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 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		20-bit Incremental	17-bit Absolute	
Re	esolutio	n per single turn	1,048,576	131,072

• 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)

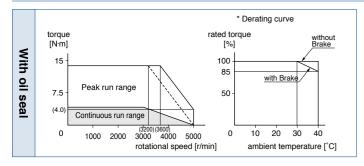
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model

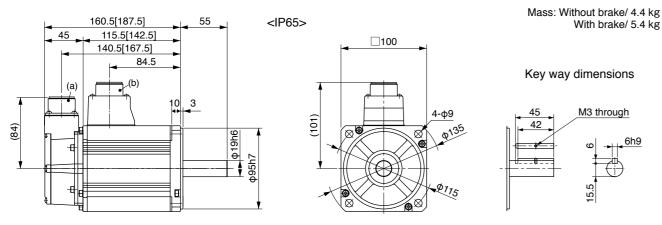
		Thrust load b-direction (N)	000
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- 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
Mata:		IP65		MSME202GC□M	MSME202SC_N
Motor mode	?I ⊧1	IP67		-	-
A	Model	A5II series		MEDKT7364	
Applicable driver *	No.	A5IIE series		MEDKT7364E	-
unvoi	F	rame sym	bol	E-fra	ame
Power supp	ly capacit	у	(kVA)	3.	.3
Rated outpu	ut		(W)	20	00
Rated torqu	ie		(N·m)	6.	37
Momentary	Max. pea	k torque	(N·m)	19.1	
Rated current (A(rms))		11.3			
Max. current (A(o-p))		4	8		
Regenerative brake Withou		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)	3000	
Max. rotatio	nal speed	l	(r/min)	5000	
Moment of i	inertia	Without brake		3.68	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	4.	01
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn		le turn	1.048.576	131,072	

• 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.

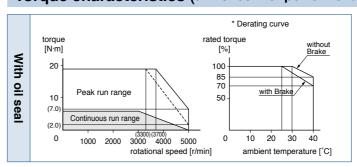
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

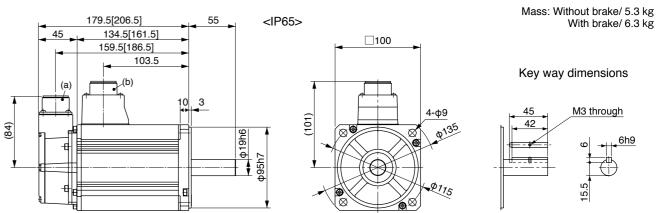
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196
	assembly During	During assembly Thrust load A-direction (N) Thrust load B-direction (N) During Radial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

- For details of Note 1 to Note 5, refer to P.182, 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.

Please contact us for more information

Specifications

				00 V	
		MSME302GC□M	MSME302SC□M		
Motor model *1		IP67	_	-	
Amuliaahla	Model	A5I series	MFDKTA390		
Applicable driver *2	No.	A5IE series	MFDKTA390E	_	
unver	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	4	.5	
Rated output		(W)	30	00	
Rated torque		(N·m)	9.	9.55	
Momentary M	ax. peal	k torque (N·m)	28.6		
Rated current		(A(rms))	18.1		
Max. current (A(o-p))		77			
Regenerative b	orake	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	ıl speed	(r/min)	5000		
Moment of ine	ertia	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	1,048,576	131,072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized.

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

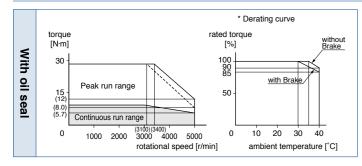
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type".

Do not use this for braking the motor in motion.

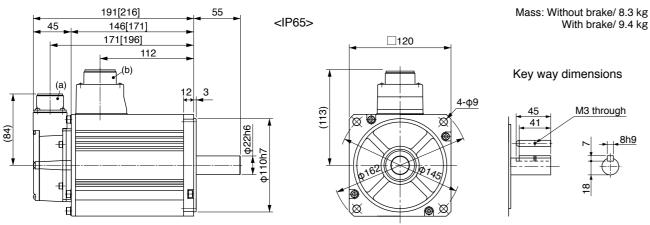
ess	
17-hit	

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]

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.

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
Mataumaadal		IP65		MSME402GC□M	MSME402SC□M	
Motor mode	€I ∗1		IP67		-	-
A 1: 1-1 -	1	Model	A5II series		MFDKTB3A2	
Applicable driver	*2	No.	A5IIE series		MFDKTB3A2E	_
diivoi		Fr	ame sym	bol	F-fra	ame
Power supp	ply ca	apacity	/	(kVA)	6	.0
Rated outp	ut			(W)	40	00
Rated torqu	ue			(N·m)	12	2.7
Momentary	Max	c. peal	torque	(N·m)	38.2	
Rated curre	ent		(A(rms))	19.6	
Max. current (A(o-p))			8	83		
Regenerative brake Without option		No limi	it Note)2			
frequency (tir	mes/mir	n) Note)1	DV0P4285×2		No limit Note)2	
Rated rotat	ional	spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	4500	
Moment of	inert	ia	Without brake		12.9	
of rotor (x1	0 ⁻⁴ k	g·m²)	With brake		14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less			
Rotary enc	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution per single turn			le turn	1,048,576	131,072

• 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.

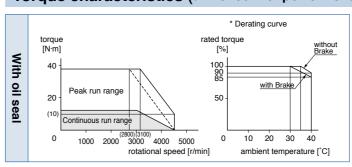
Static friction torque (N·m)	16.2 or more
. , ,	
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

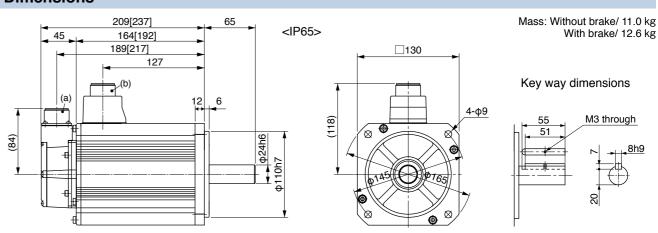
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During	Radial load P-direction (N)	784
	operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

200 V MSME 5.0 kW [Low inertia, Middle capacity] Please contact us for more information.

Specifications

			AC2	00 V	
		MSME502GC□M	MSME502SC□M		
Motor model *1		IP67	-	- -	
Amaliaabla	Model	A5I series	MFDKTB3A2		
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	_	
divei	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	7.	5	
Rated output		(W)	50	00	
Rated torque		(N·m)	15	15.9	
Momentary Ma	ax. peal	k torque (N·m)	47.7		
Rated current		(A(rms))	24.0		
Max. current		(A(o-p))	10	102	
Regenerative b	rake	Without option	35	57	
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 (×10 ⁻⁴	kg·m²)	With brake	18.6		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1,048,576	131,072	

• 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

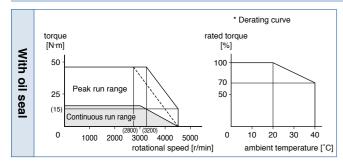
Permissible load (For details, refer to P.183)

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

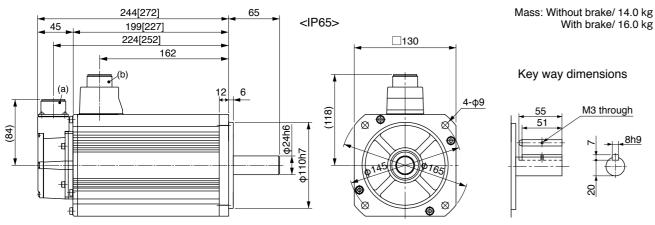
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

[Unit: mm]

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

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

* Figures in [] represent the dimensions with brake.

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	
		IP65		MDME102GC□M	MDME102SC
Motor mode	9I ∗1	IP67		-	-
A I' l. I .	Mode	A5II serie	S	MDDK	T3530
Applicable driver	*2 No.	A5IE ser	ies	MDDKT3530E	-
unven	F	rame sym	bol	D-fr	ame
Power supp	oly capaci	ty	(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. current (A(o-p))			2	4	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tir	nes/min) Note)	DV0P4284		No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	2000	
Max. rotation	onal spee	d	(r/min)	3000	
Moment of	inertia	Without	brake	4.0	60
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	5.5	90
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		on per sino	le turn	1,048,576	131,072

• 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.

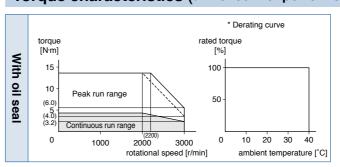
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

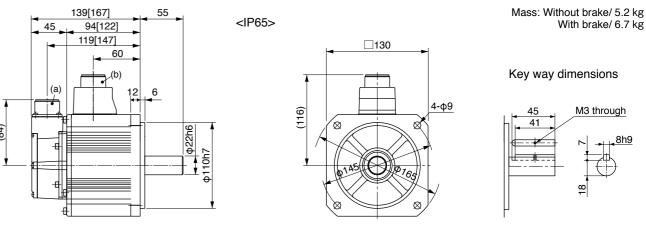
5 .	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.

200 V MDME 1.5 kW [Middle inertia, Middle capacity] Please contact us for more information.

Specifications

				AC2	00 V
Mataumaadal		IP65		MDME152GC□M	MDME152SC□M
Motor model		IP67		-	-
A mustic a late	Model	A5II series	s	MDDKT5540	
Applicable driver *2	No.	A5IIE series		MDDKT5540E	_
unver	Fr	ame sym	bol	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	Rated current (A(rms))			9.4	
Max. current (A(o-p))			4	0	
Regenerative brake Without op		option	No limi	t Note)2	
frequency (times/	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·m²)	With b	rake	7.99	
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	Resolution per single turn			1,048,576	131,072

• 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.

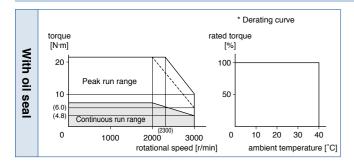
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

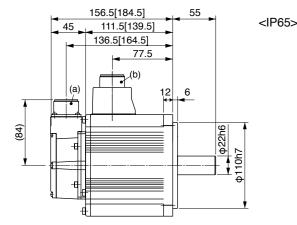
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.>)



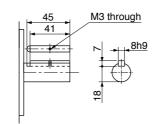
Dimensions



□130 (116)

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.

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

			AC2	00 V	
		IP65		MDME202GC□M	MDME202SC I
Motor mode	*1	IP67		-	-
A II I. I .	Model	A5II serie	S	MEDK	T7364
Applicable driver	*2 No.	A5IIE ser	ies	MEDKT7364E	-
unven	F	rame sym	bol	E-fr	ame
Power supp	oly capacit	у	(kVA)	3	.3
Rated outp	ut		(W)	20	00
Rated torqu	ıe		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	ent	(A(rms))	11.5	
Max. current (A(o-p))		4	9		
Regenerativ	/e brake	Without	option	No limit Note)2	
frequency (tir	mes/min) Note)	DV0P4285		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		8.72	
of rotor (×1	0 ⁻⁴ kg·m ²)	With brake		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		n per sina	le turn	1,048,576	131,072

• 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.

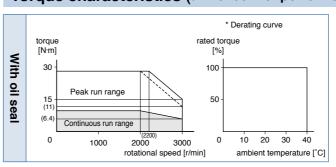
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

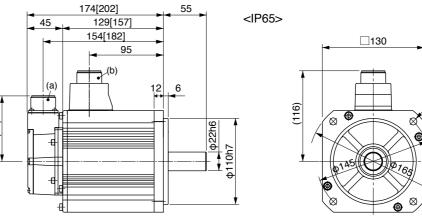
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.>)

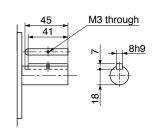


Dimensions



Mass: Without brake/ 8.0 kg With brake/ 9.5 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.

Specifications

			AC2	00 V
Motor model		IP65	MDME302GC□M	MDME302SC□M
*1		IP67	_	-
Amaliaahla	Model	A5II series	MFDK	TA390
Applicable driver *2	No.	A5IE series	MFDKTA390E	_
anver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	.3
Momentary Ma	ax. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	17.4	
Max. current (A(o-p))			7	4
Regenerative brake Without option		No limi	t Note)2	
frequency (times/i	frequency (times/min) Note)1 DV0P4285×2		No limi	t Note)2
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	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 encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131,072

• 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)

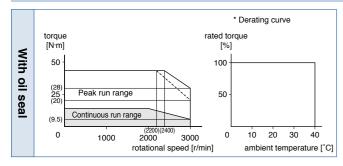
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

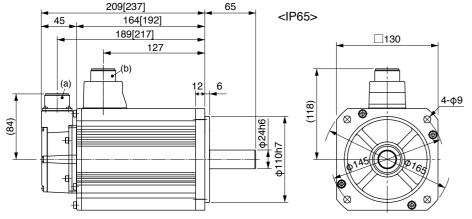
200 V MDME 3.0 kW [Middle inertia, Middle capacity]

*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.>)



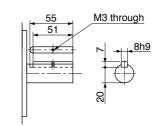
Dimensions



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.

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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 4.0 kW [Middle inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V		
		IP65		MDME402GC□M	MDME402SC N		
Motor mode	₽I ∗1		IP67		-	-	
A I' l. l .	N	Model	A5II serie	S	MFDK	ТВЗА2	
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	_	
unvoi		Fr	ame sym	bol	F-fra	ame	
Power supp	oly ca	apacity	y	(kVA)	6	.0	
Rated outpo	ut			(W)	40	00	
Rated torqu	ıe			(N·m)	19).1	
Momentary	Мах	. peal	k torque	(N·m)	57	57.3	
Rated curre	ent		(A(rms))	21.0		
Max. currer	nt		((A(o-p))	89		
Regenerativ	e bra	ake	Without	Without option No limit Note)2		t Note)2	
frequency (tin	nes/mir	n) Note)1	DV0P4	V0P4285×2 No limit Note)2		t Note)2	
Rated rotat	ional	spee	d	(r/min)	20	00	
Max. rotation	onal s	speed		(r/min)	3000		
Moment of	inert	ia	Without	brake	37.6		
of rotor (×1	0 ⁻⁴ k	g·m²)	With brake		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		Note)5	20-bit Incremental	17-bit Absolute			
Resolution per single turn			le turn	1,048,576	131,072		

• 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.

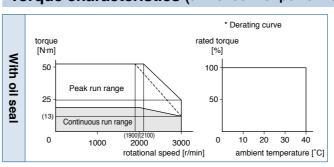
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

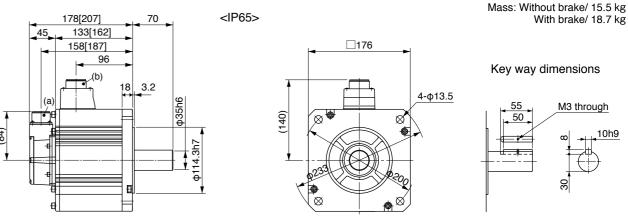
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

Specifications

			AC2	00 V
Motor model		IP65	MDME502GC□M	MDME502SC□M
wiotor model *1		IP67	-	-
Amaliaabla	Model	A5I series	MFDKTB3A2	
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	-
unvei	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	120	
frequency (times/r	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 ($\times 10^{-4}$	kg·m²)	With brake	48.8	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1,048,576	131,072

• 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)

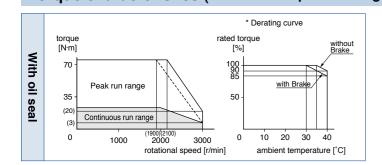
During assembly During	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

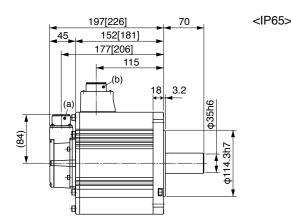
200 V MDME 5.0 kW [Middle inertia, Middle capacity]

*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		
Matanaaaa		IP65		MGME092GC□M	MGME092SC□	
Motor mode) :1	IP67		-	-	
A I' l. l .	Model	A5II series	S	MDDK	T5540	
Applicable driver *	No.	A5IIE ser	ies	MDDKT5540E	_	
unver	Fr	ame sym	bol	D-fra	ame	
Power supp	ly capacit	y	(kVA)	1.	.8	
Rated outpu	ut		(W)	90	00	
Rated torqu	ie		(N·m)	8.8	59	
Momentary	Max. peal	k torque	(N·m)	19.3		
Rated curre	ent	(.	A(rms))	7.6		
Max. current (A(o-p))			24			
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tim	nes/min) Note)1	DV0P4284		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	10	1000	
Max. rotatio	nal speed		(r/min)	2000		
Moment of i	inertia	Without	brake	6.70		
of rotor (×10	0 ⁻⁴ kg·m²)	With b	rake	7.99		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072		

• 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.

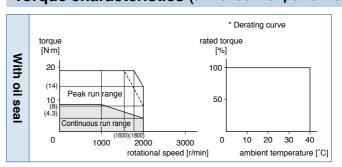
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

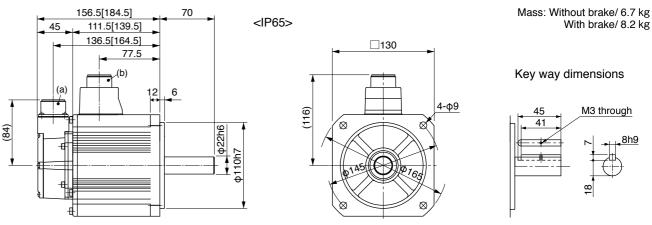
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	686
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.

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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.

Please contact us for more information

Specifications

				AC	200 V	
		MGME202GC□	M MGME202SC□M			
Motor model *1		IP67		-	-	
	Model	A5II serie	s	MFDKTA390		
Applicable driver *2	No.	A5IIE ser	ries	MFDKTA390E	_	
unver	Fr	ame sym	bol	F-	frame	
Power supply	capacit	y	(kVA)		3.8	
Rated output			(W)	2	2000	
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/	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	t brake	30.3		
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	31.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1,048,576	131,072	

• 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)

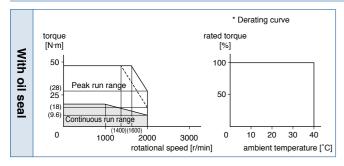
	During assembly During operation	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
		Radial load P-direction (N)	1176
		Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

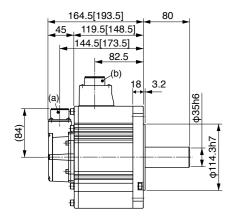
200 V MGME 2.0 kW [Middle inertia, Middle capacity]

*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.>)



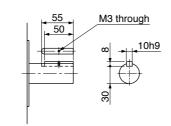
Dimensions



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.

<IP65>

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

					AC200 V		
Mataumand	-1		IP65		MGME302GC□M	MGME302SC□M	
Motor mode	ei ∗1		IP67		_	_	
		Model	A5II serie	S	MFDK	TB3A2	
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	_	
unven		Fr	ame sym	bol	F-fr	ame	
Power supp	ply c	apacit	/	(kVA)	4	.5	
Rated outp	ut			(W)	30	00	
Rated torqu	ue			(N·m)	28	3.7	
Momentary	[′] Ма	x. peal	k torque	(N·m)	71.7		
Rated curre	ent		(A(rms))	22.6		
Max. currer	nt		(A(o-p))		80		
Regenerativ	ve bi	rake	Without option		No limit Note)2		
frequency (tir	nes/m	in) Note)1	DV0P4285×2		No limit Note)2		
Rated rotat	iona	al spee	d	(r/min)	1000		
Max. rotation	onal	speed		(r/min)	2000		
Moment of	iner	tia	Without brake		48.4		
of rotor (×1	0 ⁻⁴ l	kg·m²)	With brake		49.2		
Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5			10 times or less				
			ications	Note)5	20-bit Incremental	17-bit Absolute	
	Re	esolutio	n per sing	le turn	1,048,576	131,072	

• 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.

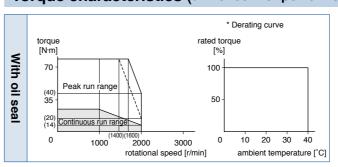
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

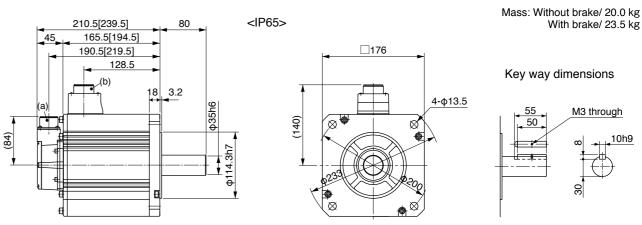
	During assembly	Radial load P-direction (N)	2058
		Thrust load A-direction (N)	980
		Thrust load B-direction (N)	1176
	During	Radial load P-direction (N)	1470
	operation	Sumg . , ,	490

- For details of Note 1 to Note 5, refer to P.182, 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.

