	A Safety Precautions
• Important	Notes on exporting this product or equipment containing this product;
If the end-	user or application of this product is related to military affairs or weapons, its export may be controlled by "Foreign
Exchange Japan.	and Foreign Trade Control Law" of Japan where export license will be required before product can be exported from
	ict is designed and manufactured for use in General Purpose Industrial Equipment and it is not intended to be used in
-	t or system that may cause personal injury or death.
	ng such as installation, wiring, operation, maintenance and etc., should be performed by qualified personnel only.
	ounting screws with an adequate torque by taking into consideration strength of the screws and the characteristics of
-	which the product will be mounted. Over tightening can damage the screw and/or material; under tightening can
	: apply 2.7 N·m – 3.3 N·m torque when tightening steel screw (M5) to steel surface.
Install safe	ety equipment to prevent serious accidents or loss that is expected in case of failure of this product.
	before using this product under such special conditions and environments as nuclear energy control, aerospace,
transporta	tion, medical equipment, various safety equipments or equipments which require a lesser air contamination.
-	been making the best effort to ensure the highest quality of our products, however, some applications with
	ally large external noise disturbance and static electricity, or failure in input power, wiring and components may result
in unexpe	cted action. It is highly recommended that you make a fail-safe design and secure the safety in the operative range.
If the moto	or shaft is not electrically grounded, it may cause an electrolytic corrosion to the bearing, depending on the condition
of the mac required.	chine and its mounting environment, and may result in the bearing noise. Checking and verification by customer is
	this product depending on its content may generate smoke of about one cigarette. Take this into consideration when ation of the machine is clean room related.
	careful when using the product in an environment with high concentrations of sulfur or sulfuric gases, as sulfuration or disconnection from the chip resistor or a poor contact connection.
• Do not inp	ut a supply voltage which significantly exceeds the rated range to the power supply of this product. Failure to heed n may lead to damage of the internal parts, causing smoke and/or fire and other troubles.
• The user is characteris	s responsible for matching between machine and components in terms of configuration, dimensions, life expectancy, stics, when installing the machine or changing specification of the machine. The user is also responsible for with applicable laws and regulations.
	rer's warranty will be invalid if the product has been used outside its stated specifications.
	nt parts are subject to minor change to improve performance.
Read and	observe the instruction manual to ensure correct use of the product.
	Consult to the dealer from whom you have purchased this product for details of repair work.
Repair	When the product is incorporated to the machine you have purchased, consult to the machine manufacturer or its dealer
URL	Electric data of this product (Instruction Manual, CAD data) can be download from the following web site; http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors
Contact to :	



Automotive & Industrial Systems Company, Smart Factory Solutions Business Division,

Motor Business Unit

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

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

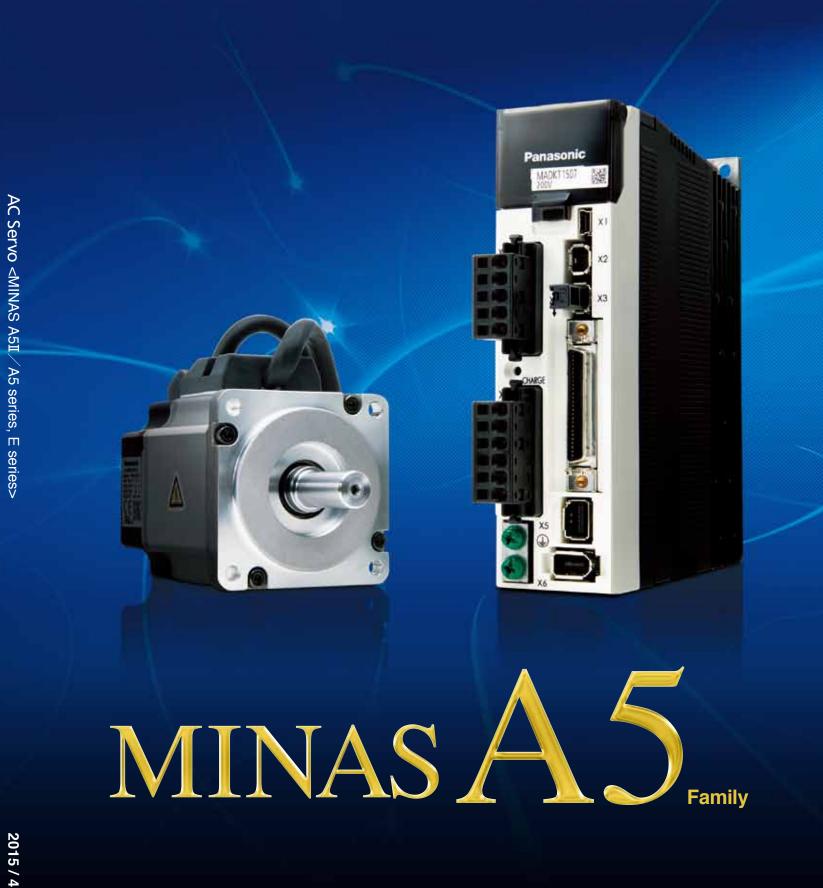
This product is for industrial equipment. Don't use this product at general household.

• Printed colors may be slightly different from the actual products.

Specifications and design of the products are subject to change without notice for the product improvement.

Panasonic

Panasonic



AC Servo MINAS A5 II / A5 series MINAS E series Catalog

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

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)







Rated output: 50 W to 400 W

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

High-speed communication "Realtime Express" support model



Synchronized motion and precise CP control

Standard Ethernet cable^{*2} using

Two-degree-of-freedom control system

up to 32 axes with 100 Mbps communication

A5IINI

Capacity of applying Linear motor: Compatible with 15.0 kW rotary AC servo motor Position, Speed and Thrust control Automatic setup function & Automatic magnetic pole detection function

Two-degree-of-freedom control system





10 W. 20 W. 30 W

- Synchronized motion and precise CP control
- up to 32 axes with 100 Mbps communication
- Standard Ethernet cable² using Two-degree-of-freedom control system

Linear motor and DD motor control type



Capacity of applying Linear motor:

Position, Speed, Thrust control

setup

Compatible with 15.0 kW rotary AC servo motor





EtherCAT communication driver type

D series

50 W to 15.0 kW Supports PC-based controller Passed Official EtherCAT Conformance Test

Drastically reduced setup time by automatic Standard Ethernet cable^{*2} using Automatic magnetic pole detection function will Two-degree-of-freedom control system

detect the magnetic pole position of the linear motor.







Contents



	A5II, A5IIE, A5, A5E series	
A M M O D A	5II Series Features 5 Family Features lotor Line-up lodel Designation verall Wiring river and List of pplicable Peripheral Equipments able of Part Numbers and Options	····· 15 ···· 16 ···· 17 ···· 17
Driver	Driver Specifications A5II, A5 series (All-in-one type) A5IIE, A5E series (Position control type) Wiring Diagram Wiring to the Connector XA, XB, XC, XD and terminal block Safety Function Wiring to the Connector X3 Control Circuit Diagram Wiring to the Connector X4 Wiring to the Connector X4 Wiring to the Connector X5 Wiring to the Connector X5 Wiring to the Connector X6 Dimensions of Driver	31 33 36 37 39 40
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General-purpose RS485 communication AE-LINK support type

Special Order Product



Positioning is possible by built-in NC function Can connect up to 31 axes Standard Ethernet cable² using Two-degree-of-freedom control system AE-LINK is a registered trade mark of Asahi Engineering

Quicker, Wiser and Friendlier A5I series

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

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



 The above is a measure based on our test environment



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





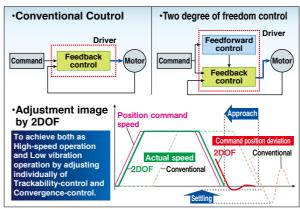


Realizes guick and accurate movement. Fast response & High-precision positioning

Adopted New Algorithm

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

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



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

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

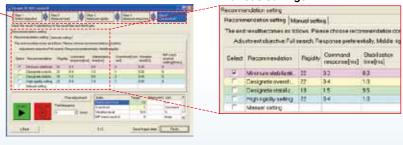
Greatly improved "operability", easy-to-use software "PANATERM".

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

· Fit gain adjustment window

in only 3 processes (1)(2) (3) condition result measurement setting Load Stiffness Command response



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.

feedback control, mutual adjustment was required. In 2DOF adopted A5I series, feedforward and feedback controls are adjusted separately, meaning "Approach" reaction to the given command, and the "Settling" can be adjusted separately.

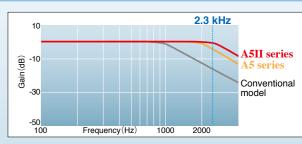
Realized low vibration and reduction of settling time. Realizes tact speed of the electronic component mounting machines, improves the accuracy of surface treatment of metal processing machines, allows for smooth operation and High speed industrial robots.