200 V MHMJ 200 W [High inertia, Small capacity] Please contact us for more information.

Specifications

			AC2	00 V	
Motor model	IP65		MHMJ022G1□	MHMJ022S1	
*1		IP67	-	-	
Amaliaahla	Model	A5I series	MADK	T1507	
Applicable 42	No.	A5IIE series	MADKT1507E	_	
divei	Fr	ame symbol	A-fra	ame	
Power supply	capacity	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))	1.6		
Max. current		(A(o-p))	6.9		
Regenerative brake		Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4283	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	0.42		
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 encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1,048,576	131,072	

• 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.

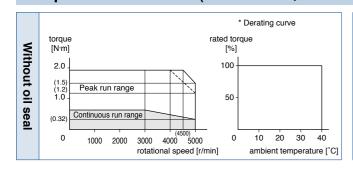
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

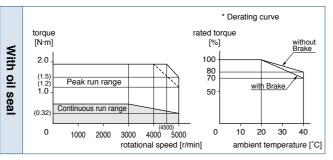
Permissible load (For details, refer to P.183)

	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

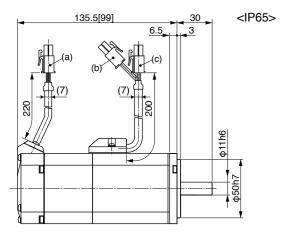
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





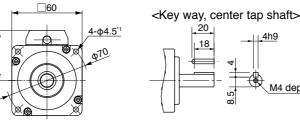
Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector



* 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]

Please contact us for more information

Specifications

					AC200 V			
Matanaaa		IP65		MHMJ042G1□	MHMJ042S1			
Motor mode	€I ∗1		IP67		-	-		
A 1: 1- 1 -		Model	A5II serie	s	MBDK	T2510		
Applicable driver	*2	No.	A5IIE ser	ies	MBDKT2510E	-		
unven		Fr	ame sym	bol	B-fra	ame		
Power supp	oly c	capacity	y	(kVA)	0.	.9		
Rated outp	ut			(W)	40	00		
Rated torqu	ıe			(N·m)	1.	.3		
Momentary	Ма	x. peal	c torque	(N·m)	3.	.8		
Rated curre	ent		(A(rms))		2.6			
Max. currer	nt		(A(o-p))		11.0			
Regenerativ	e bı	rake	Without option		No limi	t Note)2		
frequency (tin	nes/m	in) Note)1	DV0P4283		No limit Note)2			
Rated rotat	iona	al spee	d (r/min)		3000			
Max. rotation	onal	speed	ed (r/min)		5000			
Moment of	iner	tia	Without brake		0.67			
of rotor (×1	0 ⁻⁴ ł	kg·m²)	With brake		0.70			
Recommended moment of ratio of the load and the ro			0	tia Note)3	30 times or less			
Rotary encoder speci			fications	Note)5	20-bit Incremental	17-bit Absolute		
			n per sino	le turn	1,048,576	131,072		

• 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.

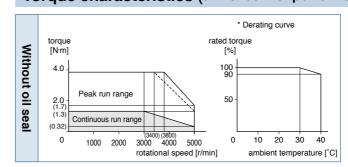
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2
_

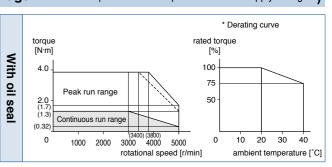
• Permissible load (For details, refer to P.183)

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

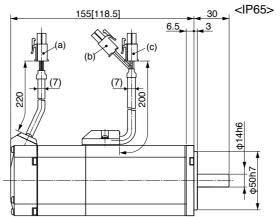
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





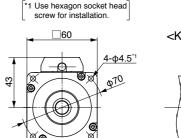
Dimensions



(a) Encoder connector

(b) Brake connector

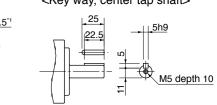
(c) Motor connector



<Key way, center tap shaft>

Mass: Without brake/ 1.4 kg

With brake/ 1.8 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.

200 V MHMJ 750 W [High inertia, Small capacity] Please contact us for more information.

Specifications

				AC200 V		
	IP65		MHMJ082G1□	MHMJ082S1□		
Motor model *1		IP67		-	-	
A !! !- ! -	Model	A5II series		MCDKT3520		
Applicable driver *2	No.	A5IE series		MCDKT3520E	_	
unver	Fr	ame symbol		C-fr	ame	
Power supply	capacit	y (kV/	۹)	1.	.3	
Rated output		(V	V)	75	50	
Rated torque		(N·n	n)	2	.4	
Momentary M	ax. peal	k torque (N·n	n)	7.1		
Rated current		(A(rms	5))	4.0		
Max. current		(A(o-p))	17.0		
Regenerative b	Regenerative brake		Without option		No limit Note)2	
frequency (times/	min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	al spee	d (r/mi	n)	3000		
Max. rotationa	ıl speed	(r/mi	n)	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)3	20 times or less		
Rotary encoder specifications Note)5)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turr	1	1,048,576	131,072	

• 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.

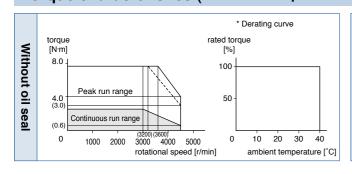
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

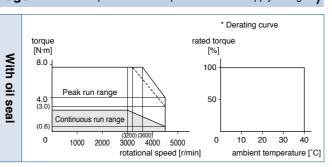
Permissible load (For details, refer to P.183)

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

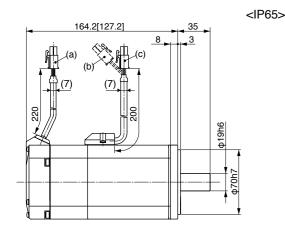
- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





Dimensions



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

screw for installation.

*1 Use hexagon socket head

<Key way, center tap shaft>

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**

200 V MHME 1.0 kW [High inertia, Middle capacity]

Please contact us for more information

Specifications

			AC2	00 V		
	. IP65 MHME102GC□M		MHME102SC			
Motor mode	el *1	IP67		-	-	
A II In I .	Model	A5II serie	S	MDDK	T3530	
Applicable driver	*2 No.	A5IIE ser	ies	MDDKT3530E	-	
unven	F	rame sym	bol	D-fr	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))	2	24	
Regenerativ	/e brake	Without	option	83		
frequency (tir	mes/min) Note)1	DV0P4284		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	24	l.7	
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		26.0		
Recommer ratio of the			tia Note)3	5 times	or less	
Rotary enc	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolutio		n per sina	le turn	1,048,576	131,072	

• 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.

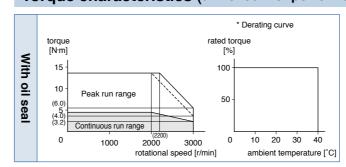
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

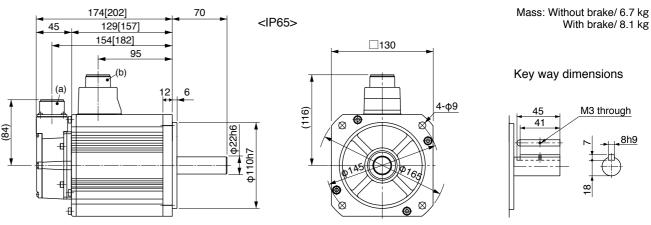
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
ı	During operation	Radial load P-direction (N)	490
(Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.

200 V MHME 1.5 kW [High inertia, Middle capacity] Please contact us for more information.

Specifications

			AC2	00 V	
		IP65	MHME152GC□M	MHME152SC□M	
Motor model		IP67	-	_	
A continuity	Model	A5II series	MDDK	T5540	
Applicable driver *2	No.	A5IE series	MDDKT5540E	_	
unven	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (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))	9.4		
Max. current		(A(o-p))	40		
Regenerative I	orake	Without option	2	22	
frequency (times/	min) Note)1	DV0P4284	130		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	al speed	(r/min)	3000		
Moment of ine	ertia	Without brake	37.1		
of rotor (×10 ⁻⁴	kg·m²)	With brake	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	
F	esolutio	n per single turn	1,048,576	131,072	

• 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.

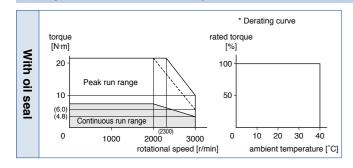
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

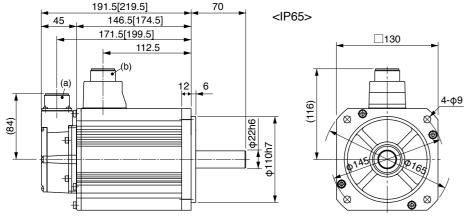
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, 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.>)

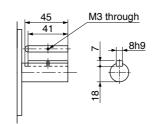


Dimensions



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.

Special Order Product

200 V MHME 2.0 kW [High inertia, Middle capacity]

Please contact us for more information

Specifications

				AC2	00 V	
Mataumat	-1	IP65		MHME202GC□M	MHME202SC N	
Motor mode	€I ∗1		IP67		-	-
A I' l. I .		Model	A5II serie	S	MEDK	T7364
Applicable driver	*2	No.	A5IIE ser	ies	MEDKT7364E	_
anvoi		Fr	ame sym	bol	E-fra	ame
Power supp	ply c	apacit	y	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ue			(N·m)	9.	55
Momentary	/ Ma	x. peal	k torque	(N·m)	28.6	
Rated curre	ent		(A(rms))	11.1	
Max. currer	nt		((A(o-p))	47	
Regenerativ	/e bi	ake	Without	option	45	
frequency (tir	nes/m	in) Note)1	DV0P4285		142	
Rated rotat	iona	al spee	d	(r/min)	20	00
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without	brake	57.8	
of rotor (×1	0 ⁻⁴ ł	⟨g·m²)	With brake		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		
Resolutio			n per sina	le turn	1,048,576	131,072

• 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.

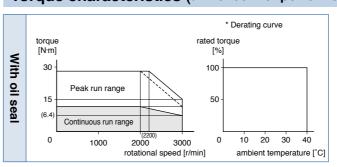
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

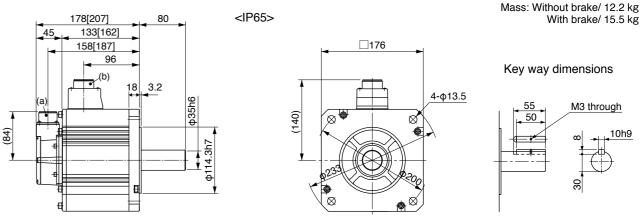
	During assembly	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
	During operation	Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

Special Order Product

200 V MHME 4.0 kW [High inertia, Middle capacity]

A5 Family

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V
Motor model		IP65	MHME302GC□M	MHME302SC□M
*1		IP67	-	-
Amaliaalala	Model	A5I series	MFDK	TA390
Applicable driver *2	No.	A5IIE series	MFDKTA390E	_
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	l.3
Momentary Ma	ax. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	16.0	
Max. current		(A(o-p))	68	
Regenerative b	rake	Without option	19	
frequency (times/r	min) Note)1	DV0P4285×2	142	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	90.5	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	92.1	
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	1,048,576	131,072

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)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 183.
- · Dimensions of Driver, refer to P.45.

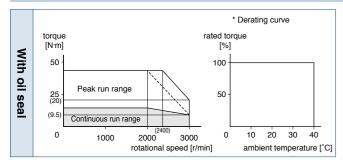
4-φ13.5

*1 Motor specifications:

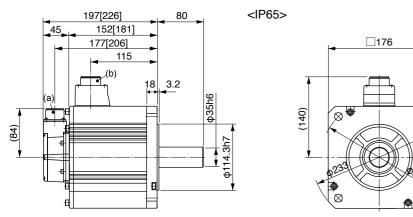
200 V MHME 3.0 kW [High inertia, Middle capacity]

*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.>)

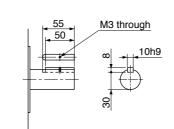


Dimensions



Mass: Without brake/ 16.0 kg With brake/ 19.2 kg

Key way dimensions



(a) Encoder connector

(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

				AC2	00 V		
	- 1	IP65			MHME402GC□M	MHME402SC M	
Motor model			IP67		-	-	
Annlinable		Model	A5II serie	s	MFDK	ТВЗА2	
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	_	
anvoi		Fr	ame sym	bol	F-fra	ame	
Power supp	ply o	capacity	y	(kVA)	6	.0	
Rated outp	ut			(W)	40	00	
Rated torqu	ue			(N·m)	19).1	
Momentary	/ Ma	ax. peal	torque	(N·m)	57.3		
Rated curre	ent		(A(rms))	21.0		
Max. curre	nt		((A(o-p))	89		
Regenerativ	ve b	rake	Without	option	17		
frequency (tir	mes/m	nin) Note)1	DV0P4285×2		125		
Rated rotat	tiona	al spee	d	(r/min)	2000		
Max. rotation	onal	speed		(r/min)	3000		
Moment of	ine	rtia	Without	brake	112		
of rotor (×10 ⁻⁴ kg·m²) With brake			rake	114			
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less				
Rotary encoder specifications Note)5			20-bit 17-bit Incremental Absolut				
	Re	esolutio	n per sing	le turn	1,048,576	131,072	

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.

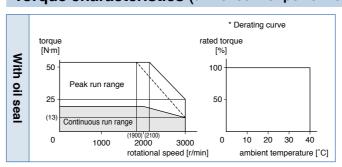
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

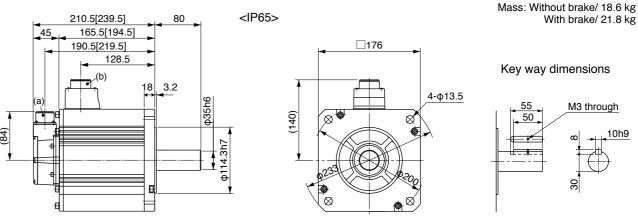
During	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

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1

Motor Specifications

200 V MHME 5.0 kW [High inertia, Middle capacity]

Motor Specification Description

A5 Family

Specifications

Motor model				AC2	00 V	
Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Applicable driver Appl			IP65	MHME502GC□M	MHME502SC□M	
Applicable driver **2 Frame symbol F-frame			IP67	_	-	
Frame symbol F-frame Power supply capacity (kVA) Rated output (W) Rated torque (N·m) 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) Without point of the load and the rotor Note)3 Rotary encoder specifications (Note)5 Firame symbol F-frame Potribisaze - MIPDR1B3AZE - F-frame Potribisazio F-frame Potribisazio F-frame Potribisazio Formame symbol Formame symbol F-frame Potribisazio Formame symbol F-frame Potribisazio Formame symbol F-frame Potribisazio Formame symbol F	Annliaghla	Model	A5II series	MFDK	TB3A2	
Frame symbol F-frame		No.	A5IE series	MFDKTB3A2E	_	
Rated output (W) 5000 Rated torque (N·m) 23.9 Momentary Max. peak torque (N·m) 71.6 Rated current (A(rms)) 25.9 Max. current (A(o-p)) 110 Regenerative brake frequency (times/min) Note)1 Without option 10 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake 162 Of rotor (×10 ⁻⁴ kg·m²) With brake 164 Recommended moment of inertia ratio of the load and the rotor Note)3 5 times or less Rotary encoder specifications Note)5 20-bit 17-bit	anvoi	Fı	rame symbol	F-fra	ame	
Rated torque (N·m) 23.9 Momentary Max. peak torque (N·m) 71.6 Rated current (A(rms)) 25.9 Max. current (A(o-p)) 110 Regenerative brake frequency (times/min) Note)1 DV0P4285×2 76 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 162 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5	Power supply	capacit	y (kVA)	7.	.5	
Momentary Max. peak torque (N·m) 71.6 Rated current (A(rms)) 25.9 Max. current (A(o-p)) 110 Regenerative brake frequency (times/min) Note)1 DV0P4285x2 76 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With brake 162 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5 Zo-bit 17-bit	Rated output		(W)	50	00	
Rated current (A(rms)) 25.9 Max. current (A(o-p)) 110 Regenerative brake frequency (times/min) Note)1 DV0P4285x2 76 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With brake 162 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Max. current (A(rms)) 25.9 Without option 10 To DV0P4285x2 76 Without brake 162 With brake 164 S times or less	Rated torque		(N·m)	23	3.9	
Max. current (A(o-p)) 110 Regenerative brake frequency (times/min) Note)1 DV0P4285×2 76 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 162 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Note)5 110 2000 100 110 2000 100 100	Momentary Ma	ax. pea	k torque (N·m)	71.6		
Regenerative brake frequency (times/min) Note)1 DV0P4285×2 76 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 162 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Without option 10 (r/min) 2000 Without brake 162 Stimes or less 17-bit	Rated current		(A(rms))	25.9		
frequency (times/min) Note)1 DV0P4285x2 76 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) With brake 162 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 20-bit 17-bit	Max. current		(A(o-p))	110		
Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia Without brake 162 of rotor (×10 ⁻⁴ kg·m²) With brake 164 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Potary encoder specifications Note)5 20-bit 17-bit	Regenerative b	rake	Without option	10		
Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²) Without brake 164 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 20-bit 17-bit	frequency (times/	min) Note)1	DV0P4285×2	76		
Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake 164 Recommended moment of inertia ratio of the load and the rotor Note)3 Retary encoder specifications Note)5 Without brake 164 Stimes or less 20-bit 17-bit	Rated rotation	al spee	d (r/min)	2000		
of rotor (×10 ⁻⁴ kg·m²) With brake 164 Recommended moment of inertia ratio of the load and the rotor Note)3 5 times or less Retary encoder specifications Note)5 20-bit 17-bit	Max. rotationa	l speed	(r/min)	3000		
Recommended moment of inertia ratio of the load and the rotor Note)3 Botany encoder specifications Note)5 20-bit 17-bit	Moment of ine	rtia	Without brake	162		
ratio of the load and the rotor Note)3 5 times or less Rotary encoder specifications Note)5 20-bit 17-bit	of rotor (×10 ⁻⁴ kg·m²) With brake			164		
Rotary ancoder enacitications Natale				5 times or less		
	Rotary encoder specifications Note)5					
Resolution per single turn 1,048,576 131,072	R	esolutio	n per single turn	1,048,576	131,072	

• 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.

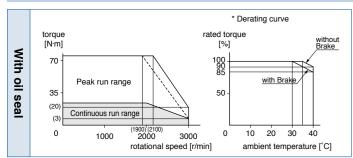
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

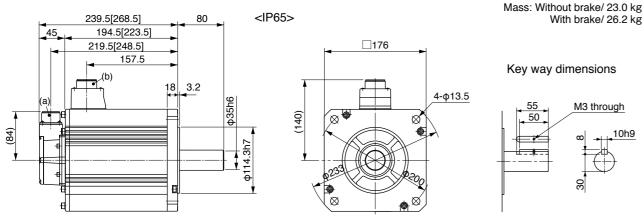
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, 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.

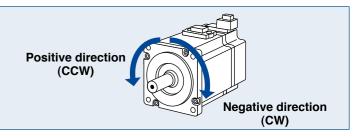
Environmental Conditions

Item		Conditions		
Ambient ter	mperature *1	0 °C to 40 °C (free from freezing)		
Ambient hu	ımidity	20 % to 85 % RH (free from condensation)		
Storage ter	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)		
Enclosure rating (Motor only) IP65 *3 IP67 *3*4		MSMD, MHMD, MSMJ, MHMJ (except rotating portion of output shaft and readwire end.)		
		M * ME (IP65 motor: 0.9 kW or more) (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)		
		M * ME IP67 motor (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)		
Alti	tude	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]

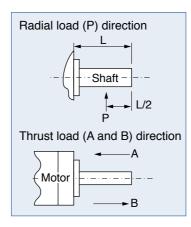
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- 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

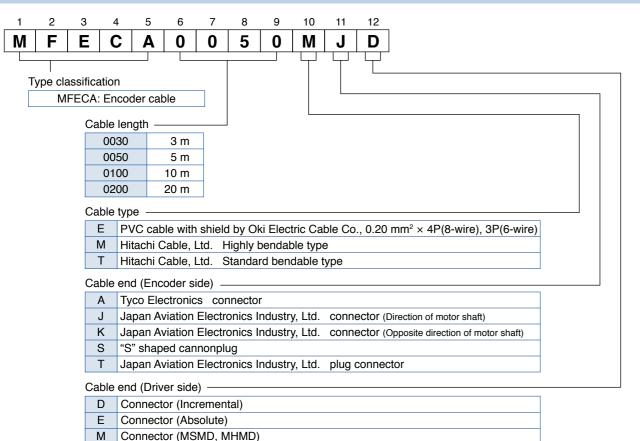
Motor series	Motor output	Static friction torque N·m	Rotor inertia × 10 ⁻⁴ kg·m²	Engaging time ms	Releasing time ms	Exciting current DC A (at cool-off)	Releasing voltage	Permissible work (J) per one braking		Permissible angular acceleration rad/s ²
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3		39.2	4.9	
MSMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1 V or more	137	44.1	30000
	750 W	2.45 or more	0.075	70 or less	20 or less	0.42		196	147	
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3		39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1 V or more	137	44.1	30000
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42		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	DC2 V	392	490	10000
	3.0 kW	11.8 or more		80 or less			or more			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	
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000
	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less	0.79	DC2 V	1176	1500	
MDME	3.0 kW	16.2 or more		110 or less	(130)	0.9	or more	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		1372	2900	10000
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	0.75	DC2 V or more	1470	1500	
	4.5 kW	31.4 or more	0.73	130 01 1633	100 01 1633	0.73		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	DC2 V or more		E	
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4		1372	2900	5440
	4.5 kW, 6.0 kW				50 or less					5000
MHMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1 V	137	44.1	
MSMJ MHMJ	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	or more	196	147	30000
	1.0 kW	4.9 or more	1 25	80 or less	70 or less (200)	0.59		588	780	10000
MHME	1.5 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79	DC2 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		1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000

- Excitation voltage is DC24 V±10 % (Large type motor) and DC24 V±5 % (Small type motor).
- 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.)