Waveform of PANATERM (the case of the ball screw: 0 ms / waveform measured settling time)

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

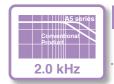
Newly developed feature "Fit Gain" maximizes the characteristics of A5II series. And adaptive notch filter function can reduce the vibration that occurs when the rigidity of the device is low, you can set and adjust automatically the best variety of gain.

Automatically proposes various settings



4



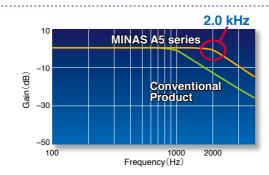


2.0 kHz Frequency Response

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.



A5II

<At incremental type>

Conventional

A4 Series

2500 p/r

A5

5II. A5 Series

1048576 p/r

[1.04 million pulses]

A5 A5E



Example application Machine tools, textile machinery, etc.

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

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.

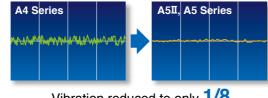


Low Cogging Torque (Excluding MSMD, MHMD, MDME 11.0 kW. 15.0 kW) A5II A5 A5IIE

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 cogging 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 A5∏

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.)









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.

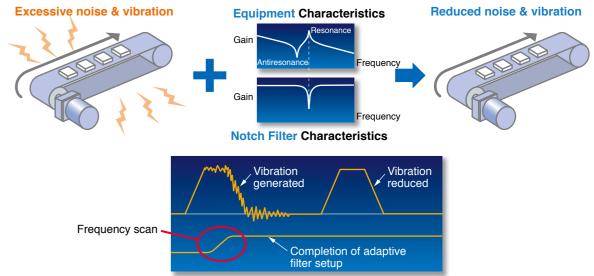
This makes it possible to perform simple optimal adjustments simply by selecting the mode and stiffness.

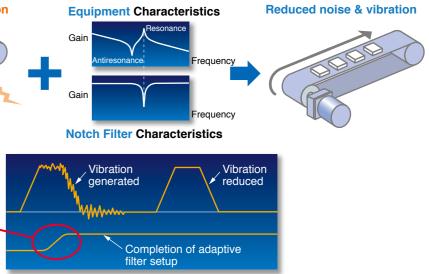


Manual/Auto Notch Filters

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

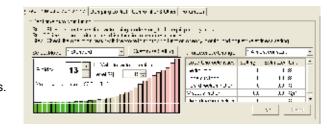






ne Auto-Gain Tuning A5II A5 A5IE

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



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

during operation. The A5I, A5 series features an industry-largest total of four notch filters with setup frequencies of 50 Hz to 5000 Hz. This approach enables depth adjustment within this frequency range. (Two of the filters share the auto set-up.)

A5II

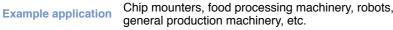
A5

A5 Fami



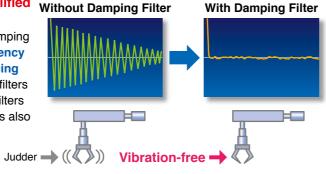
Manual/Auto Damping Filter

A5II A5



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

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





Motion Simulation

A5II A5

Example application General production machinery, etc.

Equipped with a simplified machine simulation function.

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

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light



New Structure/ Innovative Core/ Innovative Encoder A5II A5 A5IIE

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





Featuring significantly reduced weight and a more compact motor

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



Weiaht

Reduction





Compliance with EU safety standards.

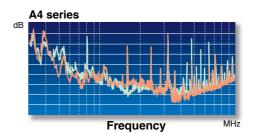
Features non-software-based independent redundant circuitry for motor power isolation. independent redundant circuitry for motor power isolation. This obviates the need for magnetic contactors to isolate



Low noise Example application

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

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

7





- 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.





PANATERM Set-up Support Software

A5II A5 A5IIE

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.

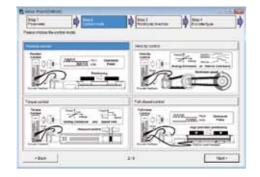


Setup Wizard

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.

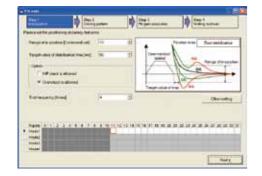


- 1) Select the adjustment method
- 2) Load measurement
- 3) Adjust gain to meet your needs by confirming results. (for A5I, A5IE)



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.





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.

frame	Value :	UNP	Dete
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Note: The life span prediction value should be considered as a guide only.

Encoder Temperature Monitor

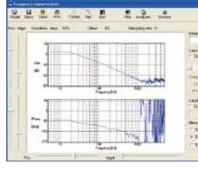
The Encoder Temperature Monitor is a new function capable of real-time measurement of the interior temperature of the encoder, something that has been difficult to achieve in the past. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided with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

Other New Function

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

Frequency characteristics measurement function

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



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



<CAUTION>

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

ardware 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		
Display	Resolution	1024 × 768pix or more (desirably 1024 × 768)		
Dispidy	Number of colors	24bit colors (TrueColor) or more		

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Trial run

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





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Significant increase of measuring objects Multi-functional waveform graphic

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

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



Command Control Mode A5I 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 A5I A5

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

SEMI F47

A5II A5 A5IIE A5E

- 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.
- 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.

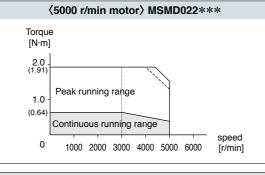
Regenerative Energy A5II A5 A5IIE A5IIE Discharge A5III A5 A5IIE A5IIE

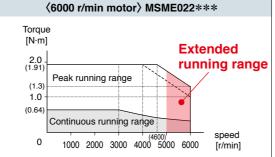
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- Frame A, B, G and frame H model drivers do not contain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

6000-rpm capability (build to order item) ASII A5 ASIIE ASE

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

[Comparison of new and conventional 200 W]





Gear head

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

use it as follows:

- MSME \rightarrow 6000 r/min
- MSMD]
- MISMD MHMD → 5000 r/min

Dynamic Braking	A5II	A5	A5IIE	A5E	
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- 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.

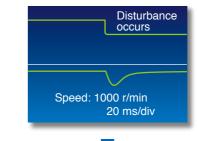
Parameter Initialization A5II A5 A5IIE A5

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

Disturbance Observer A5II A5 A5IIE A5E

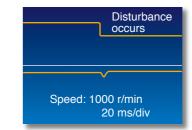
By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

Disturbance observer function not in effect





Disturbance observer function in effect



Torque Feed Forward A5II A5 A5IE A5I

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	A5II	A5	A5IIE	A5E
Componeation	_		_	

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

A5 Family

3-Step Gain

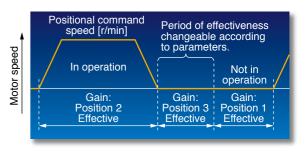
A5II A5 A5IE A5

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

This chooses appropriate gain tunings at both stopping and running.

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

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



Inertia Ratio Conversion A5II A5 A5IIE A5

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 combination.

It ends up quicker response of your system.

Input/Output 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.

A5II A5

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.

MINAS	A5 Family			
eatur				
pplicable ir	nternational safet	ty standards	A5II A5 A5IE A5E	Applicable External Sca
CE	c FL [®] us			Applicable External Scale
		Driver	(A5II, A5 series) (A5IE, A5E series) Motor	Parallel Type (AB-phase)
	EMC Directives	EN55011 EN61000-6-2 IEC61800-3	_	
	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5	
C Directives	Machinery Directives Functional	ISO13849-1(PL d) (Cat. 3) EN61508(SIL2) EN62061(SILCL 2) EN61800 5 2(STO)	_	Serial Type (Incremental)
	safety *1	EN61800-5-2(STO) IEC61326-3-1		
Standards		UL508C (E164620)	UL1004-1, UL1004-6 (E327868)	
A Standard		C22.2 No.14	C22.2 No.100	
dio Waves / outh Korea)		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	_	
uropaischen Electromagr nderwriters L	netic Compatibility	Panasonic Testir Panasonic Serv Panasonic Marl	rective 2004/108/EC, article 9(2) Ig Centre rice Europe, a division of keting Europe GmbH , 22525 Hamburg, F.R. Germany	
When export this product, follow statutory provisions of the destination country. A5IE and A5E series doesn't correspond to the functional safety standard. Information related to the Korea Radio Law			Serial Type (Absolute)	
he user and	dealer should be awa	nercial broadcasting radio wave ger are of this fact.	erator not designed for home use.	
이 기기는 업 [」] 또는 사용자는	무용 방송통신기자재) 구용(A 급) 전자파적합기 - 이 점을 주의하시기 비 하는 것을 목적으로 합	라며, 가정외의		

(대상기종 : Servo Driver)