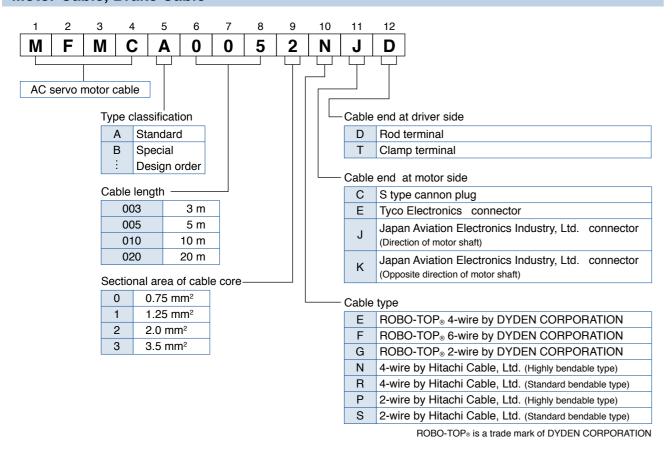
Options

Encoder Cable



Cable part No. Designation

Motor Cable, Brake Cable

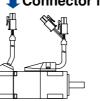


Specifications of Motor connector

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.)

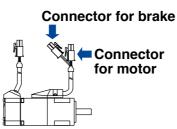
Connector for encoder

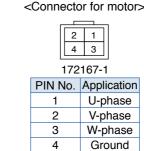


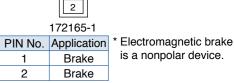
			,		PIN No.	Applicatio
	3	2	1]	1	NC
	6	5	4		2	PS
l	<u> </u>]	3	PS
		2168			4	E5V
20	-bit I	ncre	emer	ital	5	E0V
					6	FG(SHIELD

		_	1	PIN No.	Application
	3	2	1	1	BAT+
6 5 4		2	BAT-		
9 8 7			7	3	FG(SHIELD)
ı	17	2169		4	PS
				5	PS
17-bit Absolute				6	NC
				7	E5V
				8	E0V
na to NC.				9	NC

<Remarks> Do not connect anything to NC.





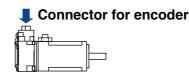


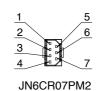
<Connector for brake>

• 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.

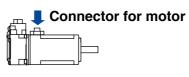




20-bit Incremental			Absolute
Application	Р	IN No.	Application
FG(SHIELD)		1	FG(SHIELD)
_		2	BAT-
E0V		3	E0V
PS		4	PS
_		5	BAT+
E5V		6	E5V
PS		7	PS
	Application FG(SHIELD) E0V PS E5V	Application FG(SHIELD) E0V PS E5V	Application

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.



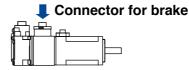


PIN No.	Application
1	U-phase
2	V-phase
3	W-phase
PE	Ground

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
2	Brake	a nonpolar device.

Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

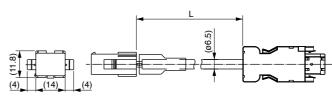
* Be sure to use only the screw supplied with the connector, to avoid damage.

* It doesn't correspond to IP65 and IP67.

MSMD 50 W to 750 W, MHMD 200 W to 750 W Compatible MFECA0 * * 0EAM Part No. motor output MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

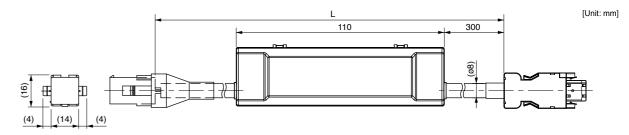
For 20-bit incremental encoder (Without battery box)

[Unit: mm]



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	Type Floatronics	10	MFECA0100EAM
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		<u> </u>

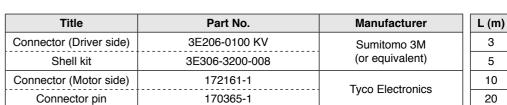
Part No.	MFECA0 * * 0EAE	Compatible motor output	l	,		200 W to 750 W 200 W to 750 W	
Specifications	For 17-bit absolute encoder (With battery box)						



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	Tugo Floatronico	10	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]



0.20 mm²×3P (6-wire)

Cable

3 MFECA0030EAD 5 MFECA0050EAD MFECA0100EAD 10 20 MFECA0200EAD

Part No.

• 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.

Specifications of Motor connector

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

Connector for encoder

IP67 motor

(Small type)

Connector for encoder

<Encoder connector for IP65 motor>



N/MS3102A20-29P

20-bit Incremental		17-bit Absolute	
PIN No.	Application	PIN No.	Application
Α	NC	Α	NC
В	NC	В	NC
С	NC	С	NC
D	NC	D	NC
E	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
M	NC	M	NC
N	NC	N	NC
P	NC	Р	NC
R	NC	R	NC
S	NC	S	BAT-
T	NC	T	BAT+

JN2AS10ML3-R

<Encoder connector for IP67 motor>

20-bi	20-bit Incremental		17-bit <i>l</i>	Absolute
PIN N	lo.	Application	PIN No.	Application
1		E0V	1	E0V
2		NC	2	NC
3		PS	3	PS
4		E5V	4	E5V
5		NC	5	BAT-
6		NC	6	BAT+
7		PS	7	PS
8		NC	8	NC
9		FG(SHIELD)	9	FG(SHIELD)
10		NC	10	NC

<Remarks>

* Electromagnetic brake

is a nonpolar device.

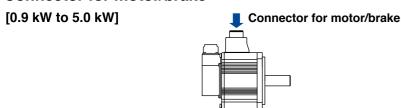
Do not connect anything to NC.

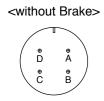
[6.0 kW or more]

<Motor>

Connector for motor Connector for brake

Connector for motor/brake

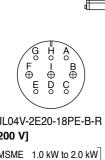




D A e e C B	F I B E D C
_04V-2E20-4PE-B-R	JL04V-2E20-18PE-
SME 750 W(400 V),	[200 V]
1 0 kW to 2 0 kW	INCME 10KW+000

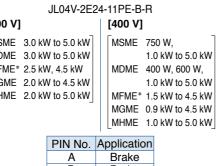
MSME	750 W(400 V),	[200 V]
MDME	1.0 kW to 2.0 kW 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW	MSME 1.0 kW to 2.0 k MDME 1.0 kW to 2.0 k MFME* 1.5 kW MGME 0.9 kW
MGME MHME	0.9 kW 1.0 kW to 1.5 kW	MHME 1.0 kW to 1.5 k

.04HV-2E	22-22PE-B-F	}		
MSME 3.0	kW to 5.0 kW		PIN No.	Application
	kW to 5.0 kW		G	Brake
MGME 2.0 kW to 4.5 kW			Н	Brake
MHME 2.0 kW to 5.0 kW			Α	NC
			F	U-phase
PIN No.	Application		I	V-phase
Α	U-phase		В	W-phase
В	V-phase		Е	Ground
С	W-phase		D	Ground
D Ground			С	NC



	[200 V]
kW	MSME 3.0 kW to 5.0 kW
) kW	MDME 3.0 kW to 5.0 kW
	MFME* 2.5 kW, 4.5 kW
	MGME 2.0 kW to 4.5 kW
kW	MHME 2.0 kW to 5.0 kW

<with Brake>



PIN No.	Application
Α	Brake
В	Brake
С	NC
D	U-phase
Е	V-phase
F	W-phase
G	Ground
Н	Ground
I	NC

*	MFME	is	common to	with or	without brake.	
	_					

<Remarks>

Do not connect anything to NC.

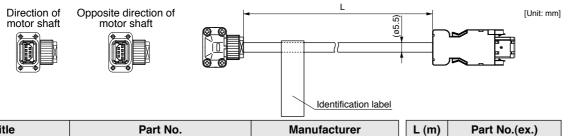
		D A C B	
	JL04V-2E3	32-17PE-B-R	
		kW to 15.0 kW kW kW	
	PIN No.	Application	
	Α	U-phase	
	В	V-phase	
	С	W-phase	
	D	Ground	
<brake></brake>			
		(• •	
		D A C B	
	N/MS310	D A C B	
		02A 14S-2P kW to 15.0 kW	
	MDME 7.5 MGME 6.0	02A 14S-2P kW to 15.0 kW	
	MDME 7.5 MGME 6.0 MHME 7.5 PIN No.	02A 14S-2P kW to 15.0 kW kW kW Application Brake	
	MDME 7.5 MGME 6.0 MHME 7.5 PIN No. A B	D2A 14S-2P kW to 15.0 kW kW kW Application Brake Brake	
	MDME 7.5 MGME 6.0 MHME 7.5 PIN No.	02A 14S-2P kW to 15.0 kW kW kW Application Brake Brake NC	
	MDME 7.5 MGME 6.0 MHME 7.5 PIN No. A B C	D2A 14S-2P kW to 15.0 kW kW kW Application Brake Brake NC NC	
*	MDME 7.5 MGME 6.0 MHME 7.5 PIN No. A B C D Electroma	02A 14S-2P kW to 15.0 kW kW kW Application Brake Brake NC	

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Oki Electric Cable Co., Ltd.

Encoder Cable

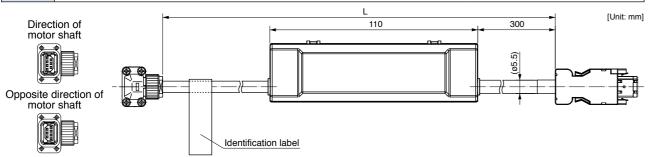
* It doesn't correspond to IP65 and IP67.



Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	lſ
Connector (Motor side)	JN6FR07SM1	Japan Aviation	l
Connector pin	LY10-C1-A1-10000	Electronics Ind.	
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.	-

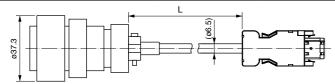
Specifications For 17-bit absolute encoder (With battery box)

MFECA0 ** 0MJE (Highly bendable type, Direction of motor shaft) MFECA0 ** 0MKE (Highly bendable type, Opposite direction of motor shaft) Compatible	
MFECAO * * OMKE (Highly bendable type, Opposite direction of motor shaft)	
	MSME 50 W to 750 W
Part No. MFECA0 * * 0TJE (Standard bendable type, Direction of motor shaft) 50 W to (200 V)	
MFECA0 * * 0TKE (Standard bendable type, Opposite direction of motor shaft)	



Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030MJE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050MJE
Connector (Motor side)	JN6FR07SM1	Japan Aviation	10	MFECA0100MJE
Connector pin	LY10-C1-A1-10000	Electronics Ind.	20	MFECA0200MJE
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.		

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)		



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 x3P (6-wire)	Oki Electric Cable Co., Ltd.

L (m)	Part No.
3	MFECA0030ESD
5	MFECA0050ESD
10	MFECA0100ESD
20	MFECA0200ESD

[Unit: mm]

MFECA0030MJD MFECA0050MJD

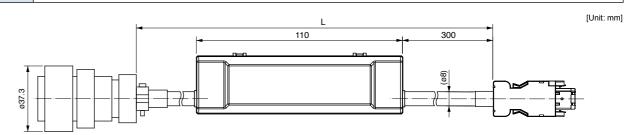
MFECA0100MJD MFECA0200MJD

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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)		
Specificatio	For 20-bit incremental end	For 20-bit incremental encoder (Without battery box)			

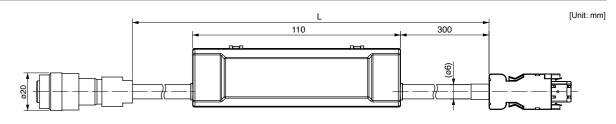
Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETD
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	MFECA0100ETD
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETD
Cable	0.2 mm ² x3P (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)		



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 No.	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)
Specifications	For 17-bit absolute encoder (With battery box)		



Title	Part No.	Manufacturer	L (m)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3
Shell kit	3E306-3200-008	(or equivalent)	5
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20
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	

[Unit: mm]

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

MSMD 50 W to 750 W, MHMD 200 W to 750 W Applicable model MFMCA0 * * 0EED Part No. MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

> =10

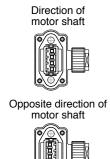
Title	Part No.	Manufacturer
Connector	172159-1	Tugo Flootronico
Connector pin	170366-1	Tyco Electronics
Rod terminal	AI0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	BOBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION

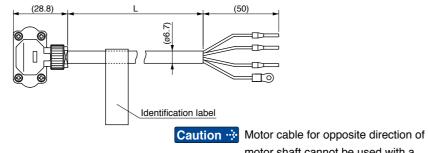
L (m)	Part No.	
3	MFMCA0030EED	
5	MFMCA0050EED	
10	MFMCA0100EED	
20	MFMCA0200EED	

	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)

[Unit: mm]

[Unit: mm]





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 Al0.75-8GY		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. IVITIVICAU	2ECD Applicable model	MFME	1.5 kW(200 V)
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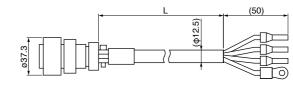
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	l a	L	-1-	(50)) <u> </u>	
037.3			(412.5)			

Title	Part No.	Manufacturer
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.
Rod terminal	NTUB-2	LC T Mfa 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

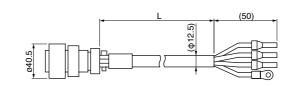
L (m)	Part No.
3	MFMCA0032ECD
5	MFMCA0052ECD
10	MFMCA0102ECD
20	MFMCA0202ECD

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-4SE-EB-R	Japan Aviation	3	MFMCD0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCD0052ECD
Rod terminal	NTUB-2	LS T Mfa Co. Ltd	10	MFMCD0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCD0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

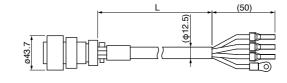
	Part No.		MHME 2.0 kW (200 V and 400 V commonness)	
- 1			(200 v and 400 v continionness)	1



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	NTUB-2 N2-M4 J.S.T Mfg. Co., Ltd.		MFMCE0102ECD
Nylon insulated round terminal	N2-M4			MFMCE0202ECD
Cable	ROBO-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		-

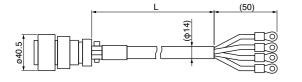
Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.

A5 Family Options

Motor Cable (without Brake)
* It doesn't correspond to IP65 and IP67.

Part No. MFMCA0 * * 3ECT

MSME $\,$ 3.0 kW to 5.0 kW, MDME $\,$ 3.0kW to 5.0 kW Applicable model MHME 3.0 kW to 5.0 kW, MGME 2.0kW to 4.5 kW (All model 200 V and 400 V commonness)

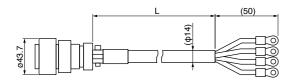


Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R Japan Aviation		3	MFMCA0033ECT
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCA0203ECT

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

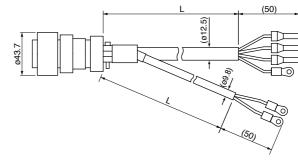
Part No.	MFMCA0 * * 2FCD	Applicable model	MDME MFME MHME	1.0 kW to 2.0 kW(200 V), 1.0 kW to 2.0 kW(200 V), 1.5 kW(200 V), 1.0 kW(200 V) to 1.5 kW(200 V) 0.9 kW(200V)
----------	-----------------	------------------	----------------------	--------------------------------------------------------------------------------------------------------------------------

Part No. MFMCA0032FCD MFMCA0052FCD MFMCA0102FCD MFMCA0202FCD

Title		Part No.	Manufacturer	L (m)
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation	3
Cable clamp		JL04-2022CK(14)-R	Electronics Ind.	5
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	10
Nylon insulated	Earth	N2-M4	J.S.T Mfg. Co., Ltd.	20
round terminal Brak		N1.25-M4	J.S.1 Mig. Co., Ltd.	
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 2.0 mm ² 6-wire	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]



Title		Part No.	Manufacturer	L (m)	I
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	3	
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.	5	Ī
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.	10	T
Nylon insulated round terminal Brake		N2-M4	LC T Mfa Co Ltd	20	T
		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		

L (m)	Part No.		
3	MFMCE0032FCD		
5	MFMCE0052FCD		
10	MFMCE0102FCD		
20	MFMCE0202FCD		

193

Brake Cable

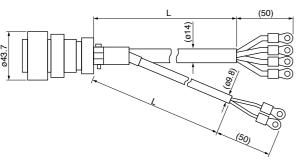
* It doesn't correspond to IP65 and IP67.

A5 Family

Options

Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.

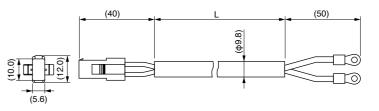
MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 4.5 kW, MHME 3.0 kW to 5.0 kW Applicable model MFMCA0 * * 3FCT Part No. MGME 2.0 kW to 4.5 kW (All model 200 V and 400 V commonness)



			,		
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	J.S.T Mfg. Co., Ltd.	10	
round terminal	Brake	N1.25-M4	J.S.1 Wilg. 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		

L (m)	Part No.		
3	MFMCA0033FCT		
5	MFMCA0053FCT		
10	MFMCA0103FCT		
20	MFMCA0203FCT		

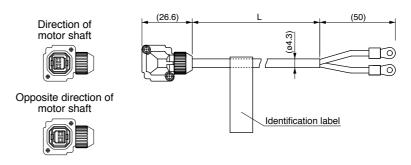
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Type Fleetrenies	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)		MSME	
Part No.		Applicable model	50 W to 750 W (200 V)	
	MFMCB0 * * 0SKT (Standard bendable type, Opposite direction of motor shaft)		(200)	

[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

[Unit: mm]

Cable for Interface

Part No. DV0P4360

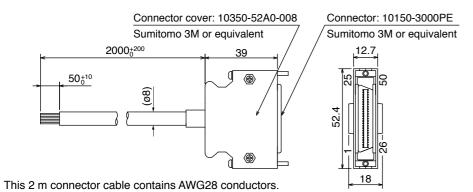


Table for wiring

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

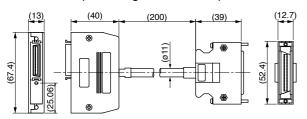
|--|

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.

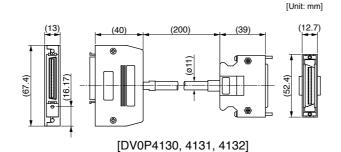
DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5II, A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5II, A5 series (A4, A series) for velocity control
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)

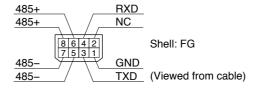
Part No. DV0PM20024

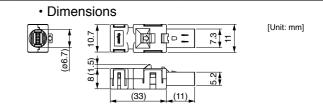
Components

[Unit: mm]

Title	Part No.	Manufacturer	Note
Connector	2040008-1	Tyco Electronics	For Connector X2 (8-pins)

Pin disposition of connector, connector X2





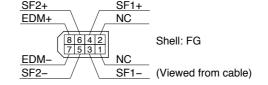
Connector Kit for Safety (Excluding A5IIE, A5E Series)

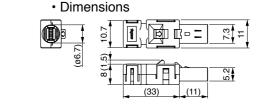
Part No. DV0PM20025

· Components

Title	Part No.	Manufacturer	Note
Connector	2013595-1	Tyco Electronics	For Connector X3 (8-pins)

• Pin disposition of connector, connector X3





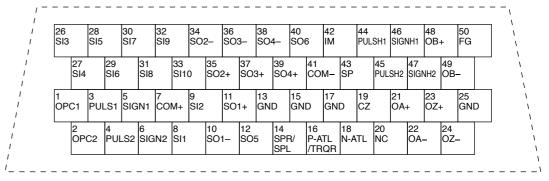
Connector Kit for Interface

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".

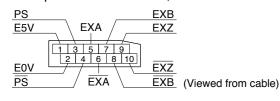
Connector Kit for External Scale (Excluding A5IE, A5E Series)

Part No. DV0PM20026

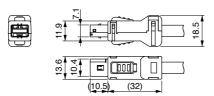
Components

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



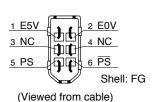
Connector Kit for Encoder

Part No. DV0PM20010

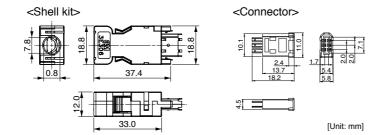
Components

Title	Part No.	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	For Connector V6
Shell kit	3E306-3200-008	(or equivalent)	For Connector X6

Pin disposition of connector, connector X6



Dimensions



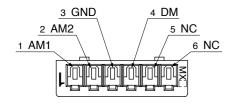
Connector Kit for Analog Monitor Signal

Part No. DV0PM20031

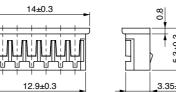
Components

Title	Part No.	Number	Manufacturer	Note
Connector	510040600	1	Molex Inc	For Connector X7 (6-pins)
Connector pin	500118100	6		

• Pin disposition of connector, connector X7



Dimensions



[Unit: mm]

<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B

Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A to C-frame 100 V, A to D-frame 200 V: Single row type)

Components

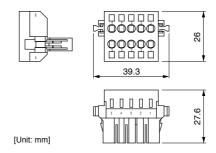
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector VA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20033 (For A to D-frame 200 V: Double row type)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-C	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT	2		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	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		

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		

Part No. DV0PM20052 (For E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-L	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		

Connector Kit

Connector Kit

A5 Family

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	LOTME On the	For Connector XD
Handle lever	MJFAT-0T	1	J.S.T Mfg. Co., Ltd.	For Connector 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	J.S.T Mfg. Co., Ltd.	For Connector XC
Handle lever	J-FAT-OT-L	2		* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	J.S.T Mfg. Co., Ltd.	For Connector VC
Handle lever	J-FAT-OT-L	2		For Connector XC

Connector Kit for Motor Connection (Driver side)

Part No. DV0PM20034 (For A to C-frame 100 V, A to D-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	06JFAT-SAXGF	1	LC TMfc 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.	Number	Manufacturer	Note
Connector	03JFAT-SAXGSA-L	1	LOTMs 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	LOTMin Co. Ltd	For Connector VD	
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XB	

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Options

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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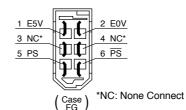
· Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Commenter VC (Coming)	
Shell kit	3E306-3200-008	1 (or equivalent)	(or equivalent)	For Connector X6 (6-pins)	
Connector	172161-1	1	Tues Flastronias	For Encoder cable	
Connector pin	170365-1	9	Tyco Electronics	(9-pins)	
Connector	172159-1	1	Type Fleetrenies	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

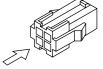
· Pin disposition of connector for motor cable



, :	:::::	=====		-
i	1	2	3	П
i	BAT+	BAT-	FG	Н
i	4	_5_	6	
į.	PS	PS	NC	
į.	7	8	9	
i	E5V	E0V	NC	







* 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.	DV0P4380	Applicable model	MSMD	50 W to 750 W,	MHMD	200 W to 750 W	
			MSMJ	200 W to 750 W,	MHMJ	200 W to 750 W	
			(incremental encoder type)				

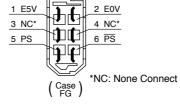
· Components

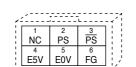
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Connector	172160-1	1	Tyco Electronics	For Encoder cable (6-pins)	
Connector pin	170365-1	6			
Connector	172159-1	1	Tues Fleetrenies	For Motor cable (4-pins)	
Connector pin	170366-1	4	Tyco Electronics		

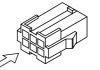
· Pin disposition of connector, · Pin disposition of connector connector X6

for encoder cable

· Pin disposition of connector for motor cable











Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

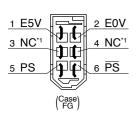
Part No. DV0PM20035 MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

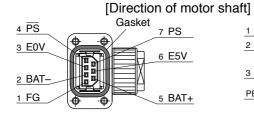
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable (7-pins)	
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.		
Motor connector	JN8FT04SJ1	1	Japan Aviation	For Motor cable (4-pins)	
Socket contact	ST-TMH-S-C1B-3500	4	Electronics Ind.		

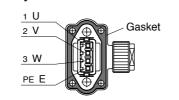
• Pin disposition of connector, • Pin disposition of connector connector X6 for encoder cable

· Pin disposition of connector for motor cable

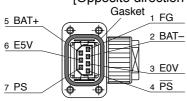


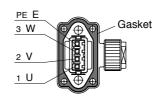
*1 NC: None Connect





[Opposite direction of motor shaft]





* 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.	DV0PM20036	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 Corniector 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.	For iviotor 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".

	A I' I. I .	<ip65 motor=""></ip65>						
F	Part No.	DV0P4310	Applicable model	MSME	1.0 kW to 2.0 kW,	MDME	1.0 kW to 2.0 kW	Without brake
		MHME	1.0 kW to 1.5 kW,	MGME	0.9 kW	Diake		

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 Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-4S	1	Japan Aviation	For Motor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

	Annlinable	<ip67 motor=""> MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW</ip67>	Without	
art No.		model	MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW	brake
			(All model 200 V and 400 V commonness)	

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-6A22-22SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

	A I' L I .	<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>Mithout</th></ip65>	notor>			Mithout	
Part No.	111/1110/13/211	Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	Without
		MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 4.5 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)		
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Francisco coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor coble	
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)		
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 Mater 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	MSME UKW 10 / UKW MIDME UKW 10 / UKW	With brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)	
Shell kit	3E306-3200-008	1 (or equivalent)		For Connector X6 (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/MS3106B20-18S	1	Japan Aviation	For Motor coble	
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.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Mater coble	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	For Motor cable	

Part No.		Applicable model	NISNIE 3 KVV 10 5 KVV NII INIE 3 KVV 10 5 KVV	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)		
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.		
Motor connector	N/MS3106B24-11S	1	Japan Aviation	For Motor cobla	
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

Title	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)	
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.	FOI WOLOI CADIE	

^{*} 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.

Part No.		Applicable model	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</ip67>	With 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)		
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Francisco cobla	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	Fay Matay sable	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Broke coble	
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake cable	

^{*} Cable cover size: Φ 22 to Φ 25. 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

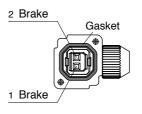
Part No.		Applicable model	MSME 50 W to 750 W	
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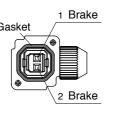
Components

Title	Part No.	Number	Manufacturer	Note
Connector	JN4FT02SJM-R	1	Japan Aviation	For broke 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".

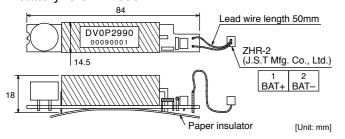
Mounting Bracket

A5 Family

Battery for Absolute Encoder

Part No. DV0P2990

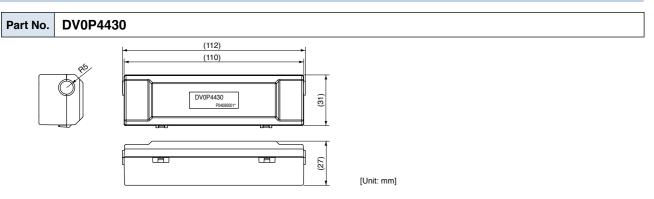
· Lithium battery: 3.6 V 2000 mAh



<Caution>

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 for Absolute Encoder

* A5IIE, A5E series does not support to absolute encoder.

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.

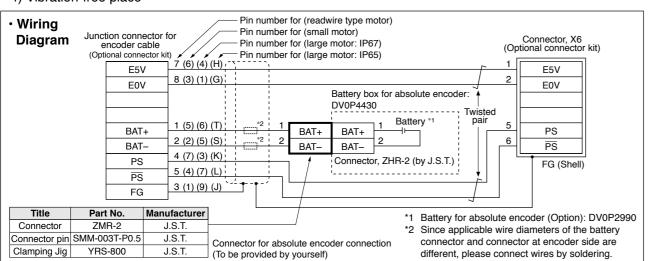
<Caution>

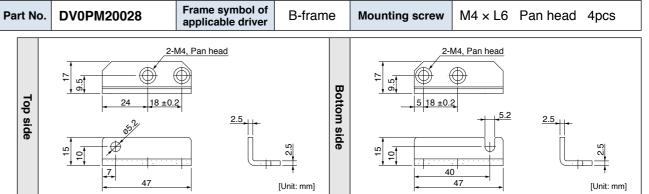
Install and fix the battery securely. If the installation and fixing of the battery is not appropriate, it may cause the wire breakdown or damage of the battery.

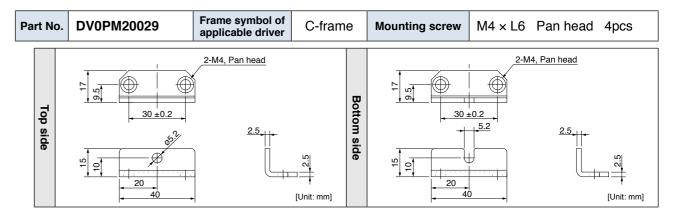
Refer to the instruction manual of the battery for handling the battery.

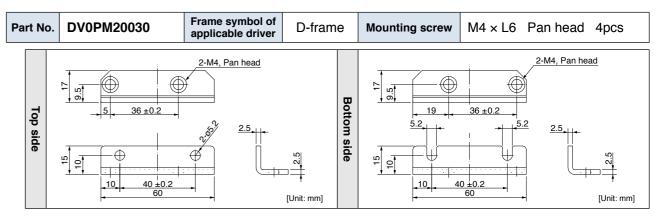
Installation Place of Battery

- 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









-Caution>

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).

140±5 °C

B-contact

Open/Close capacity

1 A 125 VAC 6000 times

0.5 A 250 VAC 10000 times

(resistance load)

Activation

temperature of

built-in thermostat

voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed

Cover the regenerative resistor with a nonflammable material so that it cannot be directly touched.

Specifications

Weight

kg

0.1

0.1

0.4

0.2

0.5

1.2

0.5

1.2

16

16

cable core

outside

diameter

mm

Ф1.27

AWG18

stranded

wire

__ *2

_ *2

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,

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply

Resistance

Ω

50

100

25

50

30

20

120

80

3.3

13.3

*1 Power with which the driver can be used without activating the built-in thermostat. A built-in thermal fuse and a thermal protector are provided for safety.

Rated power

(reference) *1

Free air

W

10

10

17

17

40

52

35

65

_ *3

with fan

1 m/s W

25

25

50

130

80

190

780

1140

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.

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

100 °C.

Manufacturer : Iwaki Musen Kenkyusho

power supply voltage or load.

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).

Attach the regenerative resistor to a nonflammable material such as metal.

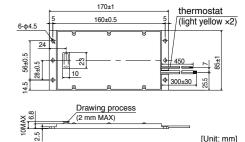
*3 With built-in fan which should always be operated with the power supply connected across 24 V and 0 V.

	Power supply							
Frame	Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-phase, 400 V					
А	DV0P4280	DV0P4281 (50 W, 100 W) DV0P4283 (200 W)	_					
В	DV0P4283	DV0P4283						
С	DV0P4282	DV0F4263						
D		DV0P4284	DV0PM20048					
E		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 thermostat (light yellow ×2) [Unit: mm]

DV0P4282, DV0P4283

DV0P4280, DV0P4281



Options Fig.2 Α (Mounting pitch) · Wiring of the reactor <3-Phase> · Wiring of the reactor <Single phase> Servo Power supply Servo side side driver Power side supply : Center-to-center distance F: Center-to-center on outer circular arc distance on

slotted hole

												[UIIIL IIIIII]
	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
	DV0P227	55±0.7	80±1	66.5±1	110мах	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.2	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

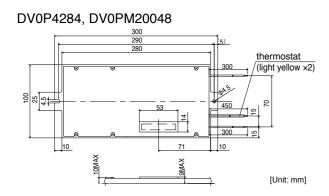
Harmonic restraint measures are not common to all countries. Therefore, prepare the measures that meet the requirements of the destination country.

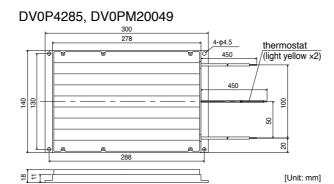
With products for Japan, on September, 1994, "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" and "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" established by the Agency 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

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

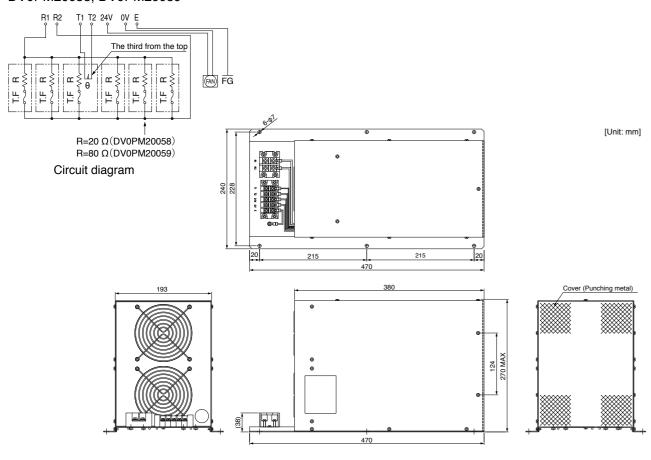
Surge Absorber for Motor Brake





External Regenerative Resistor

DV0PM20058, DV0PM20059



<Remarks>

Thermal fuse is installed for safety. Compose the circuit so that the power will be turned off when the thermostat is activated. 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) Install a fan for a forced cooling if necessary.

211

<Caution>

Regenerative resistor gets very hot.

Take preventive measures for fire and burns.

Avoid the installation near inflammable objects, and easily accessible place by hand.

	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	INRIBG271K	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		
MIDINE	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		Z15D271	SEMITEC Corporation or		
MHMJ	200 W to 750 W	or TNR15G271K	NIPPON CHEMI-CON CORPORATION		
MHME	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation		
IVITIVIE	2.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation		

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 Swich, Relay	
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor	
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html		
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for holding brake	
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm	_	
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/		
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	Noise filter for signal lines	
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/	, ,	
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		
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		
J.S.T. Mfg. Co., Ltd.	+81-45-543-1271 http://www.jst-mfg.com/index_e.php		
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable	
Mitutoyo Corporation	+81-44-813-8236 http://www.mitutoyo.co.jp/eng/		
Magnescale Co., Ltd.	+81-463-92-7973 http://www.mgscale.com/mgs/language/english/		
MicroE Systems	+1-781-266-5700 http://www.microesys.com/	External scale	
Renishaw plc	+44 1453 524524 www.renishaw.com		
Fagor Automation S.Coop	+34-943-719-200 http://www.fagorautomation.com		
Schaffner EMC, Inc.	+81-3-5712-3650 http://www.schaffner.jp/	Noise filter	
TDK-Lambda Corporation	+81-3-5201-7140 http://www.tdk-lambda.com/	NOISE IIILEI	

^{*} The above list is for reference only. We may change the manufacturer without notice.

MEMO

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

2

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

Contents

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Lasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

MINAS E Series

- 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.

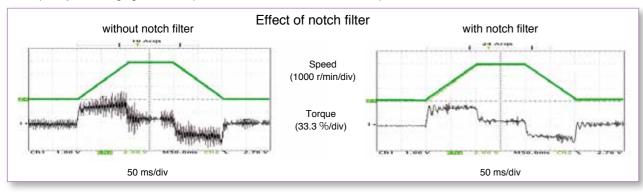
?. Further Reduction of Vibration

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.

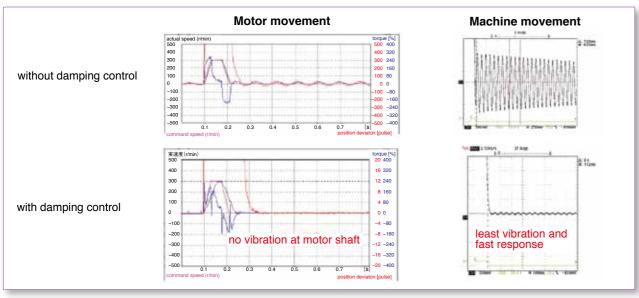
Notch filter (Note1)

- 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



217

(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: D 200 for setup support software.

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 EquipmentI	
	EN61000-6-2	Immunity for Industrial Environments	
Motor	EC61000-4-2	Electrostatic Discharge Immunity Test	l
and driver	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	Conforms to references
unver	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,

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 series	Rated output (kW)	Rated rotational speed (Max. speed) (r/min)	Rotary 6 2500 P/r incremental	encoder 17bit absolute/ incremental	Brake Holding	Gear High precision	UL/ CSA	Enclosure	Features	Applications
	MUMA		(Dillil)								
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

MINAS E series

Motor Line-up

M U M A 5 A Z P 1 S ** **Special specifications** Symbol **Motor structure** MUMA Ultra low inertia (50 W to 400 W) Holding brake Oil seal Symbol Key-way, without with without with* Motor rated output center tap S Symbol Rated output **Voltage specifications** Т

* Motor with oil seal is manufactured by order.

Design order

Symbol Specifications 1 Standard

Rotary encoder specifications

50 W

100 W

200 W

400 W

Servo Motor

5A

01

02

04

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10,000	5

Symbol

2

Z

Specifications

100 V

200 V

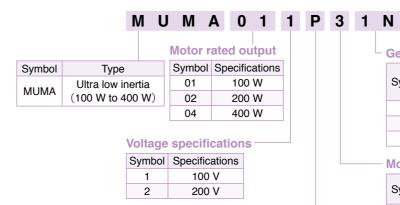
100 V/200 V common

(50 W only)

See P.227 for motor specifications

•

■ Motor with gear reducer



Rotary	encoder specific	ations —		
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10,000	5

Gear reduction ration, gear type

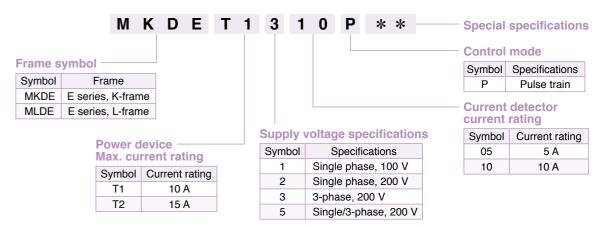
	Gear	Moto	r outpu	t (W)	
Symbol	reduction ratio	100	200	400	Gear type
1N	1/5	•	•	•	Cau biada
2N	1/9	•	•	•	For high accuracy
4N	1/25	•	•	•	accuracy

Motor structure

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

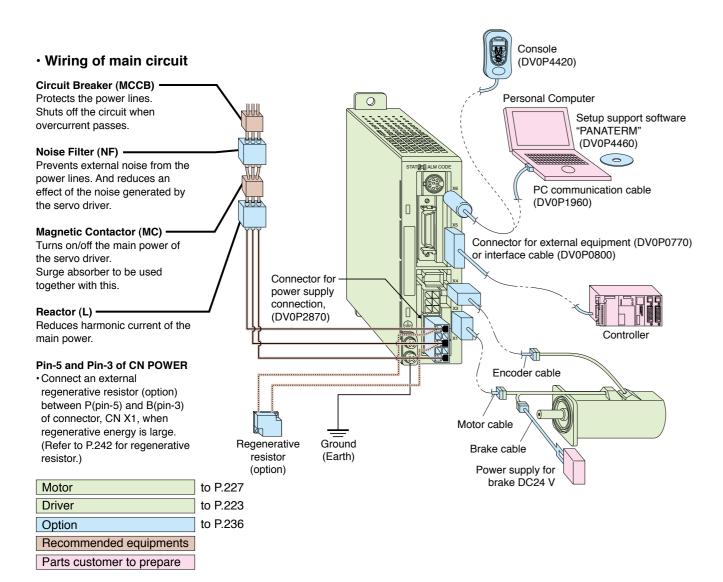
See P.232 for motor with gear reducer specifications

Servo Driver



See P.223 for driver specifications

MINAS E Series



List of recommneded prripheral equipments

	Мо	tor	Power			Magnetic	
Power supply	Series	Output	capacity (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)		(or rra)	
		50 W	0.01970				
Single		100 W	0.3 kVA	(5 A)		15 A	
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	0.017/4				
3-phase		100 W	0.3 kVA	(5 A)		10 A	
200 V		200 W	0.5 kVA	1		(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 p	age					
	Optio	ns	i	Part No.	Carrying page	
Technical Refe			Japanese	DV0P3680	_	
rechnical Rele	rence		English	DV0P3700	_	
Console				DV0P4420	241	
Setup Support			Japanese			
Software, PANATERM			English	DV0P4460	236	
RS232 Commu (for Connection				DV0P1960	241	
Interface Cable)			DV0P0800	241	
Connector Kit f	or Ext	erı	nal Equipment	DV0P0770	240	
Connector Kit for Moto			and Encoder	DV0P3670	239	
Connector Kit for Drive			Power Supply	DV0P2870	239	
Encoder Cable	!		MFECA0 * *	0EAM	238	
Motor Cable			MFMCA0 * *	238		
Brake Cable			MFMCB0 * *	0GET	238	
Cable Set (3 m	(Note 3))	DV0P37300		238	
Cable Set (5 m	(Note 3))	DV0P39200	238		
DIN Rail Moun	t Unit		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			100 V	DV0P228	243	
			200 V	DV0P220	7	
Noise Filter				DV0P4160	256	
			gle phase O V, 200 V	DV0P4190	256	
	3	3-p	hase 200 V	DV0P1450		
Noise Filter for	Signa	ιlV	Vire	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

			2500P/r, Inc	remental					Option			
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable		Brake Cable	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)		MENACAC III II CAED					D)/0D4400
	400	MUMA042P1	229	MLDET2510P	226 (L)	WIFECAU* * UEAW	MFMCA0 * * 0AEB		MFMCB0 * * 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)							
200 V	400	MUNACAODA 🗆	000	MLDET2510P	000 (1)							
	400	MUMA042P1	229	MLDET2310P	226 (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.