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

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

		A5II A5		
	Model No.	Resolution [µs]	Maximum Speed (m/s) ^{·3}	
	_	Maximum s 4 × multiplica	speed after ation: 4 Mpps	
	SR75	0.01 to 1	3.3	
	SR85	0.01 to 1	3.3	
	SL700-PL101RP/RHP	0.1	10	
	SL710-PL101RP/RHP	0.1	10	
	BF1	0.001/0.01	0.4/1.8	
ı	PSLH	0.1	6	
	LIC2197P/LIC2199P	0.05/0.1	10	
	LIC4193P/LIC4195P LIC4197P/LIC4199P	0.001 /0.005 /0.01	10	
	SVAP	0.05	2.5	
	SAP	0.05	2.5	
-	GAP	0.05	2.5	
	LAP	0.1	2	
	SR77	0.01 to 1	3.3	
	SR87	0.01 to 1	3.3	
	AT573A	0.05	2.5	
	ST778A(L)	0.1	5	
		0.001	0.4	
	RESOLUTE	0.05	20	
		0.1	40	

MINASA5 Family **Motor Line-up**

Motor Line-up

Motor		μp			Rated	Rotary	encoder								
	Mo	tor	Voltage	Rated output (kW)	rotational speed (Max. speed) (r/min)	20-bit incremental	17-bit absolute	Enclosure (*1)	Features	Applications					
	MSMD		100 V 200 V	0.05 0.1 0.2 0.4	3000 (5000)	0	0	IP65	Leadwire type Small capacity Suitable for high						
		2,	200 V	0.75	3000 (4500)				 speed application Suitable for all applications 	Bonder Semiconductor production equipment					
Low inertia			100 V 200 V	0.05 0.1 0.2 0.4	3000	0	0	IP67	 Small capacity Suitable for high speed application 	Packing machines etc					
nertia		2	200 V	0.75	(6000)	Ŭ	Ŭ		Suitable for all applications						
	MSME		400 V	0.75	3000				Middle capacity Suitable for the	SMT machines					
		me l	200 V	1.0 1.5 2.0 3.0	(5000)	0	0	IP65 ^(*2)	machines directly coupled with ball screw and high	Food machines LCD					
			400 V	4.0 5.0	3000				stiffness and high repetitive applica- tion	production equipment etc					
			400 V	0.4 0.6	(4500)				lion	eic					
						-			1.0 1.5	2000					
				2.0 3.0 4.0 5.0	(3000)			1005(*2)	Middle capacity Suitable for low	Conveyors Robots					
	MDME		200 V 400 V	7.5 (*3)	1500 (3000)	0	0	IP65 ^(*2)	stiffness machines with belt driven	Machine tool etc					
Mid				11.0 ^(*3)	1500 (2000)										
Middle inertia	MFME (Flat type) (*3)	6	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	0	200 V 400 V			0	0	IP65 ^(*2)	Middle capacity Suitable for low speed and high torque application	Conveyors Robots Textile machines etc					
	MHMD		100 V 200 V	0.2 0.4	3000 (5000)	0	0	IP65	Leadwire type Small capacity Suitable for low	Conveyors Robots					
High			200 V	0.75	3000 (4500)				stiffness machines with belt driven	etc					
High inertia	МНМЕ	1	200 V 400 V	1.01.52.03.04.05.0	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines with belt driven, and large load	Conveyors Robots LCD manu- facturing aquinment					
(*4)	Expont for a		oonne et-	7.5 (*3) r. (*2) IP67 mo	1500 (3000)	ilable (*0)		notor la end	moment of inertia	equipment etc					

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

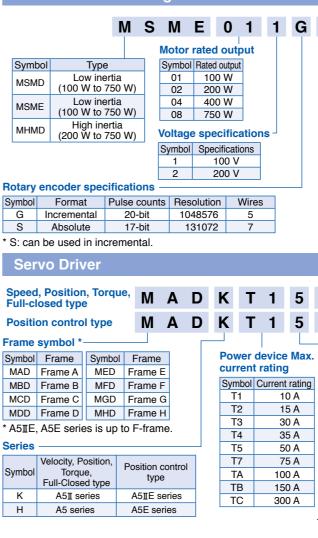
* See the P.21 to P.28, driver and motor combination.

MINAS A5 Family **Model Designation**

Servo Motor

Symbol MSMD		tia (50 \	Type N to 750 W)				specific	ations		cificatio			
MSME		· ·	W to 5.0 kW				MSME	(50 W 10	Shaft	[200 V]				1
MDME	Middle ir	nertia (4	00 W to 15.	0 kW)			Symbol			Key-way,	Holding	j brake	UI	seal
MFME	Middle ir	nertia (1	.5 kW to 4.5	5 kW)			Symbol	Round		center tap	without	with	without	with
MGME	Middle ir	nertia (0	.9 kW to 6.0) kW)			A							
MHMD	High ine	rtia (200) W to 750 \	V)			В							
MHME	High ine	rtia (1.0	kW to 7.5 k	:W)			С					•		•
					_		D		•					
	ated outp						P		•		•	•	•	
-		-	Rated output		specification	S	Q		•			-		
5A	50 W	25	2.5 kW	-	Specifications		R							
01	100 W	30	3.0 kW	1	100 V		S			•	•		•	
02	200 W	40	4.0 kW	2	200 V 400 V		U					•	•	
04	400 W	45 50	4.5 kW	4	400 V 100 V/200 V		V			ě	•			ě
06 08	600 W 750 W	50 60	5.0 kW 6.0 kW	Z	common		MOME	(750 W)	[400 V].	1060	to 15.0			
08	0.9 kW	75	7.5 kW		(50 W only)			· ·	, MGME			K VV),		
10	1.0 kW	C1	11.0 kW						Shaft		ding bra	10	Oil se	al
15	1.5 kW	C5	15.0 kW				Symbol	Round					ithout	with
20	2.0 kW						С		Ttey-wa				linout	•
							D	•		-				•
lotary	encoder s	specifi	cations –				G							•
Symbol	Format	: Pu	Ise counts	Resolution	n Wires		Н							•
G	Incremen		20-bit	1048576		D	esign orde	er						
S	Absolute	e	17-bit	131072	7	S	Symbol		Spe	cification	IS			
S: can	be used i	n incre	mental.				C IP65	5 motor						
							1 IP67	motor (N	MSMD, M	HMD: IP6	65)			
Mot	or with	redu	uction g	ear										

Symbol	Format	Pulse counts	Resolution	Wires						
G	Incremental	20-bit	1048576	5						
S	Absolute	17-bit	131072	7						
* S: can be used in incremental										



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

	_			
_	Gear	ratio	gear	wne
	acai	rauo,	your	ypc.

O. make at	Gear	Mo	otor ou	Gear		
Symbol	reduction ratio	100	200	400	750	type
1N	1/5					
2N	1/9					For high
ЗN	1/15					accuracy
4N	1/25					

* MHMD 100 W is not prepared.

Motor structure

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

0	5	*	*	*		
0	5	Ε	*	*		
		Lc)nly j	oositi	on contro	l
'					C	u
					5	ŝγ

Supply voltage specifications									
Symbol	Specifications								
1	Single phase, 100 V								
3	3-phase, 200 V								
4	3-phase, 400 V								
5	Single/3-phase, 200 V								