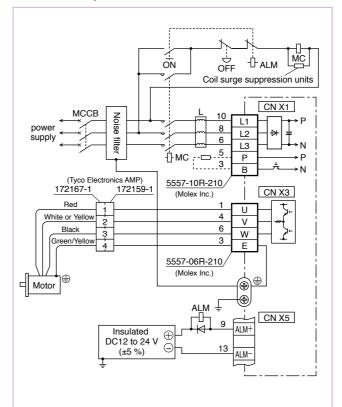
Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

E Series

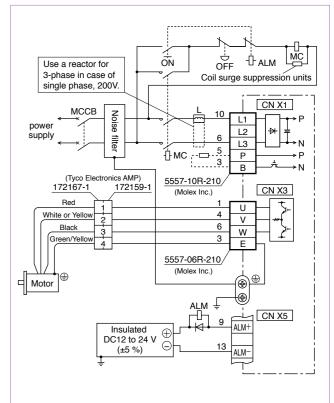
Wiring Diagram

Standard Wiring Example of Main Circuit

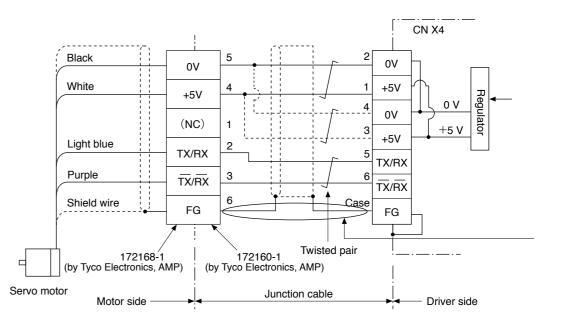
3-Phase, 200 V



■ 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
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

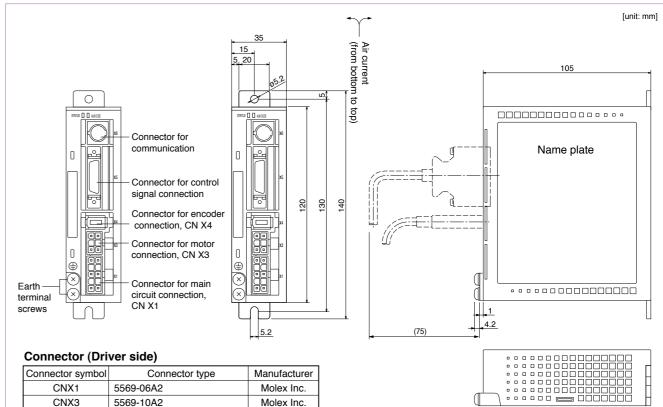
Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

			Specificatio	
	Ιηρ	Sing	le phase, 100 V	Single phase, 100 V to 115 V +10 % 50/60 Hz
	Input power	Sing	le phase, 200 V	Single phase, 200 V to 240 V +10 % 50/60 Hz
	ver	3-ph	ase, 200 V	3-phase, 200 V to 240 V +10 % 50/60 Hz
	E N	Tem	perature	Operating: 0 to 55 °C, Storage: -20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>
	Environment	Hum	idity	Both operating and storage : 90 %RH or less (free from condensation)
	me	Altitu	ıde	1000 m or lower
	2	Vibra	ation	5.88 m/s ² or less, 10 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	trol me	ethod	IGBT PWM Sinusoidal wave drive
	Enco	oder fe	edback	2500 P/r (10000 resolution) incremental encoder
		Inpu		7 inputs (1) Servo-ON, (2) Alarm clear and other inputs vary depending on the control mode.
	Control signal	Outp		4 outputs (1) Servo alarm, (2) Alarm,
		Inpu	t	(3) Release signal of external brake and other outputs vary depending on the control mode 2 inputs
	Pulse signal	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	ation function RS232	1 : 1 communication to a host with RS232 interface is enabled.
	Disp	lay LE	D	(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)
	_	enerat		No built-in regenerative resistor (external resistor only)
		amic b trol mo		Built-in 3 modes of (1) High-speed position control, (2) Internal velocity control and (2) Useh functional impositioning control and
		Con	rol input	 (3) High-functionality positioning control are selectable with parameter. (1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Deviation counter clear, (4) Gain switching, (5) Electronic gear switching
		Con	rol output	(1) Positioning complete (In-position)
	Positi	Oon	Max. command pulse frequency	Line driver : 500 kpps, Open collector : 200 kpps
	Position control	Puls	Type of input pulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)
	tro_	Pulse input	Electronic gear (Division/Multiplication) of command pulse	Setup of electronic gear ratio Setup range of (1-10000) × 2 ⁽⁰⁻¹⁷⁾ /(1-10000)
			Smoothing filter	Primary delay filter or FIR type filter is selectable to the command input.
	Inte	Con	rol 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
	nternal	Con	rol output	(1) Speed arrival (at-speed)
	Spe		nal speed command	Internal 4-speed is selectable with control input.
	speed cor		start/down function	Individual setup of acceleration and deceleration are enabled, with 0 to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.
	control	Zoro	-speed clamp	
			Real-time	O-clamp of internal speed command with speed zero clamp input is enabled. 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.
		Mas inpu	king of unnecessary t	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 feedback e	1 P/r to 2500 P/r (encoder pulses count is the max.).
	on I	Protective function	Hardware error	Over-voltage, under-voltage, over-speed over-load, over-heat, over-current and encoder error etc.
		tive 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.
		Dom	ping control function	Manual setup with parameter
		Dan	ping control function	
		Setup	Manual	Console

Control Circuit Standard Wiring Example

Mass: 0.35 kg

Frame K



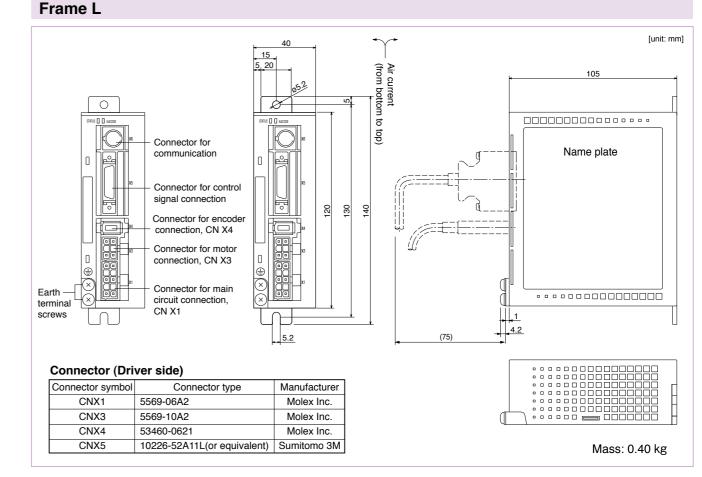
Molex Inc.

10226-52A11L(or equivalent) | Sumitomo 3M

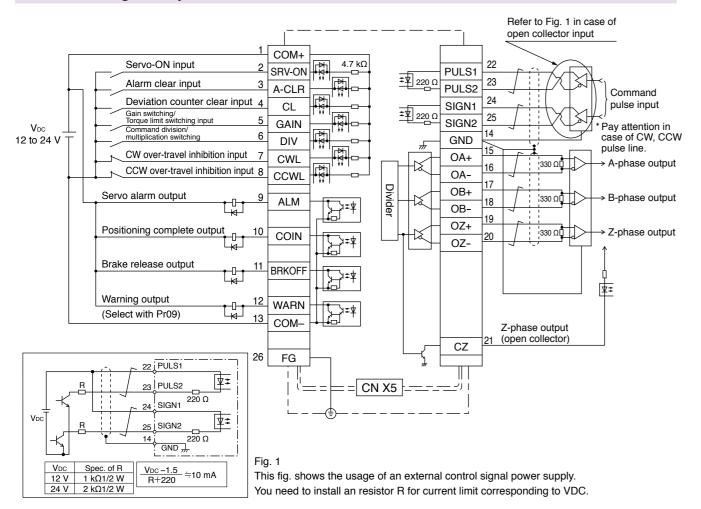
CNX4

CNX5

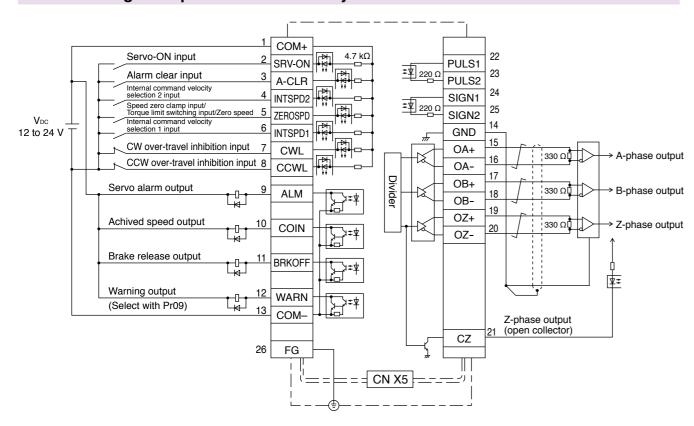
53460-0621



CN X 5 Wiring Example at Position Control Mode



CN X 5 Wiring Example at Internal Velocity Control Mode



Motor Specifications

100 V MUMA 50 W to 200 W [Low inertia Small drives]

				AC100 V			
Motor model		MUMA	5AZP1□	011P1□	021P1□		
A		Model No.	MKDET1105P	MKDET1110P	MLDET2110P		
Applicable driver		Frame symbol	Fran	me K	Frame L		
Power supply cap	pacity (kVA)	0.3	0.4	0.5		
Rated output (W)			50	100	200		
Rated torque (N-	m)		0.16	0.32	0.64		
Momentary Max.	peak to	orque (N·m)	0.48	0.95	1.91		
Rated current (Ar	rms)		1.0	1.6	2.5		
Max. current (Ao-p) 4.3 6.9		6.9	11.7				
Regenerative bra	ake	Without option		No limit Note)2			
frequency (times/min) Note)1		DV0P2890	No limit Note)2				
Rated rotational speed (r/min)		r/min)	3000				
Max. rotational sp	peed (r	/min)	5000				
Moment of inertia	a	Without brake	0.021 0.032		0.10		
of rotor (×10 ⁻⁴ kg·m ²)		With brake	0.026 0.036		0.13		
Recommended mof the load and the			30 times or less				
				2500 P/r			
Rotary encoder s	specific	eations	Incremental				
Re	esolutio	n per single turn		10000			
Protective enclos	sure rat	ting	IP65 (except rotating portion of output shaft and lead wire end)				
А	mbient	temperature	0 °C to 40 °C (free from freezing), Storage : -20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal humidity="">)</nomal>				
А	mbient	humidity	85 9	%RH or lower (free from condens	sing)		
Environment	nstallati	on location	Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust				
А	ltitude			1000 m or lower			
V	ibratior	n resistance	49 m/s² or less				
Mass (kg), () repr	esents l	holding brake type	0.4 (0.6)	0.5 (0.7)	0.96 (1.36)		
					1		

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	DC 24 V 10 %			

Permissible	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			
During operation	Radial load P-direction (N)	68	245			
	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 1 : Standard Ultra low inertia MUMA (50 W to 200 W)

Motor rated output

Symbol Rated output 5A 50 W 01 100 W 02 200 W

oltage specifications			
Symbol Specifications			
1	1 100 V		
7	100/200 V		
_	(50 W only)		

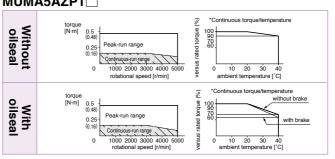
Symbol	Shaft	Holding	brake			
	Key-way, center tap	without	with	without	with	
S	•	•		•		
Т	•		•	•		

Rotary encoder specifications

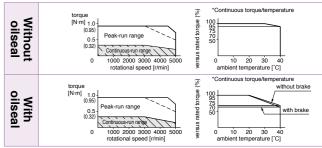
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

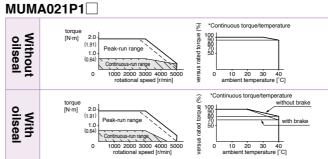
Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

MUMA5AZP1

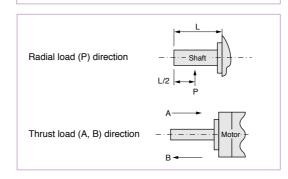


MUMA011P1





*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 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)

Motor Specifications

200 V **MUMA** 50 W to 400 W

Low inertia

AC200 V 5AZP1 012P1 022P1 042P1 MUMA Motor model MKDET1310P MLDET2310P Model No MKDET1505P MKDET2210P MLDET2510P Applicable driver Frame K Frame symbol Frame K Frame L Frame L 0.3 0.3 0.5 0.9 Power supply capacity (kVA) 100 50 200 400 Rated output (W) 0.16 0.32 0.64 1.3 Rated torque (N · m) 0.48 0.95 1.91 3.8 Momentary Max. peak torque (N · m) 1.0 1.0 1.6 25 Rated current (Arms) 4.3 Max. current (Ao-p) 4.3 7.5 11.7 Regenerative brake Without option No limit Note)2 frequency (times/min) DV0P2891 x 1 No limit Note)2 Note)1 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia Without brake 0.021 0.032 0.10 0.17 of rotor With brake 0.026 0.036 0.13 0.20 (×10⁻⁴ kg·m²) 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 $^{\circ}$ C to 40 $^{\circ}$ C (free from freezing), Storage : –20 $^{\circ}$ C to 65 $^{\circ}$ C Ambient temperature (Max.temperature guarantee 80 °C for 72 hours <nomal humidity>) Ambient humidity 85 %RH or lower (free from condensing) Environment Installation location Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust Altitude 1000 m or lower Vibration resistance 49 m/s2 or less Mass (kg), () represents holding brake type 0.4 (0.6) 0.5 (0.7) 1.5 (1.9) 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	DC 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 Design order Symbol Type 1 : Standard Ultra low inertia MUMA

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W 04

400 W

(50 W to 400 W)

Voltage specifications Symbol Specifications 2 200 V 100/200 V Z (50 W only)

Motor structure

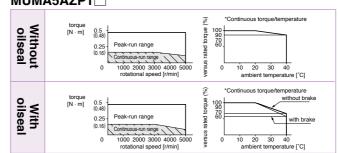
	Shaft	Holding	brake	Oil s	eal
Symbol	Key-way, center tap	without	with	without	with
S	•	•		•	
Т	•		•	•	

Rotary encoder specifications

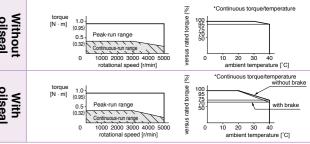
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

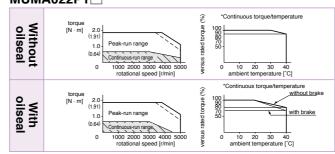
MUMA5AZP1



MUMA012P1

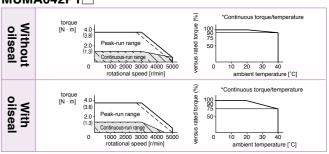


MUMA022P1

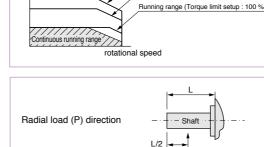


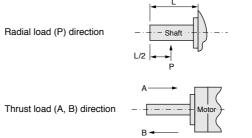
Running range (Torque limit setup: 200 %)

MUMA042P1



*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 %)





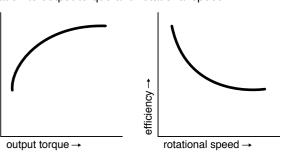
- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m = (load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds 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 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)

MINAS E Series Motors with Gear Reducer

Motor Types with Gear Reducer

Reduction	Мо	Type of		
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 0 1

Symbol Type Low inertia MUMA (100 to 400 W) Motor rated output Symbol Rated output Voltage specifications 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

4N 1/25 Motor structure Holding brake

100

200 400

For High

Motor types with gear reducer

ratio

1/5

1/9

Symbol Reduction

2N

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 efficiency	65 % to 85 %				
	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft				
Gear	Composition of gear	Planetary gear				
reducer	Mounting method	Flange mounting				
	Permissible moment of inertia of the load	10 times or smaller than reter moment of inertic of the mot				
	(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 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/s ² or less				

MUMA 50 W to 400 W

		_				[Unit			
				MUMA series	(Ultra low inertia)				
Motor outpu	t		50 W	100 W	200 W	400 W			
Motor mode		MUMA	5A□P1□	01□P1□	02□P1□	04□P1□			
Rotary encoder specifications		cations	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)			
Mana (kg)		Without brake	0.40	0.50	0.96	1.5			
Mass (kg)		With brake	0.60	0.70	1.36	1.9			
Connector/F	Plug specifi	ications	refer to Options, P.239, P.240.						

<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.

Motors with Gear Reducer

Table of Motor Specifications/ The Combination of the Driver and the Motor

Torque Characteristics

200 W

200 V

Table of Motor Specifications

	Motor					M	UMA with g	ear reduc	er				
Model	Output	Reduction	eduction Output		Max.		Peak max.	Moment of inertia (motor + reducer/converted to motor shaft				Permissible radial load	Permissible
		ratio		speed	speed	torque	torque	w/o brake	w/o brake w/ brake		w/ brake	raulai ioau	thrust 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

For dimensions, refer to P.235.

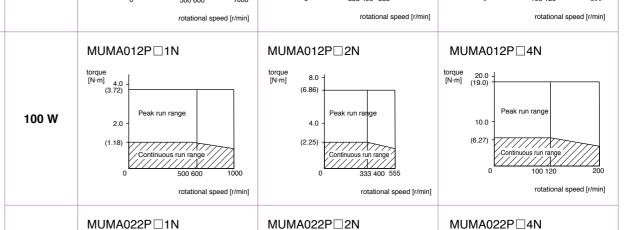
The Combination of the Driver and the Motor

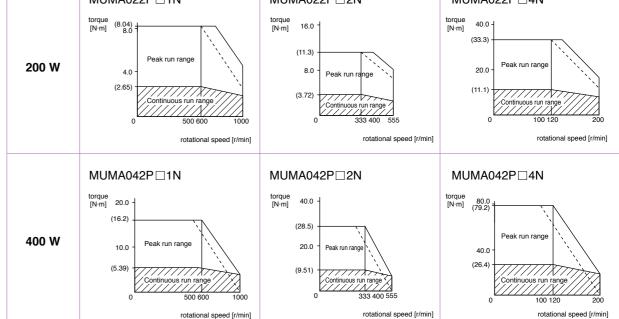
Combination w	ith driver	10	0 V	200 V			
Encoder	Motor	Part No. of motor	Single phase, 100 V	Part No. of motor	3-phase, 200 V	Single phase, 200 V	
Elicodei	output	with reducer	Part No. of driver with reduce		Part No. of driver	Part No. of driver	
	100 W	MUMA011P□□N	MKDET1110P	MUMA012P□□N	MKDET1505P	MKDET1505P	
2500 P/r	200 W	MUMA021P□□N	MLDET2110P	MUMA022P□□N	MKDET1310P	MLDET2210P	
Incremental	400 W	.,		MUMA042P□□N	MLDET2510P	MLDET2510P	
	400 00	_	_	MUMAU42PULIN	MLDET2310P	MILDETZSTOP	

For dimensions, refer to P.235.

For High Precision (MUMA Series 100 W to 400 W)

Supply voltage to driver		1/5	1/9	1/25	
	100 W	MUMA011P ☐ 1N torque 4.0	MUMA011P□2N torque 8.0 [N·m] (6.86) Peak run range (2.25)	MUMA011P ☐ 4N torque 20.0 [N·m] (19.0) Peak run range (6.27)	
100 V		Continuous run range 500 600 1000 rotational speed [r/min] MUMA021P□1N torque (8.04) (8.04) (8.04) (8.04)	Continuous run range 0 333 400 555 rotational speed [r/min] MUMA021P□2N torque [N-m] 16.0 -	Continuous run range 0 100 120 200 rotational speed [r/min] MUMA021P 4N torque [N-m] 40.0 -	





Dotted line represents the torque at 10 % less supply voltage.

Setup Support Software

MUMA series with Gear Reducer

[Unit: mm] (Detailed dimensions of shaft end) (LG) LR Encoder connecter (AMP) Motor connector (AMP) Brake connector (AMP) \Box LC LK

Motor Dimensions

2500 P/r Encoder

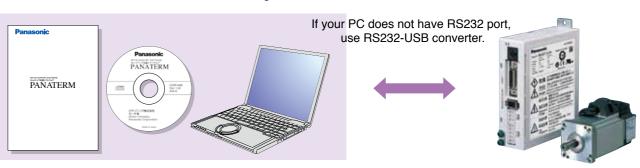
																[U	Init: mm]																														
Model	Motor output	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LK	(LG)	LE	Key way B×H×LD	Т																														
MUMA01□P□1N		1/5	192	92.5																																											
WOWAUTET ETT		173	223.5	124	32	32 20	52	50	60	60 12	10	M5	18	67.5		4×4×16	2.5																														
MUMA01□P□2N	100 W	1/9	192	92.5	32	20	52	32 30	00	12	10	(Depth: 12)	10	07.5		7X4X IU	2.5																														
WOWAUT	100 00	173	223.5	124																																											
MUMA01□P□4N		1/25	234.5	92.5	50	30	78	70	90	19	17	M6	26	92	3	6×6×22	3.5																														
WOWAUT		1/23	266	124	50	30	70	70	90	19	17	(Depth: 20)	20	92	3	0x0x22	3.5																														
MUMA02 P 1N		1/5	200.5	96	32	32 20	20	0 52	52	52 50	60	12	10	M5	18	72.5		4×4×16	2.5																												
WOWA02_I _ IIV		173	233.5	129	32 20								OL.		30	12		(Depth: 12)	10	12.5		424210	2.5																								
MUMA02 P 2N	200 W	1/9	235.5	96										89.5																																	
WOWA02_I2IV	200 W	173	268.5	129										09.5																																	
MUMA02 P 4N		1/25	246	96															100																												
WOWAOZLI L4N		1/23	279	129	50	30	78	70	90	19	17	M6	M6	26	100		6×6×22	3.5																													
MUMA042P□1N		1/5	263	123.5	30	30	70	70	90	19	17	(Depth: 20)	20			0x0x22	3.5																														
WOWA0421 LIN		173	296	156.5										89.5																																	
MUMA042P□2N	400 W	1/9	263	123.5										09.5																																	
WOWAU42FZN	400 W	179	296	156.5																																											
MUMA042P□4N		1/25	288.5	123.5	61	40	98	90	115	04 40	15 04 10	15 04 40	15 04 10	45 04 40	45 04 40	15 04 10	45 04 40	5 04 40	5 04 40	04 40	04 40	04 40		10	40	40	40	. M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	M8	35	104	5	0700	_
INICINIAU42F4IN		1/25	321.5	156.5	01	40	90	90	115	24	24 18	24 18	24 18	18	18 (Dep	18 (Depth: 20)		(Depth: 20)	(Depth: 20)	(Depth: 20)	(Depth: 20)	(Depth: 20) 35	ათ	104	5	8×7×30	4																				

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.

■ Can not use with A5 family.

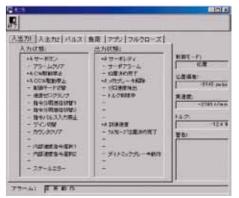
Analysis of Mechanical Operation Data

Frequency analysis

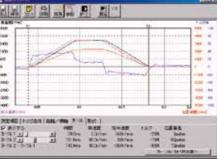
• Measures frequency characteristics of the machine, and displays Bode diagram.

HEROLDHICH - SPED. M.O.S. (HEROLD) HY. ADA-DED II MIGRA STAG 2. 第1周里4一/第1月至8 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

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

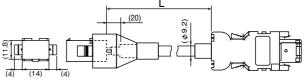
Encoder Cable

Part No. MFECA0 * * 0EAM

[Unit: mm]

[Unit: mm]

[Unit: mm]

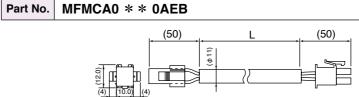


Title	Part No.	Manufacturer	L
Connector (Driver side)	3E206-0100KV	Sumitomo 3M	
Shell kit	3E306-3200-008	or equivalent	
Connector	172160-1	Tues Fleetrenies	
Connector Pin	170365-1	Tyco Electronics	
Cable	0.20 mm ² × 3P	Oki Electric Cable Co., Ltd.	

L (m)	Part No.
3	MFECA0030EAM
5	MFECA0050EAM
10	MFECA0100EAM
20	MFECA0200EAM

Motor Cable (ROBO-TOP_® 105 °C 600 V . DP)

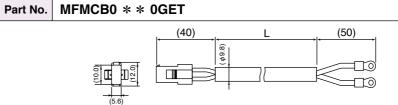
ROBO-TOP_® is a trade mark of DYDEN CORPORATION



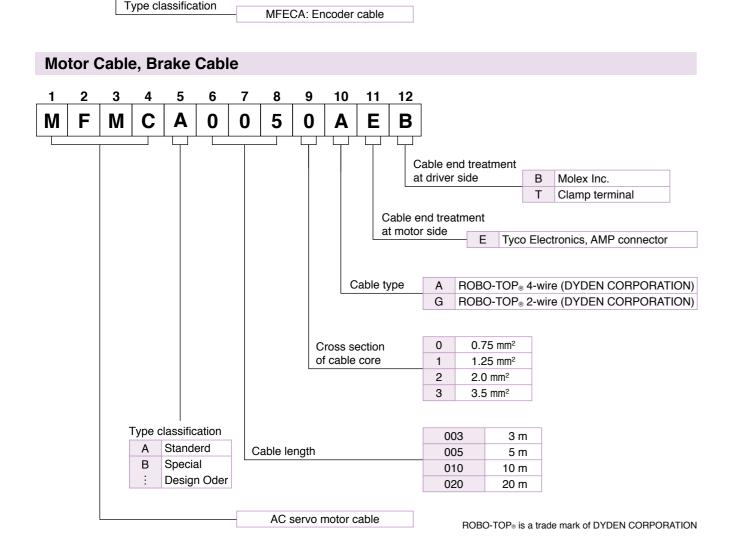
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172159-1	Tyco Electronics	3	MFMCA0030AEB
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCA0050AEB
Connector	5557-06R-210	Molex Inc	10	MFMCA0100AEB
Connector Pin	5556T	Wolex IIIC	20	MFMCA0200AEB
Cable	BOBO-TOP 600 V 0.75 mm ²	Daiden CoLtd.		

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	Tugo Floatronico	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 part No. Designation

Cable end treatment (Driver side)

3 m

5 m

10 m

20 m

M Connector (MUMA)

A Tyco Electronics, AMP connector

E PVC cable with shield by Oki Electric Cable Co., 0.20 mm² × 3P

Ε

Α

Cable end treatment

(Encoder side)

0050

0100

0200

0

Cable type

Cable length

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	WOIEX IIIC.	(10 pins)

Pin configuration of connector CN X1

1	,,					_/*
÷	10	9	8	7	6	
i	L1	(NC)	L2	(NC)	L3	i.
- [5	4	3	2	1	
i	Р	(NC)	В	(NC)	E	۱į.,



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.)

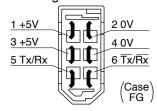
Parts composition

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	IVIOLEX 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)

	5 \ 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 V2	57026-5000	Molex Inc.	UL1007	
For Connector CN X3	57027-5000	Molex Inc.	UL1015	

<Remarks>

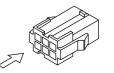
1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.

239

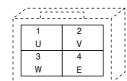
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

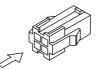
Pin configuration of encoder cable junction

_	,,,,,,,,,			
	1	2	3	-
	NC	TX/RX	TX/RX	1
	4	5	6	i
	+5V	0V	FG	Ι.

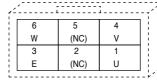


Pin configuration of motor power cable junction





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.

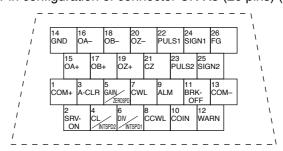
Connector Kit for External Peripheral Equipment

Part No.	DV0P0770

Parts composition

Title	Part No.	Number	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)

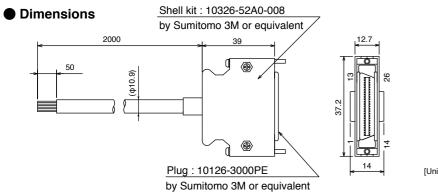


<Cautions>

- 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

Cable of 2 m is connected.



Interface Cable/

Communication Cable/ Console

Wiring table

_	J							
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)		·	

<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]

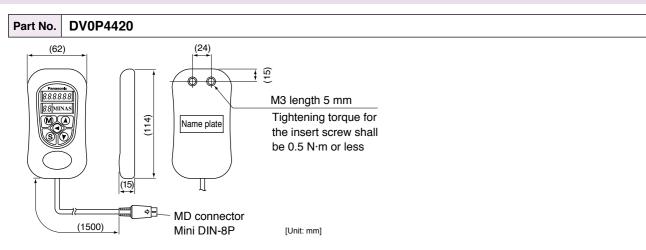
Communication Cable (For Connection with PC)

Part No. DV0P1960 2000 Mini-DIN 8P

MD connector

Console

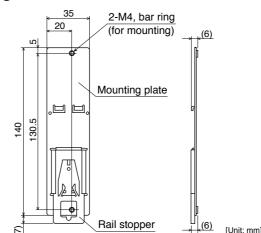
D-sub connector 9P



DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

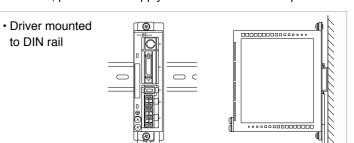


<Notes>

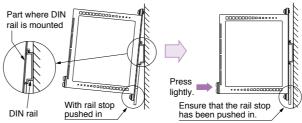
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<Cautions>

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.

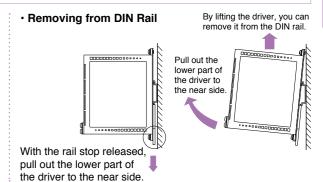


· How to Install



Hook the upper side of DIN rail mounting part on the DIN rail.

Press lightly the lower part of the main body of driver.

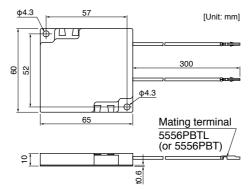


External Regenerative Resistor

			Specifi		
Part No.	Manufacturer's Part No.	Resistance		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>

Regenerative resistor gets very hot.

Take preventive measures for fire and burns. Avoid the installation near inflammable objects, and easily accessible place by hand.

Thermal fuse is installed for safety. The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation.

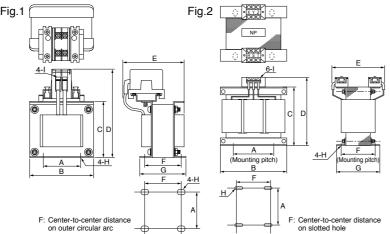
Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short)

List of Peripheral Components

E Series

Reactor

Frame symbol of driver	Power supply specifications Rated output		Part No.	Fig.	
	Single phase, 100 V	50 to 100 W	DV0P227	1	
MKDE	Single phase, 200 V	50 to 100 W	DV0P220	2	
	3-phase, 200 V	50 to 200 W			
	Single phase, 100 V	200 W	DV0P228	1	
MLDE	Single phase, 200 V	200 to 400 W	DV0P220	2	
	3-phase, 200 V	400 W			



Surge Absorber for Motor Brake

Jnit: mm]

	Part No.	A	В	С	D	E(Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
Fig. 4	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 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 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 Guide-lines 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.

■ Recommended components

Surge Absorber for Motor Brake

Motor	Surge absorber for motor brake					
Wiotoi	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 Swich, 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

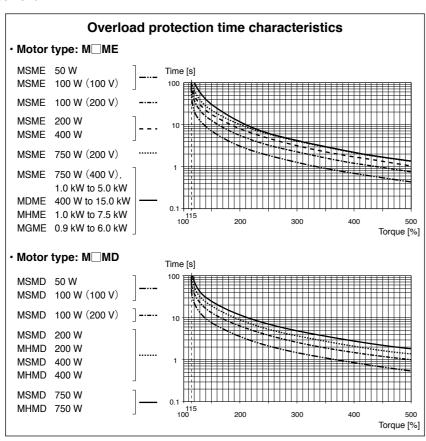
Observe the following conditions of (1) and (2) to make the system conform to UL508C (E164620).

- (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.

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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 11	ISO13849-1(PL d)(Cat.3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standards		UL508C (E164620)	UL1004-1 (E327868: 50 W to 750 W 6.0 kW to 15.0 kW) UL1004 (E327868: 400 W(400 V), 600 W(400 V), 750 W(400 V), 0.9 kW to 5.0 kW)
CSA Standards		C22.2 No.14	C22.2 No.100
Korea Radio Law (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.

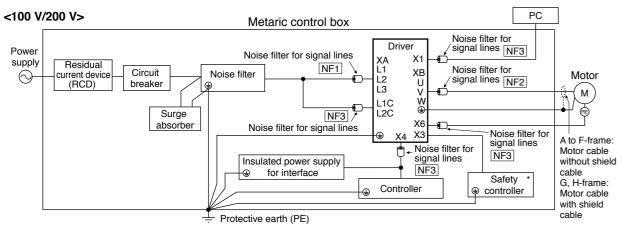
A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의

지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

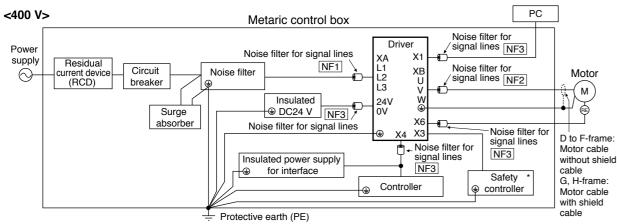
Installation Environment

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 to C-frame)	Single phase, 100 V ⁺¹⁰ % to 120 V ⁺¹⁰ % ⁻¹⁵ %	50/60 Hz
200 V type (A to D-frame)	Single/3-phase, 200 V ⁺¹⁰ / ₋₁₅ % to 240 V ⁺¹⁰ / ₋₁₅ %	50/60 Hz
200 V type (E to H-frame)	3-phase, 200 V ⁺¹⁰ % to 230 V ⁺¹⁰ % ₋₁₅ %	50/60 Hz
400 V type [Main power supply] (D to H-frame)	3-phase, 380 V ⁺¹⁰ / ₋₁₅ % to 480 V ⁺¹⁰ / ₋₁₅ %	50/60 Hz
400 V type [Control power supply] (D 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.

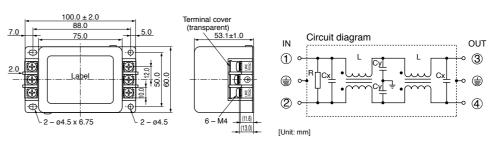
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

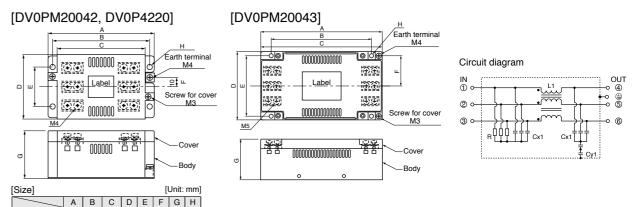
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

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 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 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

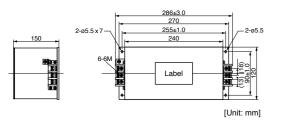
DV0P4220 145 135 125 70 50 10 52 5.5

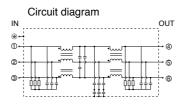
DV0PM20043 165 136 165 90 80 40 54 5.5

Eaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

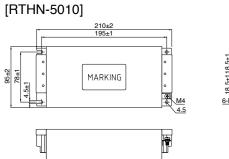
Manufacturer's Applicable driver Manufacturer part No. (frame) 3SUP-HL50-ER-6B F-frame Okaya Electric Ind.

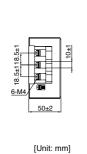


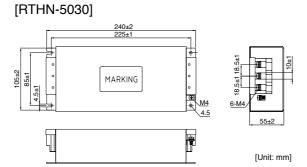


Recommended components

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A, B, C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E, F-frame	





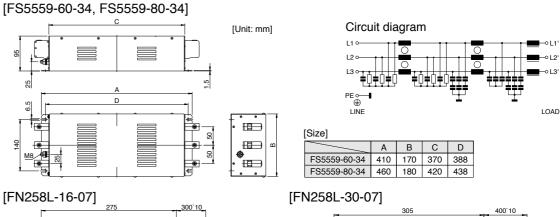


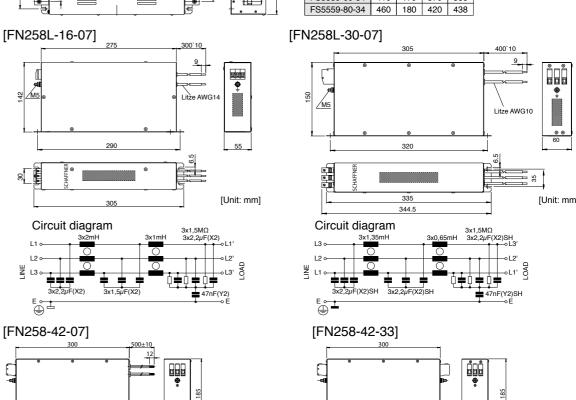
[RTHN-5050]

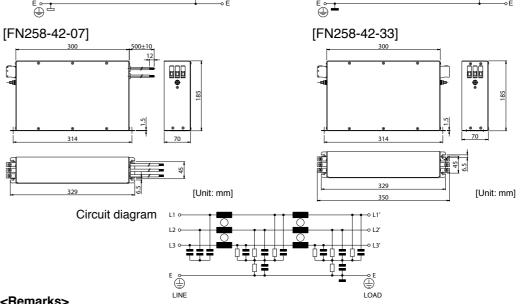
<Remarks>

- 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	3-phase 200 V	60	G-frame	
FS5559-80-34		80	H-frame	
FN258L-16-07		16	D, E-frame	Cohoffnor FMC Inc
FN258L-30-07	2 phase 400 V	30	F-frame	Schaffner EMC, Inc.
FN258-42-07	3-phase 400 V	42	G H frama	
FN258-42-33		42	G, H-frame	







<Remarks>

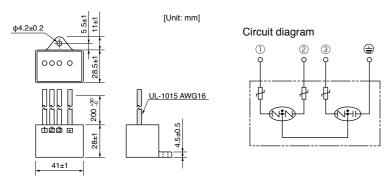
- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- · When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

Composition of Peripheral Equipments

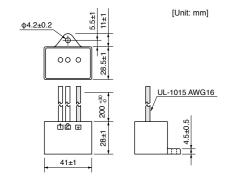
Surge Absorber

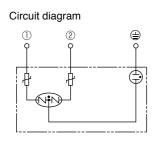
Provide a surge absorber for the primary side of noise filter.

Option part No.	Option part No. Voltage specifications for driver		narr 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.	· lor ariver		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	NF2	Motor cable	G, H	G, H	Recommended components	T400-61D	MICROMETALS	1
NF3	24 V Power cable Encoder cable Interface cable USB cable Control power cable	Common (to all frames)		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:	mm]		
Fait No.	Current	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)

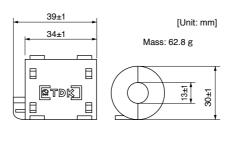
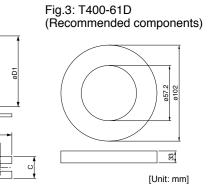


Fig.2: RJ8035, RJ8095 (Recommended components)



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 ((1)). 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".

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	Conforms to references					
	IEC61000-4-2	Electrostatic Discharge Immunity Test						
Motor and	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test						
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	1					
	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

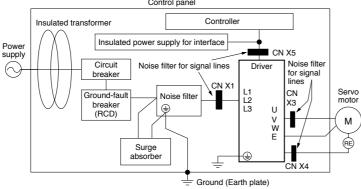
Composition of Peripheral Components

<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 $^{+10~\%}_{-15~\%}$	50/60 Hz
200 V system	Single phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50/60 Hz
200 V system	3-phase, 200 V ⁺¹⁰ / ₋₁₅ % to 240 V ⁺¹⁰ / ₋₁₅ %	50/60 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 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.

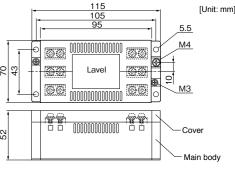
Noise Filter

When you install one noise filter in the power supply for multi axis application, consult with the manufacture of the filter.

Composition of Peripheral Components

Conformity to UL Standards

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 diogr	_04.2±	0.2	[Unit: mm]	Circuit diogr	_04.2±	0.2	[Unit: mm
Circuit diagr	3 ⊕ ♀ ♀	0000	UL-1015	Circuit diagr	am ⊕ ♀	0 0 0 28.5±1	UL-1015
		28#1	AWG16			28#1	AWG16
		41±1				41±1	1111

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged

Noise Filter for Signal Lines

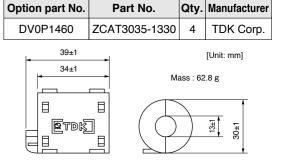
Install noise filters for signal lines to all cables (Power line, motor cable, encoder cable, interface cable)

<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.

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

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.



2. Enter operation pattern

Input the planned operation pattern that will contain [speed and rotation standard] or [absolute position

standard] with optional settings such as S-acceleration/de celeration.



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.



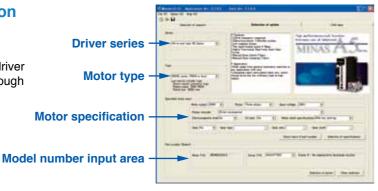
Option Selection Software for AC Servo Motor

We have prepared PC software to enable fast, easy, and correct option selection, a complicated job without the software.