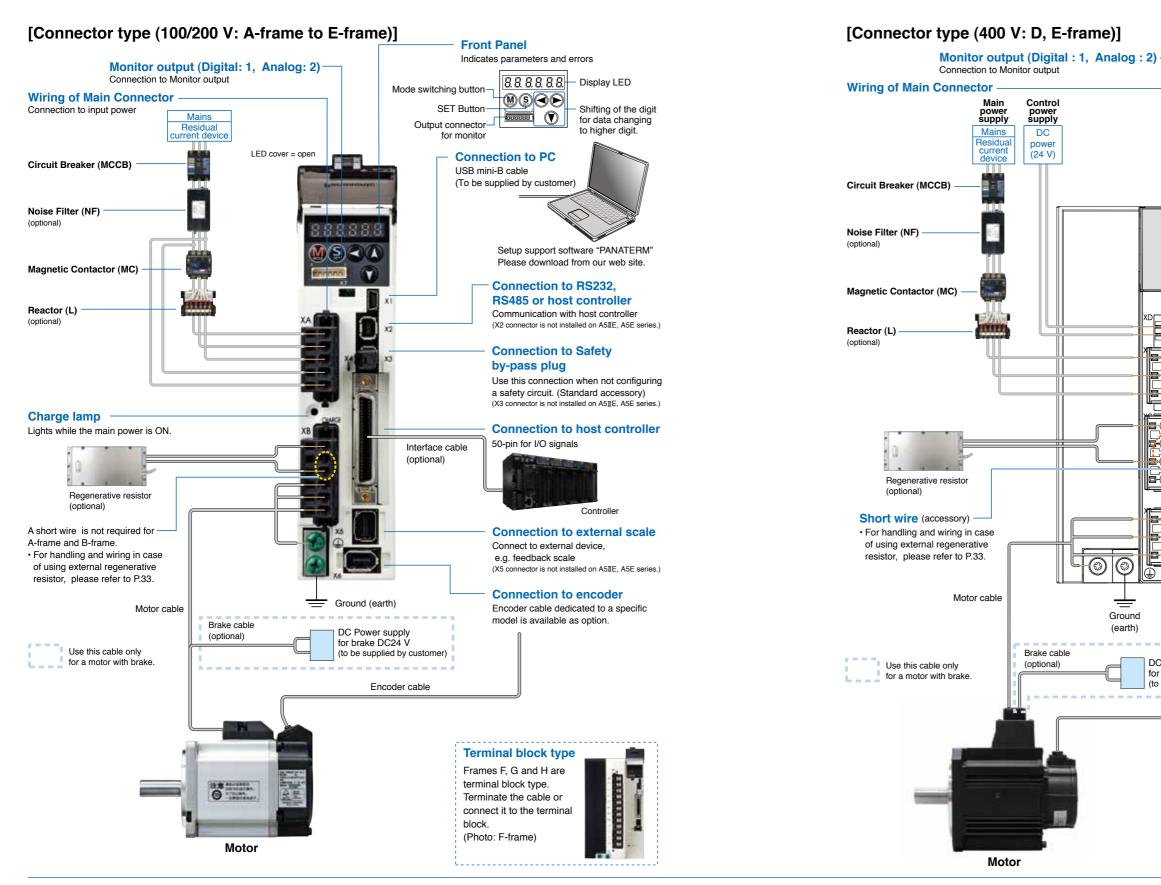
С	Current detector current rating									
S	Symbol	Specifications		Symbol	Specifications					
Γ	05	5 A		40	40 A					
	07	7.5 A		64	64 A					
Γ	10	10 A		90	90 A					
	12	12 A		A2	120 A					
Г	20	20 A		B4	240 A					
	30	30 A								

Special specifications

Special specifications

E Series

Information

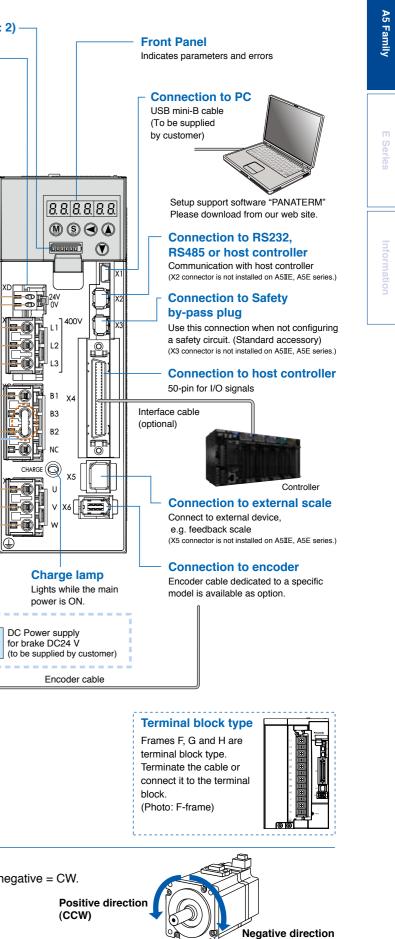


<Caution>

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

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

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



(CW)

Driver and List of Applicable Peripheral Equipments

Driver	Applicable motor	Voltage *1	Rated output	Required Power (at the (rated load)	Circuit breaker (rated current)	Noise filter (Single phase 3-phase	Surge absorber (Single phase 3-phase	Noise filter for signal	Rated operating current of magnetic (contactor Contact configuration *2	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *4	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *5	Diameter and withstand voltage of brake cable			
	MSME	Single phase,	50 W to 100 W	approx. 0.4 kVA		DV0P4170	DV0P4190		_				DIOOR					
/ADH /ADK	MSMD MHMD	100 V Single/ 3-phase,	50 W to 200 W	approx. 0.5 kVA		DV0P4170	DV0P4190											
		200 V Single	200 W	approx.	10 A	DV0PM20042 DV0P4170	DV0P1450 DV0P4190			0.75 mm²/				0.75 mm²/ AWG18 600 VAC	0.28 mm ² to 0.75 mm ² /			
/BDH /BDK	MSME MSMD	100 V Single/		0.5 kVA approx.		DV0P4170	DV0P4190		20 A (3P+1a)	AWG18 600 VAC					AWG22 to AWG18			
	MHMD	3-phase, 200 V Single	400 W	0.9 kVA		DV0PM20042	DV0P1450			or more			0.75 mm²/		or more	100 VAC or more		
NCDH	MSME MSMD	100 V Single/	400 W	approx. 0.9 kVA		DV0PM20042	DV0P4190							AWG18 600 VAC				
NCDK	MHMD	3-phase, 200 V	750 W	approx. 1.3 kVA	15 A	D TOT MEDO IE									or more			
	MDME MHME	1.0 kW approx 1.8 kW	approx. 1.8 kVA															
	MGME	Single/	0.9 kW	approx. 1.8 kVA			DV0P4190	DV0P1460			Con		Con					
	MSME	3-phase, 200 V	1.0 kW	approx. 1.8 kVA	20 A	DV0P4220	DV0P1450	51011100	30 A (3P+1a)		Connection to exclusive connector		nectio					
	MHME MDME MFME		1.5 kW	approx. 2.3 kVA	2077							on to exc		Connection to exclusive connector				
NDDH	MSME MDME		400 W	approx. 0.9 kVA							lusive		lusive					
NDDK	MDME		600 W	approx. 1.2 kVA							WG14 0V VAC	conn	conn	e con		conr		
	MSME MSME		750 W	approx. 1.6 kVA					20 A (3P+1a)	2.0 mm²/ AWG14 600V VAC or more		0.52 mm²/	lector	2.0 mm²/				
	MDME	3-phase	1.0 kW	approx. 1.8 kVA	10 A	FN258L-16-07 (Recommended) component	DV0PM20050					AWG20 100 VAC		AWG14 600V VAC				
	MHME MGME MSME		0.9 kW	1.0 KVA		(component)						or more		or more				
	MDME MFME MHME		1.5 kW	approx. 2.3 kVA											0.75 mm²/ AWG18 100 VAC or more			
	MDME MSME MHME	3-phase, 200 V	2.0 kW	approx. 3.3 kVA	30 A	DV0PM20043	DV0P1450	DV0P1460 RJ8035 (Recommended)	60 A (3P+1a)			0.75 mm²/ AWG18 600 VAC						
MEDH	MFME	200 V	2.5 kW	approx. 3.8 kVA				(component) *6	(51 + 14)			or more						
MEDK	MSME MDME MHME	3-phase, 400 V	2.0 kW	approx. 3.3 kVA	15 A	FN258L-16-07 (Recommended component)	DV0PM20050	DV0P1460	30 A (3P+1a)			0.52 mm ² / AWG20 100 VAC						
	MFME		2.5 kW	approx. 3.8 kVA		(component)						or more						
	MGME MDME		2.0 kW	approx. 3.8 kVA					60 A									
	MHME MSME MGME MDME		3.0 kW	approx. 4.5 kVA				DV0P1460 RJ8035 (Recommended) °6	(3P+1a)	,	11 mm or smaller	0.75 mm²/	11 mm or smaller					
	MHME MSME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA approx.	50 A	DV0P3410	DV0P1450		ended) nent		/L] / <u>d5.3</u> Terminal block M5	AWG18 600 VAC or more	$\frac{\Box}{\phi 5.3}$ Terminal					
	MFME MGME MDME		4.5 kW	6.8 kVA									block M5					
MFDH	MHME MSME		5.0 kW	7.5 kVA						3.5 mm²/ AWG12				3.5 mm²/ AWG12				
MFDK	MGME		2.0 kW	approx. 3.8 kVA						600 VAC or more	10 mm or smaller			600 VAC or more				
	MSME MDME MGME MHME		3.0 kW	approx. 4.5 kVA									7 mm or smaller	or more				
	MHME MSME MDME MHME	3-phase, 400 V	4.0 kW	approx. 6.0 kVA	30 A	FN258L-30-07 (Recommended) component	DV0PM20050	DV0P1460	60 A (3P+1a)			0.75 mm²/ AWG18 100 VAC						
	MFME		4.5 kW	approx. 6.8 kVA							Terminal block	or more	Terminal block					
	MGME MSME MDME		5.0 kW	approx. 7.5 kVA							M4		M3					
	MHME MDME		7.5 kW	approx. 11 kVA								0.75 mm ² /						
	MGME	3-phase, 200 V	6.0 kW	approx. 9.0 kVA	60 A	FS5559-60-34 (Recommended)	DV0P1450		100 A (3P+1a)		11 mm or smaller	AWG18 600 VAC	10 mm or smaller					
MGDH	MHME	200 V	7.5 kW	approx. 11 kVA		(component)			(01 +14)	5.3 mm ² / AWG10	$\langle \rho \rangle$	or more	$\left(\right)$	13.3 mm ² /				
MGDK	MDME	0 ===	7.5 kW	approx. 11 kVA		FN258-42-07 or			60 t	600 VAC or more	<u>φ5.3</u>	0.75 mm ² /	<u>φ5.3</u>	AWG6 600 VAC				
	MGME	3-phase, 400 V	6.0 kW	approx. 9.0 kVA	30 A	FN258-42-33 (Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)		Terminal block	AWG18 100 VAC	Terminal block	or more				
	MHME		7.5 kW	approx. 11 kVA approx.		(component)		RJ8095 (Recommended component)			M5	or more	M5					
		3-phase,	11 kW	17 kVA	100 A	FS5559-80-34	DV0D4 (50	T400-61D	150 A		16 mm or	0.75 mm²/ AWG18	10 mm or	21.1 mm ² /				
MHDH		200 V	15 kW	approx. 22 kVA	125 A	(Recommended) component)	DV0P1450	(recommended) component *6	(3P+1a)	13.3 mm ² /	smaller	600 VAC or more	smaller	AWG4 600 VAC or more				
MHDH MHDK	MDME	3-phase, 400 V	11 kW	approx. 17 kVA	50 A	FN258-42-07 or FN258-42-33	DV0PM20050		100 A (3P+1a)	AWG6 600 VAC or more *3	/L] <u>d6.4</u> Terminal block	0.75 mm²/ AWG18 100 VAC	/L] <u></u> Terminal block	13.3 mm ² / AWG6 600 VAC or more 21.1 mm ² /				
			15 kW	approx. 22 kVA	60 A	(Recommended) component			(_, , u/		M6	or more	M4	AWG4 600 VAC or more				