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/i_e/25000/motor_fa_e/motor_fa_e.html

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Table 1: Basic unit Table 2: Auxiliary unit Derived unit Table 4: Unit combined with SI unit proper name SI unit Table 5: Prefix (Multiples of 10) Table 5: Prefix (Multiples of 10) Table 4: Unit combined unit Derived unit with Other derived unit proper name

Table1: Basic unit

Quantity	Name of unit	Symbol of unit
Length	meter	m
Weight	kilogram	kg
Time	second	s
Current	ampere	Α
Thermodynamic temperature	kelvin	K
Amount of substance	mol	mol
Luminous intensity	candela	cd

Table 2: Auxiliary unit

Quantity	Name of unit	Symbol of unit
Plane angle	radian	rad
Solid angle	steradian	sr

Table 3: Major derived unit with proper name

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	Т	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

Table 4: Unit combined with SI unit

Quantity	Name	Symbol of unit	
	minute	min	
Time	hour	h	
	day	d	
	degree	0	
Plane angle	minute	ı	
	second	n n	
Volume	liter	I, L	
Weight	ton	t	

Table 5: Prefix

Multiples powered	Pr	efix
to unit	Name	Symbol
10 ¹⁸	exa	E
10 ¹⁵	peta	Р
10 ¹²	tera	Т
10 ⁹	giga	G
10 ⁶	mega	М
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

Quantity	Symbol of conventional unit	Symbol of SI unit and compatible unit	Conversion value
Length	μ (micron)	μm	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	_	Same value
Mass	-	kg	Same value
Weight flow rate	kgf/s	_	Same value
Mass flow rate	-	kg/s	Same value
Specific weight	kgf/m ³	_	Same value
Density	_	kg/m ³	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	1 atm = 1.01325 x 10 ⁵ Pa
	mH₂O, mAq	Pa	1 mH ₂ O = 9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg (2)	1 mmHg = 133.322 Pa
	Torr	Pa	
Stress	kgf/mm²	Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
			=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
			= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m²	Pa or N/m ²	1 kgf/m ² = 9.80665 Pa = 9.80665 N/m
			1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf-m	J (joule)	1 kgf·m = 9.80665 J
	erg	J	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf-m/s	W (watt)	1 kgf-m/s = 9.80665 W
	PS	W	1 PS = 0.7355 kW
Viscosity	PP	Pa·s	1 P = 0.1 Pa·s

Major Compatible Unit

(1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.

St

K

deg

cal

cal/°C

cal/ (kgf·°C)

cal/K

cal/ (kgf·K)

cal

cal/kgf

cal/h

cal/ (h·m²)

cal/ (h·m·°C)

cal/ (h·m²·°C)

Oe

Mx

Gs,G

mm²/s

K (kelvin)

K (3)

J

J/K (3)

cal/ (kgf·K)(3)

J/K

J/(kg·K)

J/kg

W

W/m²

W/ $(m \cdot K)$ (3)

 $W/(m^2 \cdot K)^{(3)}$

A/m

Wb (weber)

T (tesla)

 10^{-2} St = 1 mm²/s

1 cal = 4.18605 J

1 cal = 4.18605 J

1 cal/°C = 4.18605 J/K

1 cal/K = 4.18605 J/K

1 cal/kgf = 4.18605 J/kg

1 kcal/h = 1.16279 W

1 Oe = $10^3 / (4\pi) \text{ A/m}$

 $1 \text{ Mx} = 10^{-8} \text{ Wb}$

 $1 \text{ Gs} = 10^{-4} \text{ T}$

1 cal/ (kgf· $^{\circ}$ C) = 4.18605 J/ (kg·K)

1 cal/ (kgf·K) = 4.18605 J/ (kg·K)

1 kcal/ (h·m²) = 1.16279 W/m² 1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)

1 kcal/ ($h \cdot m^2 \cdot C$) = 1.16279 W/ ($m^2 \cdot K$)

1 K = 1 K

1 deg = 1 K

(2) Applicable to scale or indication of blood pressure manometers.

(3) "°C" can be substituted for "K".

Kinetic viscosity

Thermodynamic temperature

Temperature interval

Amount of heat

Heat capacity

Specific heat, Specific heat capacity

Entropy

Specific entropy

Internal energy (Enthalpy)

Specific internal energy (Specific enthalpy)

Heat flux

Heat flux density

Thermal conductivity

Coefficient of thermal conductivity

Intensity of magnetic field

Magnetic flux

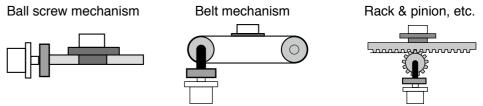
Magnetic flux density

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

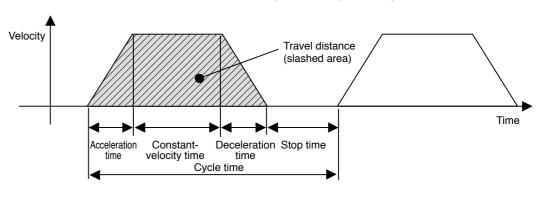
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<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

Description on the Items Related to Motor Selection

1. Torque

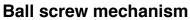
(1) Peak torque

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

$$Tf = \frac{P}{2\pi \eta} (\mu gW + F)$$

W: Weight [kg]

P:Lead [m]

F: External force [N]

η: Mechanical efficiency

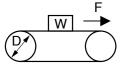
μ: Coefficient of friction

g: Acceleration of gravity 9.8[m/s²]

Belt mechanism

Traveling torque

$$Tf = \frac{D}{2\pi \eta} (\mu gW + F)$$



W: Weight [kg]

P : Pulley diameter [m] μ: Coefficient of friction

F: External force [N]

η: Mechanical efficiency

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] td: Deceleration time [s]

(Run time + Stop time)

Td: Deceleration torque [N·m]

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

General inertia 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 $\rho = 7.9 \times 10^3 \, [kg/m^3]$

Aluminum $\rho = 2.8 \times 10^{3} \, [kg/m^{3}]$

Brass $\rho = 8.5 \times 10^3 \, [kg/m^3]$

To Drive Ball Screw Mechanism

1. Example of motor selection for driving ball screw mechanism

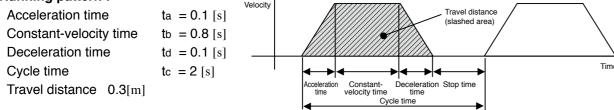
Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]

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 :



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

$$\begin{split} JL &= JC \,+\, JB = JC \,+\, \frac{1}{8}BW \,\times\, BD^2 \,+\, \frac{WA \cdot BP^2}{4\pi^2} \\ &= 0.00001 \,+\, (1.24 \times 0.02^2) \,/\, 8 \,+\, 10 \,\times\, 0.02^2 \,/\, 4\pi^2 \\ &= 1.73 \,\times\, 10^{-4} \,[\,k\,g \cdot m^2] \end{split}$$

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)

Vmax = 0.3 / 0.9 = 0.334 [m/s]

$$\frac{1}{2} \times \text{Acceleration time} \times \text{Vmax} + \text{Constant-velocity time} \times \text{Vmax} + \frac{1}{2} \times \text{Deceleration time} \times \text{Vmax} = \text{Travel distance}$$

$$\frac{1}{2} \times 0.1 \times \text{Vmax} + 0.8 \times \text{Vmax} + \frac{1}{2} \times 0.1 \times \text{Vmax} = 0.3$$

$$0.9 \times \text{Vmax} = 0.3$$

8. Calculation of motor velocity (N [r/min]) Ball screw lead per resolution: Bp = 0.02 [m]

$$N = 0.334 / 0.02 = 16.7 [r/s]$$

= 16.7 × 60 = 1002 [r/min] < 3000 [r/min] (Rated velocity of MSME 200W motor)

9. Calculation of torque

Traveling torque
$$T_f = \frac{BP}{2\pi B \, \eta} \ (\mu gWA + F) = \frac{0.02}{2\pi \ x \ 0.9} \ (0.1 \times 9.8 \times 10 + 0)$$

$$= 0.035 \ [\text{N·m}]$$
Acceleration torque
$$T_a = \frac{(\text{JL} + \text{JM}) \times 2\pi \text{N}[\text{r/s}]}{\text{Acceleration time [s]}} + \text{Traveling torque}$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$$

$$= 0.196 + 0.035 = 0.231 \ [\text{N·m}]$$

To Drive Ball Screw Mechanism **Example of Motor Selection**

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

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)

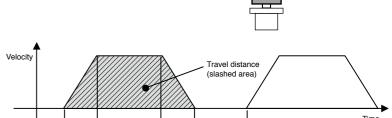
> Pulley diameter PD = 0.05[m]

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 $= JC + \frac{1}{4}WA \times PD^2 + \frac{1}{8}WP \times PD^2 \times 2$ $= 0 + \frac{1}{4} \times 2 \times 0.05^2 + \frac{1}{8} \times 0.5 \times 0.05^2 \times 2$

$$= 0.00156 = 15.6 \times 10^{-4} [\text{kg} \cdot \text{m}^2]$$

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

$$0.9 \times Vmax = 1$$

 $Vmax = 1 / 0.9 = 1.111[m/s]$

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
$$T_a = \frac{(JL + JM)\,\times\,2\pi N[r/s]}{\text{Acceleration time}[s]} + \text{Traveling torque}$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} + 0.061$$

$$= 0.751 + 0.061 = 0.812[N \cdot m]$$
Deceleration torque
$$T_d = \frac{(JL + JM)\,\times\,2\pi N[r/s]}{\text{Deceleration time}[s]} - \text{Traveling torque}$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} - 0.061$$

 $= 0.751 - 0.061 = 0.69[N \cdot m]$

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

Ν

mm

kg

V

mm

mm

mm

1. Driven mechanism and running data

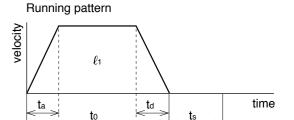
1) Travel distance of the work load per one cycle mm 2) Cycle time to:

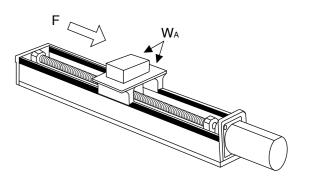
(Fill in items 3) and 4) if required.)

- 3) Acceleration time 4) Deceleration time td:
- 5) Stopping time ts: V: 6) Max. velocity mm/s
- 7) External force F:
- work load 9) Total weight of the work load and the table WA:
- 10) Power supply voltage

Positioning accuracy of the

- 11) Diameter of the ball screw
- 12) Total length of the ball
- 13) Lead of the ball screw





4)	Traveling direction	
	(horizontal, vertical etc.)	

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

r	
	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

1)	Travel distance of the work
	load per one cycle

nce of the work	
e cycle	

ℓ ₁ :	mm	15)	

Diameter of the pulle

Weight of the pulley

(or item 17) and 18))

	Moto	r side	Ball sc	rew side
ЭУ	D1:	mm	D ₂ :	mm
	W1:	kg	W2:	kg

(Fill in items 3) and 4) if required.)

3) Acceleration time	ta:

ta:	s	1

17)	Width	of the	pulley

L1:	mm

4)	Deceleration time

2) Cycle time

ts:	5	3

td:

10)	Weight of the helf

18) Material of the pulley	

W_M:

6) Max. velocity

7) External force

5) Stopping time

V:	mm/s
F·	

8) Positioning accuracy of the work load

Total weight of the work load and the table	WA:	kg

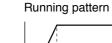
10) Power supply voltage

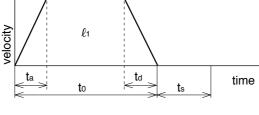
(horizontal, vertical etc.)

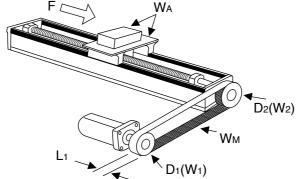
11) Diameter of the ball screw	mn

12) Total length of the ball screw

13)	Lead of the ball screw	mm
11)	Traveling direction	







2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

mm

٧

mm

Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection **II**: Belt drive

kg

mm

1. Driven mechanism and running data

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.)

) Acceleration time	ta:
) Deceleration time	td:

5)	Stopping time	ts:

) Max. velocity	V:	mm/s
-----------------	----	------

7) External force	F:	N
8) Positioning accuracy of the	±	mm

work load	±	mm

WA:

		I	
Power supp	lv voltana		
IU) I UWGI SUDD	iy voitage	I .	

1)	Weight of the belt	WM:	٤,
----	--------------------	-----	----

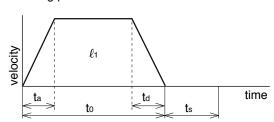
12) Diameter of the driving pulley D ₁ :	
-----------------------------------------------------	--

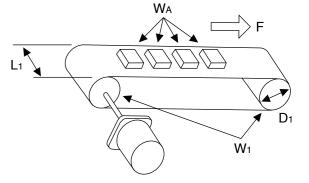
9) Total weight of the work load

13)

Total weight of the nulley	W ₁ :	kα
Total weight of the pulley	VV1:	kg

Running pattern





(or item 14) and 15))

14)	Width	٥f	the	nullev
14)	vviatri	ΟI	uie	pulley

5)	Material of the pulley	

L₁:

16)	Traveling direction	
10)	(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 V: Turntable drive

1. Driven mechanism and running data

1)

2) Cycle time

Travel distance of the work	dı:	deg
load per one cycle	ui.	ueg
load per one cycle		

Dimensions of the work load

Prism Cylinder mm a: a: mm b: mm b: mm mm c: mm

(Fill in items 3) and 4) if required.)

15) Number of work loads

kg

mm

 mm

٧

pcs

3) Acceleration time

4) Deceleration time td:

5) Stopping time

6) Max. rotational speed of the table deg/s V: r/s

7) Positioning accuracy of the deg work load

WA: 8) Weight of one work load

Driving radius of the center of gravity of the work R₁: mm

10) Diameter of the table

W₁: kg

Diameter of the table support

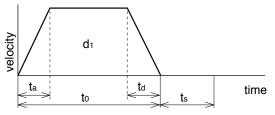
13) Power supply voltage

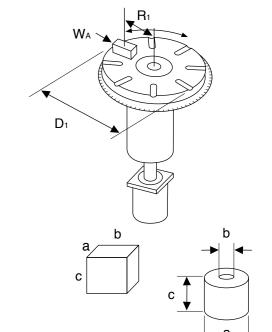
11) Mass of the table

T₁:

D₁:

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:	

Request Sheet for Motor Selection

Request for motor selection \mathbb{N} : Timing pulley + 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

 l ℓ1:	mn
to:	Ş

18) Width of the pulley

19) Material of the pulley

Traveling direction

(horizontal, vertical etc.)

20) Weight of the belt

Running pattern



Motor side

W_M:

Belt side

mm

kg

mm

kg

(Fill in items 3) and 4) if required.) (or item 18) and 19))

3) Acceleration time s 4) Deceleration time td: S

5) Stopping time ts:

6) Max. velocity V: mm/s F: 7) External force Ν

Positioning accuracy of the work load Total weight of the work

9) load and the table WA: kg 10) Power supply voltage ٧

11) Weight of motor side belt W_M: kg

	Moto	or side	Belt	t side
Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
Weight of the	W ₁ :	kg	W ₂ :	kg

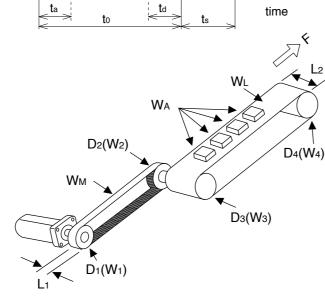
mm

Weight of the W₁: pulley

(or item 14) and 15))

Width of the 14) L1:

Material of the 15) pulley



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:

time

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

deg	16)	D

6)	Diameter of the pulley	[

17)	Weight of the pu	ılley

	Motor side		Turntable side	
lley	D ₂ :	mm	D3:	mm
y	W2:	kg	W3:	kg

(Fill in items 3) and 4) if required.) (or item 18) and 19))

3) Acceleration time	ta:	s
Deceleration time	td:	s



6) Max. rotational speed of the table	v:	deg/s
(or)	V:	r/s
7) Positioning accuracy of the	+	dea

7) work load	±	deg
8) Weight of one work load	Wa:	kg

9)	Driving radius of the center of gravity of the work	R ₁ :	mn
	or grainly or the morn		

10) Diameter of the table	D1:	mm
11) Mass of the table	W1:	kg

-		
10)	Diameter of the table	T1:
12)	support	11.

13) Power supply voltage	V
Power supply voltage	\

13) Tower supply voite	age				V
		(Prisn	n)		(Cylinder)
14) Dimension of the work load	a:		mm	a:	mm
	p:		mm	p:	mm
	c:		mm	c:	mm
15) Number of work lo	ads				pcs

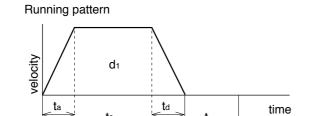
7)	Weight of the pulley	W2:	
		l	

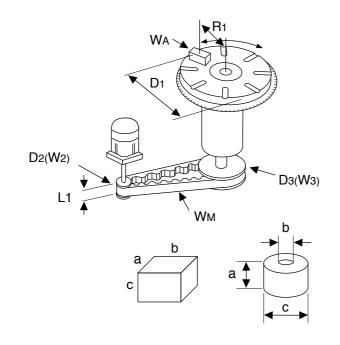
•	. ,				
)	Weight of the pulley	W2:	kg	W3:	
	(or item 10) and 10))				

18)	Width of the pulley	L1:

19)	Material of the pulley	
,		

20) Weight of the belt	W _M :	k
------------------------	------------------	---





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 Sheet for Motor Selection

Request for motor selection VII: Roller feed drive

pcs

 mm

kg

1. Driven mechanism and running data

9) Number of rollers

10) Power supply voltage

11) Diameter of the roller

12) Mass of the roller

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	Running pattern
2)	Cycle time	to:	s	/
	(Fill in items 3) and 4) if required.)			λί (γε locity) (γ
3)	Acceleration time	ta:	s	ta
4)	Deceleration time	td:	s	to
5)	Stopping time	ts:	S	
6)	Max. velocity	v:	mm/s	
7)	External pulling force	F:	N	8
8)	Positioning accuracy of the work load	±	mm	

D₁:

W₁:

13)	Width of the rolle
-----	--------------------

L₁:

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

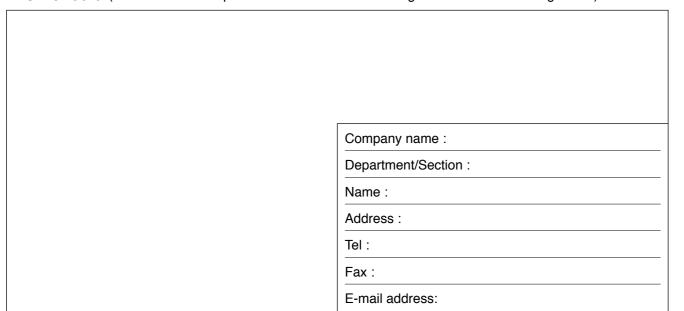
mpany name :
partment/Section :
me:
dress:
:
x :
nail address:
1

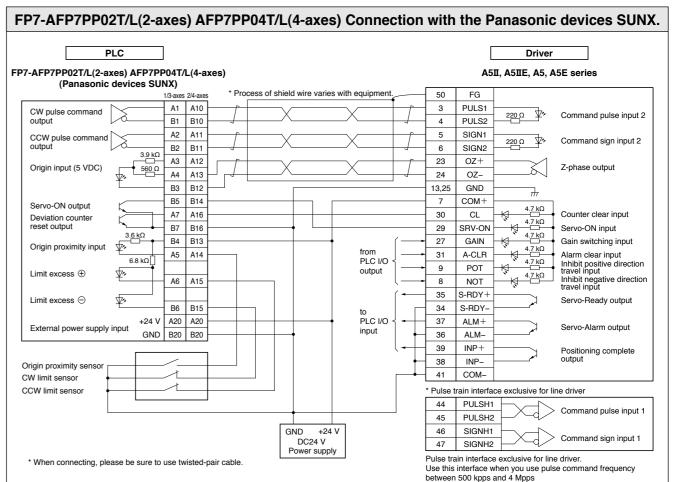
Request for motor selection III: Driving with Rack & Pinion

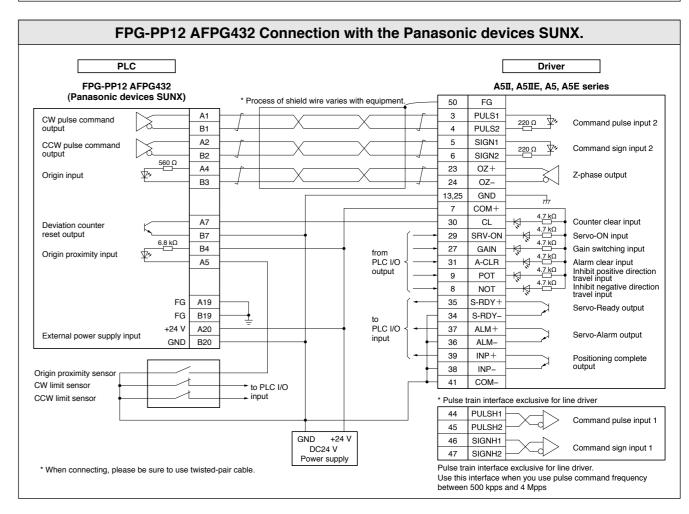
1. Driven mechanism and running data Travel distance of the work load 1) per one cycle mm 2) Cycle time to: (Fill in items 3) and 4) if required.) Running pattern 3) Acceleration time ta: 4) Deceleration time **t**d: ℓ1 5) Stopping time ts: ta **t**d time to V: 6) Max. velocity mm/s F: 7) External force Ν Positioning accuracy of the 8) work load mm 9) Total weight of the work load WA: kg $\mathcal{M}_{\mathcal{M}}$ 10) Power supply voltage ٧ D₃: mm 11) Diameter of the pinion 12) Mass of the pinion W3: kg

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Traveling direction (horizontal, vertical, etc.)