*1 Select peripheral equipments for single/3phase common specification according to the power source. *2 For the external dynamic brake resistor, use the magnetic contactor with the same rating as that for the main circuit. *3 When use the external regenerative resistor of the option (DV0PM20058, DV0PM20059), use the cable with the same diameter

- as the main circuit cable.
- *4 For the ground screw, use the same crimp terminal as that for the main circuit terminal block.
- cable.

*6 Use thses products to suit an international standard.

Related page

I	Noise filter	. P.250	"Comp	osition of P
;	Surge absorber	. P.253	"Comp	osition of P
	Noise filter for signal	. P.254	"Comp	osition of P
I	Motor/brake connector	.P.186	, P.187	"Specificati

 About circuit breaker and magnetic contactor and the circuit breaker should conform to IEC Standards and UL recognized (Listed and ()) marked). the maximum input voltage of the product.

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

<Remarks>

- condition).
- Terminal block and protective earth terminals
- Use a copper conductor cables with temperature rating of 75 °C or higher.
- 8 mm to 9 mm.

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

Driver
Terminal name
L1, L2, L3, L1C, L2C, B1, B2, B3, NC, U, V,
24V、0V
L1, L2, L3, B1, B2, B3, NC, U, V, W
L1C, L2C, 24V, 0V, DB1, DB2, DB3, DB4, N
L1, L2, L3, B1, B2, NC, U, V, W
L1C, L2C, 24V, 0V, DB1, DB2
L1, L2, L3, B1, B2, NC, U, V, W

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

	Gro	und screw	Connector to host controller (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>

may generate heat (smoking, firing).

<Remarks>

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

A5 Family

*5 The diameter of the ground cable and the external dynamic brake resistor cable must be equal to, or larger than that of the motor

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

Peripheral Equipments" Peripheral Equipments" Peripheral Equipments" tions of Motor connector"

To comply to EC Directives, install a circuit break er between the power and the noise filter without fail, Suitable for use on a circuit capable of delivering not more than 5000 Arms symmetrical amperes, below

· Select a circuit breaker and noise filter which match to the capacity of power supply (including a load

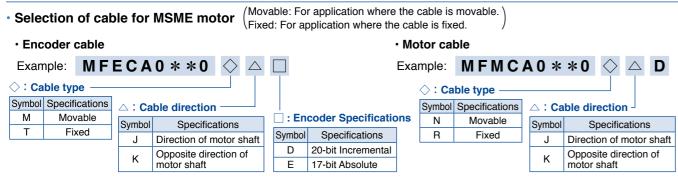
Use the attached exclusive connector for A-frame to E-frame, and maintain the peeled off length of

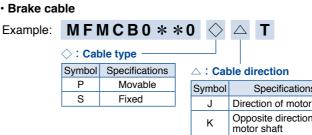
Terminal cover fastening Terminal block screw screw Fastening Fastening Nominal Nominal torque torque size size (N•m) (N•m) W M5 1.0 to 1.7 M3 0.4 to 0.6 M3 0.19 to 0.21 M4 0.7 to 1.0 NC M5 1.0 to 1.7 M3 M5 2.0 to 2.4 0.3 to 0.5 M4 0.7 to 1.0 M5 2.0 to 2.5 M6 2.2 to 2.5

 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

50 W to 750 W $\begin{pmatrix} MSMD, MHMD : IP65 \\ MSME : IP67 \end{pmatrix}$

		Motor	·			Driver	Pov	er		Optional	I parts					Options		
					A5I series A5 series	A5IIE series	capa	situ	er Cable	Mot	otor Cable	Brake				Interface Oakla	Title	Part No. F
	Power	Output	Part No.	Rating/	Part No.	A5E series Part No.	Frame (at	-1				Cable	External	Reactor	Noise Filter	Interface Cable		DV0P4360 DV0P4120
lotor series	supply	(Ŵ)	Note) 1	Spec. (page)	Speed, Position, Torque,	(Position control)	Frame rate		17-bit Absolute	without Brake			Regenerative Resistor	Single phase	Single phase			DV0P4121
				(I** 3 *7	(Full-Closed type) Note) 2	(type / Note) 3,4	(kV	A) Note) 5	Note) 4,5,8	Note) 5		Note) 5		3-phase	3-phase	Interface Conve	rsion Cable	DV0P4130
		50	MSMD5AZ 🗌 1 🗴	49	MAD \bigcirc T1105	MAD (> T1105E	Appr	DX.										DV0P4131
		50		49			A-frame						DV0P4280	DV0P227				DV0P4132
	Single	100	MSMD011 [] 1 *	51	MAD \bigcirc T1107	$MAD \diamondsuit T1107E$	Appr 0.4								DV0P4170	Connector Kit for Power	A-frame Single row type	DV0PM20032
	phase 100 V	200	MSMD021 [] 1 *	53	MBD 🔷 T2110	MBD \bigcirc T2110E	B-frame Appr						DV0P4283			Supply Input	D-frame Double row	⁷ DV0PM20033
	100 V	200					D-trame 0.						2101 1200	DV0P228		Connection Connector Kit	type	2
MSMD		400	MSMD041 [] 1 *	55	MCD \bigcirc T3120	MCD \bigcirc T3120E	C-frame 0.	9					DV0P4282		DV0PM20042	for Motor	A-frame to D-frame	DV0PM20034
(Leadwire) type		50	MSMD5AZ 🗆 1 🗴	50	MAD \bigcirc T1505	$MAD \diamondsuit T1505E$	Appr 0.		MFECA 0 * * 0EAE		MFMCA * * 0EED	MFMCB				Connection		DV0P4290
3000 r/mir		100		50			Appr	• • • <u>-</u> ,	Note) 7	0	UEED	0 * * 0GET	DV0P4281	DV0P227		Connector Kit fo Motor/Encoder		DV0P4380
5000 1/1111	Single	100	MSMD012 [] 1 *	52	MAD \bigcirc T1505	MAD \bigcirc T1505E	0.							DV0P220	DV0P4170	Moton/Encoder	Connection	DV0PM20035
	phase/ 3-phase	200	MSMD022 🗌 1 🗶	54	MAD \bigcirc T1507	$MAD\diamondsuitT1507E$	Appr 0.								DV0PM20042	Connector Kit fo Motor/Brake Co		DV0PM20040
	200 V	400	MSMD042 [] 1 *	56	MBD 🔷 T2510	MBD 🛇 T2510E	Appr	ox.					DV0P4283			MOLOI/BIAKE CO	RS485, RS232	DV0PM20024
				50			0.										Safety	DV0PM20025
		750	MSMD082 🗌 1 ∗	57	MCD \bigcirc T3520	MCD \bigcirc T3520E	C-frame Appr 1.5							DV0P220	DV0PM20042	Connector Kit	Interface	DV0P4350
		50	MSME5AZ 1 *	65	MAD \bigcirc T1105	MAD \bigcirc T1105E	Appr 0.4			N	MFMCA	MFMCB					External Scale	DV0PM20026
	Oinatha						A-frame Appr	MFECA	MFECA 0 * * 0MJE	0 *	* * 0NJD	0 * * 0PJT	DV0P4280	DV0P227			Encoder Analog Monitor Signa	DV0PM20010
	Single phase	100	MSME011 [] 1 *	67	MAD \bigcirc T1107	MAD \bigcirc T1107E	0.4		For movable, direction of	di	For movable, direction of motor shaft	(For movable, direction of motor shaft			DV0P4170	Battery For Abs	<u> </u>	DV0P2990
	100 V	200	MSME021 🗌 1 \star	69	MBD 🔷 T2110	$MBD\diamondsuitT2110E$	B-frame Appr	DX. motor shaft /	motor shaft /		MFMCA	MFMCB	DV0P4283			Battery Box No	te) 8	DV0P4430
MOME		400	MSME041 [] 1 *	71	MCD \bigcirc T3120	MCD (> T3120E	C frame Appr	DX. 0 * * 0MKD	MFECA 0 * * 0MKE		* * ONKD For movable,	0 * * 0PKT	DV0P4282	DV0P228	DV0PM20042	Mounting	A-frame	DV0PM20027
MSME		400		71			0.	opposite direction	For movable, opposite direction		oosite direction f motor shaft	opposite direction of motor shaft	DV0F4202		DV0F10120042	Bracket	B-frame C-frame	DV0PM20028 DV0PM20029
Connector)	50	MSME5AZ 🗌 1 🗴	66	MAD \bigcirc T1505	$MAD \diamondsuit T1505E$	Appr 0.		of motor shaft /		MFMCA	MFMCB					C-lialle	MFECA0**0EAD
3000 r/mir		100	MSME012 [] 1 *	68	MAD \bigcirc T1505	MAD \bigcirc T1505E	A-frame Appr	o * * 0TJD	0 * * 0TJE	/ F	* * ORJD For fixed,	0 * * 0SJT	DV0P4281	DV0P227				MFECA0**0EAM
	Single						A-iranie 0.	direction of	(For fixed, direction of	\m	direction of motor shaft	direction of motor shaft		DV0P220	DV0P4170		without Battery Box	MFECA0**0MJD
	3-phase	200	MSME022 [] 1 *	70	MAD \bigcirc T1507	MAD \bigcirc T1507E	0.	(motor onand)	(motor shaft)		MFMCA * * 0RKD	MFMCB 0 * * 0SKT			DV0PM20042	142	Williout Bullery Box	MFECA0**0MKD
	200 V	400	MSME042 🗌 1 *	72	MBD 🔷 T2510	MBD \diamondsuit T2510E	B-frame Appr		0 * * 0TKE	/ F	For fixed, posite direction	For fixed,	DV0P4283			Encoder Cable		MFECA0**0TJD MFECA0**0TKD
		750		70			Appr	opposite direction	opposite direction of motor shaft	\ of r	f motor shaft /	of motor shaft			DV0PM20042	Licodel Cable		MFECA0**0EAE
		750	MSME082 [] 1 *	73	MCD \bigcirc T3520	MCD \bigcirc T3520E	C-frame 1.	3		r	Note) 6			2101 220	DV0PM20042			MFECA0**0MJE
	Single	200	MHMD021 🗌 1 🗴	59	MBD 🔷 T2110	$MBD\diamondsuitT2110E$	B-frame Appr 0.						DV0P4283		DV0P4170		with Battery Box Note) 8	MFECA0**0MKE
	phase 100 V	400	MHMD041 🗌 1 *	61		MCD 🔷 T3120E	C-frame Appr						DV0P4282	DV0P228	DV0PM20042			MFECA0**0TJE MFECA0**0TKE
MHMD		-100		01			0.					MEMOR	D VOI 4202	DV0P227	D VOI WIZOO4Z			MFMCA0**0EED
(Leadwire type	Single	200	MHMD022 🗌 1 *	60	MAD 🔷 T1507	$MAD \diamondsuit T1507E$	A-frame Appr 0.		MFECA 0 * * 0EAE		MFMCA * * 0EED	MFMCB 0 * * 0GET		DV0P220	DV0P4170			MFMCA0**0NJD
3000 r/mir	phase/	400	MHMD042 1 *	62	MBD	MBD \bigcirc T2510E	B-frame Appr		Note) 7				DV0P4283		DV0PM20042	Motor Cable	without Brake	MFMCA0**0NKD
	3-phase 200 V				· · · ·	•	0.5							DV0P228				MFMCA0**0RJD
	200 1	750	MHMD082 🗌 1 🗶	63	MCD \bigcirc T3520	MCD \bigcirc T3520E	C-frame 1.							DV0P220	DV0PM20042			MFMCA0**0RKD MFMCB0**0GET
,			ications: 🗌 Motor s	•	•	o P.16)				Note) 6 (Cables for opp	posite to outpu	t shaft canno	ot be used	with 50 W or			MFMCB0**0PJT
, .			A5I series H: A								100 W motor.					Brake Cable		MFMCB0**0PKT
			: A5IIE series H: A eries drivers (dedica) do not support t	ha 17 hit al	coluto coocifico	tion		When you us encoder, pleas							MFMCB0**0SJT
			l type can be used i		-			solute specifica	uon,		Please note t						50 Ω 25 W	MFMCB0**0SKT DV0P4280
-			m, 05: 5 m, 10: 10 i			. 3 m: MFECA00	30EAM)			,	absolute encod	•		-			100 Ω 25 W	DV0P4281
	-									F	Please buy the	battery part n	umber "DV0	2990" sep	arately.	External	25 Ω 50 W	DV0P4282
			. /Mo	vable:	For application w	here the cable is n	novable. \									Regenerative Resistor	50 Ω 50 W	DV0P4283
election	of cable	for M				e the cable is fixed											30 Ω 100 W	DV0P4284
Encoder o	able					Motor cab	le			Brake of	cable						20 Ω 130 W DV0P220, DV0P221	DV0P4285
xample:	MEEC		**0 ◇ △			Example:	MEMO	A0 * * 0		Example		CB0 * *0	\land	т		Reactor	DV0P223, DV0P224	4, DV0P225,
										Example				•			DV0P227, DV0P228 DV0P4170, DV0PM	20042
Coble tor			a alter att			○ : Cab		1			○ : Cable t		 			Noise Filter	DV0P4220, DV0PM	20043
Cable typ	cations					Symbol		\triangle : Cable dire			Symbol Sp	ecifications	riangle : Cable di	rection		1		
bol Specific	able		e direction	າ 🗀 :	Encoder Specifi		Specifications Movable	1			P	Mayabla					DV0P3410	
nbol Specific	able Sv	mbol	Specifications irection of motor shaft	Sym		cations N	Movable Fixed	Symbol Sp	pecifications			Mayabla	Symbol	Specification		Surge Absorber	DV0P3410 Single phase 3-phase (200 V)	DV0P4190 DV0P1450