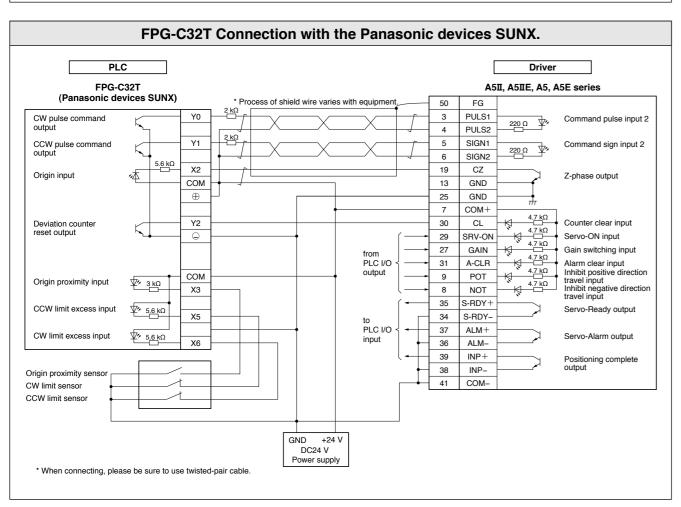
CCW pulse co

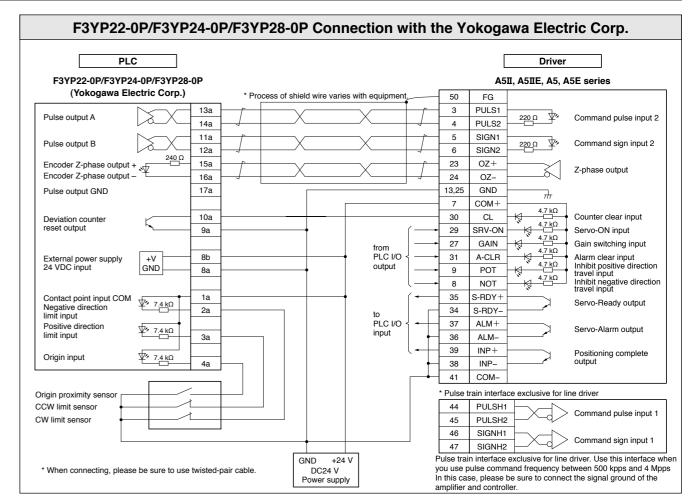
Origin input

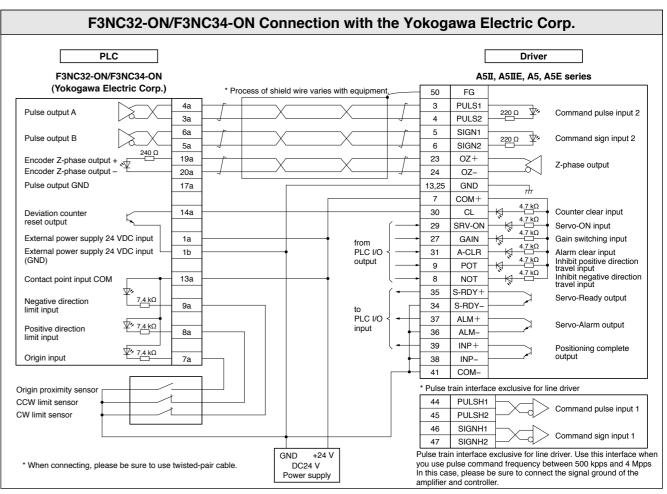
reset output

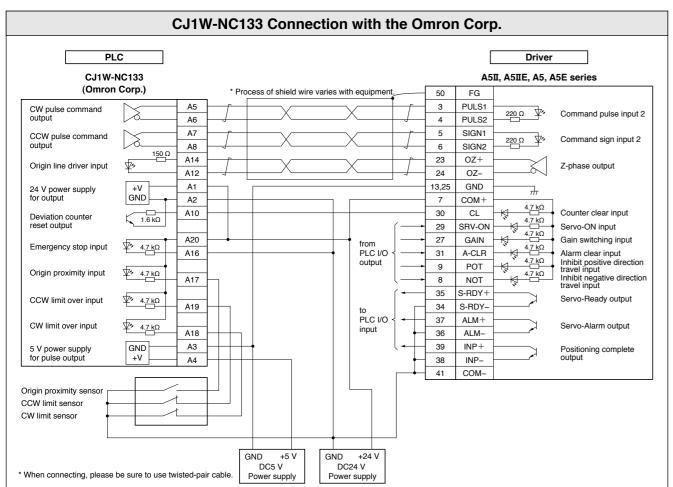
CW limit sensor

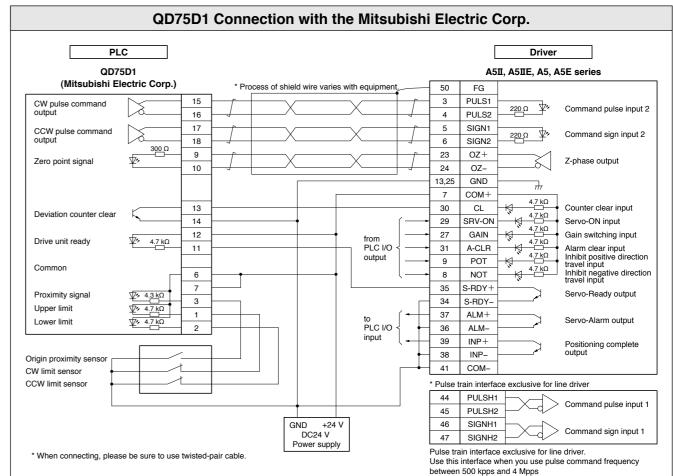
output

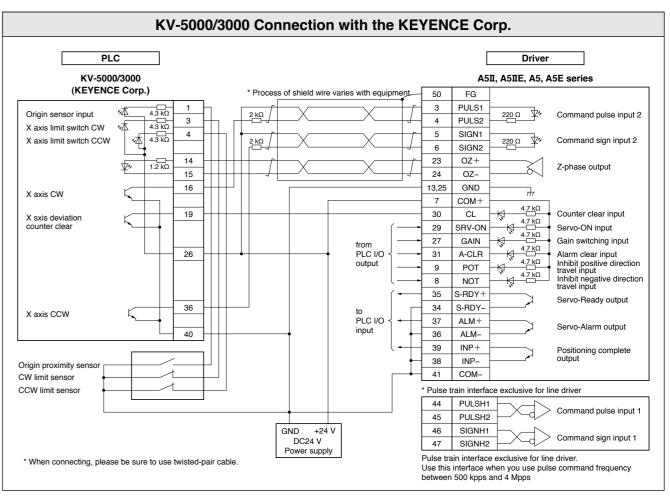






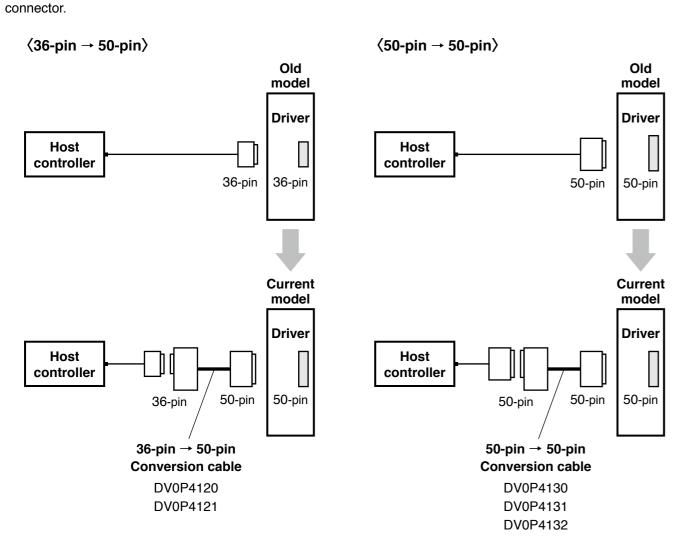






Driver and Controller

For easier replacement of old driver (MINAS X/XX/V series) with A5II, A5 series, use the interface conversion



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	P.200
	Position control	DV0P4130	P.281
V series (50-pin)	Velocity control	DV0P4131	P.201
	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	Positionning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positionning 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	Positionning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	34	Positionning 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.

Replacing Old Model Servo Driver with MINAS A5II, A5 series

		DV0P4130			DV0P4131		
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
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	Cov ever daver minor input		
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			
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			
39	39	Positionning 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	Positionning complete output (–)	COIN-	34	Speed arrival output (–)	AT-SPEED-	
41	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-	
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 40	B. t	65	NC 40	B. t	O.D.	
48	48	B-phase output	OB+	48	B-phase output	OB+	
49	49	B-phase output	OB-	49	B-phase output	OB-	
50	50	Frame ground	FG	50	Frame ground	FG	

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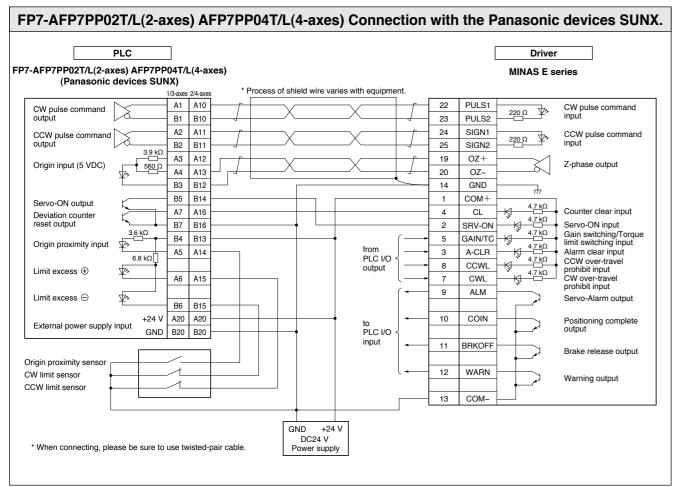
* "NC"	is	no	connect.
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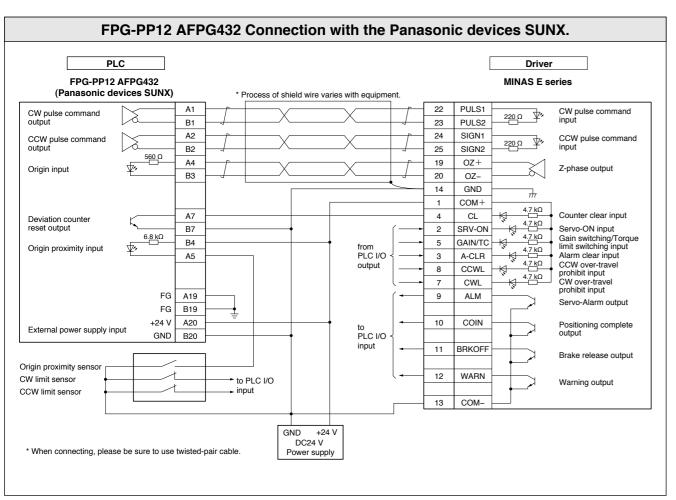
A5 Family

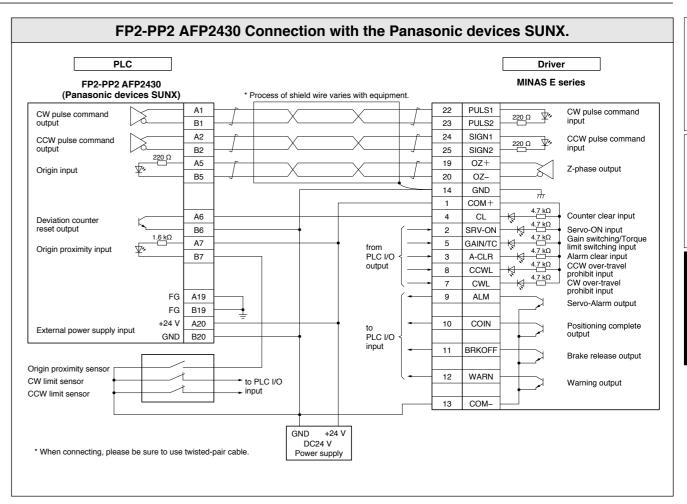
Connection Between Driver and Controller

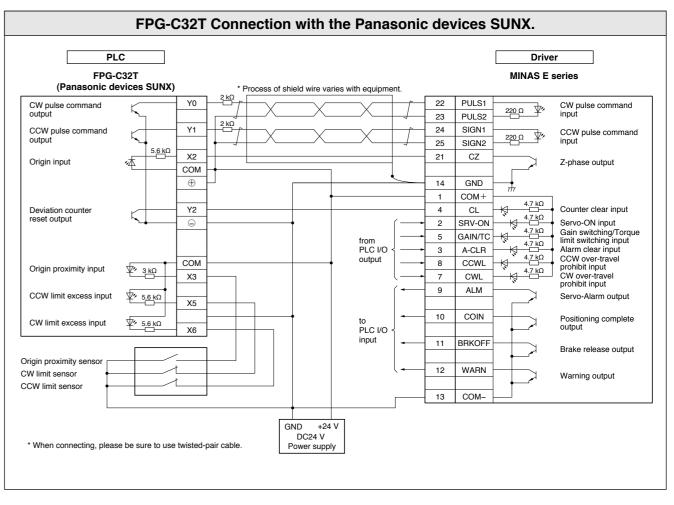
		DV0P4132	
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol
1	8	CW over-travel inhibit input	CWL
2	9	CCW over-travel inhibit input	CCWL
3	NC		
4	NC		
5	NC		
6	NC		
7	7	Power supply for control signal (+)	COM+
8	NC		
9	NC		
10	NC		
11	11	External brake release signal	BRK-OFF+
12	12	Zero-speed detection output signal	ZSP
13	13	Torque in-limit signal output	TLC
14	NC		
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		
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

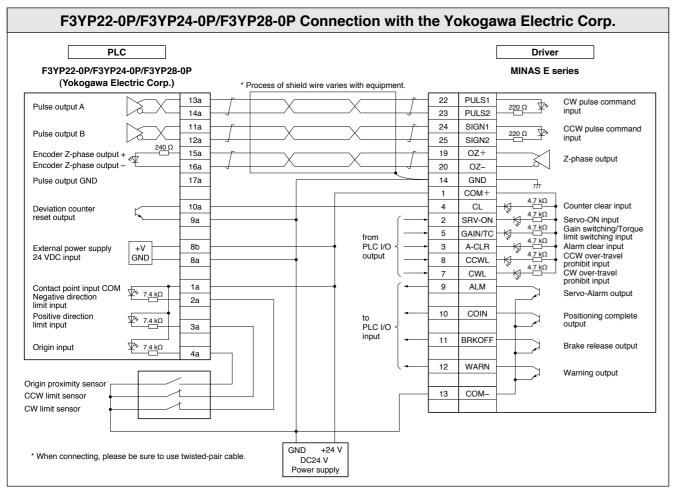
^{* &}quot;NC" is no connect.

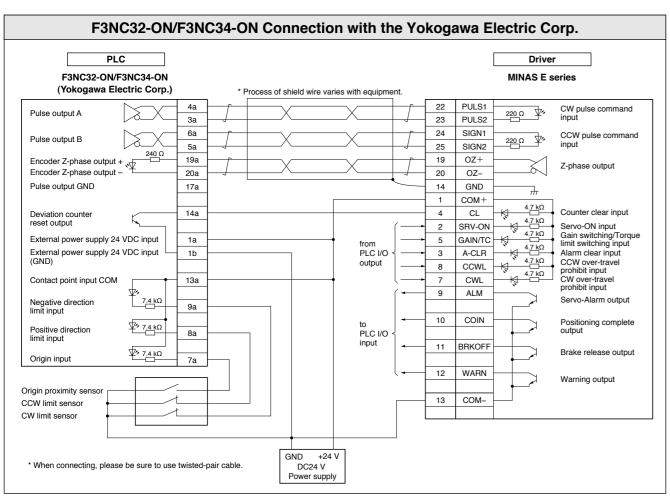


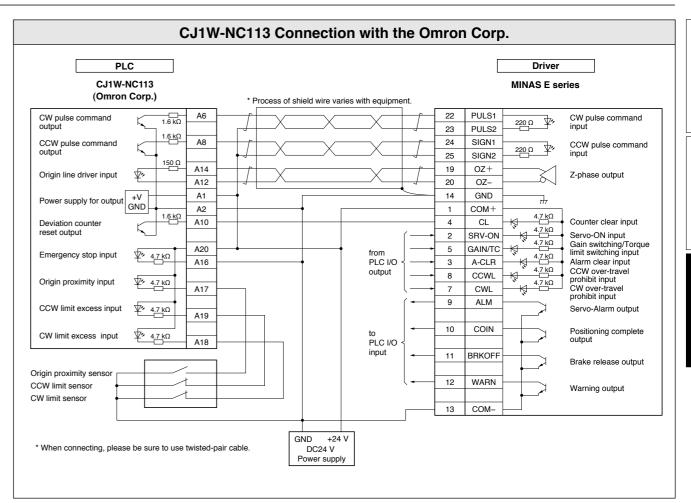


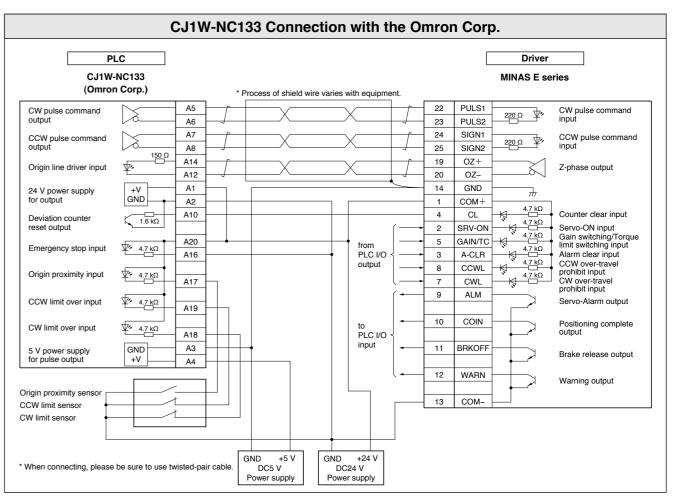




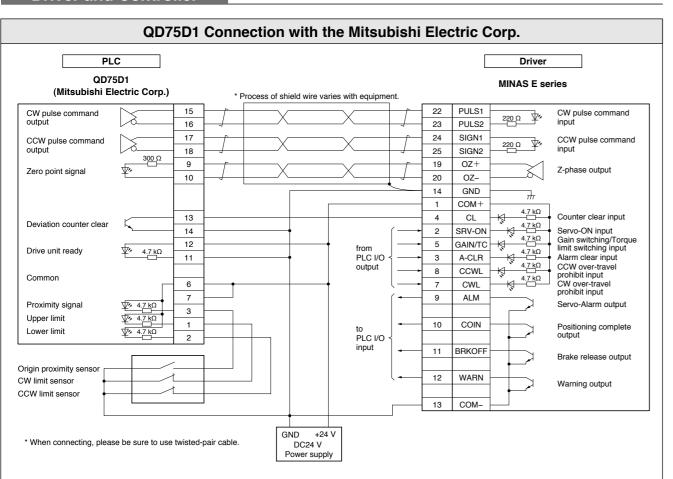








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[Panasonic Sales Office of Motors]

(June.01.2013)

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		Bangkok	73 Soi Ladkrabang 30 Ladkrabang Ladkrabang Bangkok 10520	+66-2181-2299
	Premier Automation Center Co.,Ltd. (*Distributors)			+66-2181-2288
			Website: http://www.premier-ac.co.th	
Thailand			3 Soi Charoenrat 10, Charoenrat Road., Bangkhlo, Bangkhorlaem, Bangkok	+66-2291-9933
	Plenty Island (Thai) Co.,Ltd. (*Distributors)	Bangkok	10120	+66-2291-2065
	,		Website: http://www.plenty.co.th	
		Bangkok	12/349 Moo 15, Bangkaew, Bangplee, Samutprakam 10540	+66-2397-9577
	Seng Charoen Muang Co.,Ltd. (*Distributors)			+66-2361-8207
			Website: http://www.sengscm.com	
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