A5 Family

E Series

0.4 kW to 5.0 kW IP65 motor

		Motor				Driver		Power			Optional part	rts					Options (IP6	5 motor)	
					A5 II series A5 series	A5IE series		capacity	Encode	er Cable	Motor Cabl	nie i	Brake					Title	Part No.
	Power	Output	Part No.	Rating/	Part No.	A5E series Part No.		(at)				(Cable	External	Reactor		Interface Cable		DV0P4360
Motor series	supply		Note) 1	Spec. (page)	Speed, Position, Torque, Full-Closed type	(Position control type)	Frame	(rated load (kVA)	20-bit Incremental	17-bit Absolute		with Brake	lote) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter			DV0P4120 DV0P4121
					Note) 2	Note) 3,4		((()))	Note) 5	Note) 4,5,8	Note) 5 N	Note) 5			. ,		Interface Conve	rsion Cable	DV0P4130
	Single	1000	MSME102 🗌 C 🗴	74	$MDD \diamondsuit T5540$	MDD \bigcirc T5540E		Approx. 1.8							DV0P228				DV0P4131 DV0P4132
	phase/ 3-phase	,					D-frame		-		MFMCD MI	IFMCA		DV0P4284	DV0P222 DV0PM20047	DV0P4220		A-frame Single row	DV0PM20032
	200 V	1500	MSME152 C *	75	MDD \diamondsuit T5540	MDD \bigcirc T5540E		Approx. 2.3	MFECA	MFECA	0**2ECD 0**	**2FCD			DV0P222		Connector Kit	to type	
		2000	MSME202 C *	76	MED 🔷 T7364	MED 🔷 T7364E	E-frame	Approx. 3.3	-	0**0ESE			-	DV0P4285 Note) 6	DV0P223	DV0PM20043	for Power	D-frame Double row type	DV0PM20033
_	3-phase	3000	MSME302 C *	77	MFD \bigcirc TA390	MFD \bigcirc TA390E		Approx. 4.5	-				-	Note) o	DV0P224		Supply Input Connection	E-frame (200 V)	DV0PM20044
MSME	200 V	4000	MSME402 C *	78	$MFD\diamondsuitTB3A2$	MFD \bigcirc TB3A2E	F-frame	Approx. 6				/IFMCA **3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410		D-frame (400 V)	DV0PM20051
3000 r/mi	۱	5000	MSME502 C *		-	MFD \bigcirc TB3A2E		Approx. 7.5			0 3201 0	3FC1		x2 III paraller	Note) 7		Connector Kit	E-frame (400 V)	DV0PM20052
5			MSME084 C *					Approx. 1.6			MFMCD MI	IFMCE					for Control Power	D-frame and	DV0PM20053
		1500					D-trame	Approx. 1.8 Approx. 2.3				**2FCD		DV0PM20048		Recommended	Supply Input	E-frame (400 V)	D VOI MIZO000
	3-phase 400 V	2000	MSME204 C *	107	$MED \bigcirc T4430$	MED \bigcirc T4430E	E-frame			MFECA 0**0ESE			-	DV0PM20049	Note) 7	components	Connection Connector Kit	A-frame to D-frame	DV0PM20034
	400 V		MSME304 C *					Approx. 4.5	U ULUD	U ULUL	MFMCA M	IFMCA		DV0PM20049		P.252	for Motor	E-frame (200 V)	DV0PM20046
		4000 5000	MSME404					Approx. 6 Approx. 7.5	_		0**3ECT 0**	**3FCT		×2 in parallel			Connection	D-frame (400 V)	DV0PM20054
	Single		MDME102 C *			MDD (> T3530E		Approx. 1.8							DV0P228		Connector Kit for Regenerative	E-frame	DV0PM20045
	phase/			00			D-frame	Approx. 1.0	-					DV0P4284	DV0P222	DV0P4220	Resistor	D-frame (400 V)	DV0PM20055
	3-phase 200 V	1500	MDME152 🗌 C 🗴	81	$MDD\diamondsuitT5540$	$MDD\diamondsuitT5540E$		Approx. 2.3				/IFMCA **2FCD			DV0PM20047		O and a star With the	_	DV0P4310 DV0P4320
		2000		00		MED 🛇 T7364E	Γ íroma		MFECA	MFECA		-	_	DV0P4285	DV0P222 DV0P223		Connector Kit fo Motor/Encoder		DV0P4330
	3-phase	2000				-				0**0ESE			-	Note) 7	DV0P223 DV0P224	DV0PM20043			DV0P4340
	200 V		MDME302 C *					Approx. 4.5 Approx. 6	-		MFMCA M	IFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410		RS485, RS232	DV0PM20024
MDME		5000	MDME502 C *				-1	Approx. 7.5			0**3ECT 0**	**3FCT		×2 in parallel	Note) 7	D V01 3410		Safety Interface	DV0PM20025 DV0P4350
2000 r/mi	1	400	MDME044 🗌 C *	111	MDD \bigcirc T2407	MDD 🔿 T2407E		Approx. 0.9							11010) /		Connector Kit	External Scale	DV0PM20026
		600	MDME064 C *	112	MDD \bigcirc T2407	MDD (> T2407E	D-frame	Approx. 1.2			MFMCD MI	IFMCE		DV0PM20048				Encoder	DV0PM20010
	3-phase	1000	MDME104 C * MDME104 C *	113 114	$\frac{\text{MDD} \diamondsuit 12412}{\text{MDD} \diamondsuit 13420}$	MDD		Approx. 1.8 Approx. 2.3		MFECA	0**2ECD 0**	**2FCD			_	Recommended		Analog Monitor Signal	
5	400 V		MDME204 C *		•	•			-	0**0ESE				DV0PM20049	Note) 7	components	Battery For Abs Battery Box No		DV0P2990 DV0P4430
							- <u>-</u> .	Approx. 4.5			MFMCA M	IFMCA		DV0PM20049		P.252	Mounting		
			MDME404 C *				⊢-frame	Approx. 6 Approx. 7.5			0**3ECT 0**	**3FCT		×2 in parallel			Bracket	D-frame	DV0PM20030
	Single							, pprova 7 TO									Encoder Cable	without Battery Box with Battery Box	
	phase/		MGME092 🗌 C 🜸	92	MDD \diamondsuit T5540	MDD \bigcirc T5540E	D-frame	Approx. 1.8	MFECA					DV0P4284	DV0P228	DV0P4220	Encoder Ouble	Note) 8	MFECA0**0ESE
MGME	3-phase 200 V								0**0FSD	MFECA 0**0ESE	0**2ECD **	*2FCD	-		DV0P221				MFMCA0**2ECD
Low speed High torqu	/ 3-phase	2000	MGME202 C *	93	MFD \bigcirc TA390	MFD \bigcirc TA390E	- F-frame	Approx. 3.8				IFMCA		DV0P4285	DV0P223	DV0P3410			MFMCD0**2ECD
type	200 V	3000	MGME302 C *	94	MFD \bigcirc TB3A2	MFD \bigcirc TB3A2E		Approx. 4.5				**3FCT //FMCE		×2 in parallel	DV0P224			without Brake	MFMCF0**2ECD
1000 r/mi	¹ 3-phase	900	MGME094 C *	125	MDD \bigcirc T3420	MDD \bigcirc T3420E	D-frame	Approx. 1.8	MFECA	MFECA		**2FCD		DV0PM20048	_	Recommended	Motor Cable		MFMCA0**3ECT
	400 V	2000	MGME204 C *					Approx. 3.8		0**0ESE		//FMCA		DV0PM20049	Note) 7	components P.252			MFMCD0**3ECT
	Single		MGME304 C *					Approx. 4.5			0**3ECT 0**	**3FCT		x2 in parallel	DV0P228/	1.232		with Brake	MFMCA0**2FCD MFMCE0**2FCD
	phase/	1000	MHME102 C *	97	MDD \bigcirc T3530	MDD \bigcirc T3530E	D-frame	Approx. 1.8				IFMCA		DV0P4284	DV0P222	DV0P4220		will Diake	MFMCA0**3FCT
	3-phase	, 1500	MHME152 🗌 C 🗴	98	MDD \diamondsuit T5540	MDD \bigcirc T5540E	-	Approx. 2.3			0**2ECD 0**	**2FCD		D VVF 4204	DV0PM20047/ DV0P222			50 Ω 25 W	DV0P4280
	200 V								MFECA	MFECA	MFMCE MI	IFMCE	ŀ	DV0P4285				100 Ω 25 W	DV0P4281
			MHME202 🗌 C 🗴				1	Approx. 3.3	0**0ESD	0**0ESE		**2FCD	- [Note) 6		DV0PM20043	External	25 Ω 50 W 50 Ω 50 W	DV0P4282 DV0P4283
MHME	3-phase 200 V	3000	MHME302 C * MHME402 C *	100			. _]	Approx. 4.5	-		MFMCA M	IFMCA		DV0P4285	DV0P224 DV0P225		Regenerative	30 Ω 100 W	DV0P4283 DV0P4284
			MHME402 C *					Approx. 6 Approx. 7.5	_			**3FCT		×2 in parallel		DV0P3410	Resistor	20 Ω 130 W	DV0P4285
2000 r/mi	1		MHME104 C *					Approx. 7.3			MFMCD MI	IFMCE			Note) 7			120 Ω 80 W	DV0PM20048
			MHME154 C *					Approx. 1.0 Approx. 2.3				**2FCD						80 Ω 190 W	DV0PM20049
	3-phase		MHME204 🗌 C *						MFECA	MFECA	MFMCE MI	IFMCE **2FCD	_	DV0PM20049	-	Recommended components	Reactor	DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228,	DV0P225,
	400 V		MHME304 🗌 C *					Approx. 4.5	0**0ESD	0**0ESE		/FMCA	F	DV0PM20049	Note) 7	P.252		DV0P4170, DV0PM2	0042
									4			**3FCT		×2 in parallel			Noise Filter	DV0P4220, DV0PM2	0043
Start Start <th< td=""><td>DV0P3410 Single phase</td><td>DV0P4190</td></th<>						DV0P3410 Single phase	DV0P4190												
Note) 2 \diamond : Drivers series K: A5I series Note) 3 \diamond : Drivers series K: A5IE se						.	DV0P1450												
Note) 4 Because A5IE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, Note) 8 Please note that a battery is not supplied together with 17-bit 3-phase (400 V) DVOF					DV0PM20050														
			pe can be used in co	mhing	tion						absolut	ita ancodar	achla	(with battery b			Noise Filter for		DV0P1460

A5 Family

E Series

Information

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400 W to 15.0 kW IP67 motor (MSME MDME)

		Motor				Driver		Power			Optio	onal parts	s					Options (IP6	/ motor)	
					A5I series	A5IIE series		capacity	Encode	ar Cabla	Ma	tor Cabl	_	Brake					Title	Part No.
	_	0.1.1.1	Dort No.	Rating/	A5 series Part No.	A5E series		/ at \	Encode	er Cable	INIO	tor Cabl	e	Cable	External	Reactor		Interface Cable		DV0P4360
Notor series	Power supply		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) 4,5,9	without Brake Note) 5	В	with Brake ote) 5	Note) 5	Regenerative Resistor	Single phase	Noise Filter	Interface Conve	rsion Cable	DV0P4120 DV0P4121 DV0P4130
	Single		MSME102 [] 1 *	74	,	, · ·		Approx. 1.8					,			DV0P228 DV0P222				
	3-phase 200 V)	MSME152 🗌 1 ∗	75	MDD 🔷 T5540		D-frame	Approx. 2.3			MFMCD 0**2ECE		FMCA 2FCD		DV0P4284	DV0PM20047	DV0P4220	Connector Kit	A-frame to Double row	D V01 10120002
		2000	MSME202 [] 1 *	76	MED 🔷 T7364	MED 🔷 T7364E	E-frame	Approx. 3.3	MFECA 0**0ETD	MFECA 0**0ETE				-	DV0P4285 Note) 7	DV0P223	DV0PM20043	for Power Supply Input Connection	D-frame Double rov type E-frame (200 V)	DV0PM20033
MSME	3-phase 200 V		MSME302				F.frame	Approx. 4.5 Approx. 6	-		MFMCA		FMCA		DV0P4285	DV0P224 DV0P225	DV0P3410	Connection	D-frame (400 V) E-frame (400 V)	DV0PM20051 DV0PM20052
3000 r/m	n	5000		79	$MFD\diamondsuitTB3A2$	$MFD\diamondsuitTB3A2E$	- nume	Approx. 7.5 Approx. 1.6			0**3EC1	Γ 0*'	*3FCT		×2 in parallel	Note) 8		Connector Kit for Control Power Supply Input	D-frame and E-frame (400 V)	DV0PM20053
	3-phase	1500	MSME154 🗌 1 *	106	$MDD \bigcirc T3420$	$MDD\diamondsuitT3420E$		Approx. 2.3	MEECA	MFECA	MFMCD 0**2ECD		FMCE 2FCD		DV0PM20048	_	Recommended components	Connector Kit for Motor	A-frame to D-frame E-frame (200 V)	DV0PM20034
	400 V	2000	MSME204 1 * MSME304 1 * MSME404 1 *	108	MFD 🔷 T5440	MFD \bigcirc T5440E		Approx. 4.5	0^^0ETD	0**0ETE	MFMCA		FMCA		DV0PM20049 DV0PM20049	Note) 8	P.252	Connection Connector Kit for Regenerative	D-frame (400 V) E-frame	DV0PM20054 DV0PM20045
	Single			110	MFD \bigcirc TA464	MFD \diamondsuit TA464E		Approx. 7.5 Approx. 1.8			0**3EC1	· U‴	*3FCT		×2 in parallel	DV0P228		Resistor	D-frame (400 V)	DV0PM20055 DV0PM20036 DV0PM20037
	phase/ 3-phase 200 V)	MDME152 🗌 1 🗴	81	MDD 🔷 T5540	MDD 🔷 T5540E	D-frame	Approx. 2.3	-		MFMCD 0**2ECD		FMCA 2FCD		DV0P4284	DV0P222 DV0PM20047 DV0P222	DV0P4220	Connector Kit fo Motor/Encoder (Connection	DV0PM2003 DV0PM2003
		2000				MED \bigcirc T7364E	E-frame		MFFCA	MFECA					DV0P4285 Note) 7	DV0P223	DV0PM20043		RS485, RS232 Safety Interface	DV0PM2002 DV0PM2002 DV0P4350
	3-phase	4000	MDME302 1 * MDME402 1 * MDME502 1 *	84	MFD \bigcirc TB3A2	MFD \bigcirc TB3A2E	F-frame	Approx. 4.5 0**0FTD	0**0ETD 0**0ET	0**0ETE	MFMCA 0**3ECT		FMCA *3FCT	-	DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	Connector Kit	External Scale Encoder	DV0PM2002 DV0PM2001
	200 V		MDME752 🗌 1 *		MGD ◇ TC3B4		<i>c.</i>								DV0P4285		Decommended		Analog Monitor Signa	
		7500		00		_	G-frame	Approx. 11			_		-		×3 in parallel	Note) 8	Recommended components	Battery For Absorbattery Box No		DV0P2990 DV0P4430
MDME			MDMEC12 [] 1 * MDMEC52 [] 1 *				H-frame	Approx. 17 Approx. 22	_		Note) 6	N	ote) 6		DV0PM20058		P.252	Mounting	D-frame	DV0P4430 DV0PM2003
2000 r/m	n	400	MDME044 🗌 1 *	111		MDD 🔷 T2407E		Approx. 0.9	-									Bracket	without Battery Box	MFECA0**0E
		1000	MDME064 [] 1 * MDME104 [] 1 * MDME154 [] 1 *	113	-	-	D-frame	Approx. 1.2 Approx. 1.8 Approx. 2.3	-		MFMCD 0**2ECE		FMCE 2FCD		DV0PM20048			Encoder Cable	with Battery Box Note) 9	MFECA0**0E
	3-phase	2000 3000	MDME204 [] 1 * MDME304 [] 1 *	115 116	MED \bigcirc T4430 MFD \bigcirc T5440	MED \bigcirc T4430E MFD \bigcirc T5440E		Approx. 3.3 Approx. 4.5	MFECA	MFECA	MFMCA		FMCA		DV0PM20049 DV0PM20049	_	Recommended components		without Brake	MFMCD0**28 MFMCE0**28 MFMCF0**28
	400 V	5000	MDME404 [] 1 * MDME504 [] 1 *	118	MFD 🔷 TA464			Approx. 7.5	-	0**0ETE	0**3EC1		*3FCT		×2 in parallel	Note) 8	P.252	Motor Cable		MFMCA0**38 MFMCD0**38
		11000	MDME754 [] 1 * MDMEC14 [] 1 * MDMEC54 [] 1 *	120	MHD \bigcirc TB4A2	_	G-frame H-frame	Approx. 11 Approx. 17	-		 Note) 6	N	 ote) 6		×3 in parallel DV0PM20059				with Brake	MFMCA0**2F MFMCE0**2F MFMCA0**3F
	Single phase/ 3-phase	1500			~	MDD 🔷 T5540E	D-frame	Approx. 22 Approx. 2.3			MFMCA		FMCA		DV0P4284	DV0PM20047	DV0P4220		50 Ω 25 W 100 Ω 25 W 25 Ω 50 W	DV0P4280 DV0P4281 DV0P4282
MFME	200 V	2500	MFME252 🗌 1 *	90	MED 🔷 T7364	MED 🔷 T7364E	E-frame	Approx. 3.8	MFECA 0**0ETD	MFECA 0**0ETE	0**2ECE MFMCF	= Mi	*2FCD FMCE *2FCD	-	DV0P4285 Note) 7	DV0P222 DV0P224	DV0PM20043	External Regenerative Resistor	50 Ω 50 W 30 Ω 100 W 20 Ω 130 W	DV0P4283 DV0P4284 DV0P4285
(Flat type 2000 r/mi	,	4500	MFME452 🗌 1 🗴		Ť	•					0**2ECE MFMCE 0**3EC1) MI	FMCA *3FCT		DV0P4285 ×2 in parallel	 Note) 8	DV0P3410		120 Ω 80 W 80 Ω 190 W	DV0PM2004 DV0PM2004
	3-phase 400 V	2500	MFME154 🗌 1 * MFME254 🗌 1 *	123	MED 🔷 T4430	MED \bigcirc T4430E	E-frame	Approx. 3.8	MFECA 0**0FTD	MFECA 0**0ETE	MFMCF 0**2ECE MFMCD	D 0**	FMCE 2FCD FMCA	_	DV0PM20048 DV0PM20049 DV0PM20049	 Note) 8	Recommended components	Reactor	DV0P220, DV0P221 DV0P223, DV0P224 DV0P227, DV0P228	, DV0P225, 3, DV0PM2004
1 Rotar			MFME454 🗆 1 *				F-frame	Approx. 6.8			0**3EC1	Г 0**	*3FCT		×2 in parallel		P.252	Noise Filter	DV0P4170, DV0PM DV0P4220, DV0PM DV0P3410	
2 ◇:D 4 Beca	rivers serie ise A5IIE, A	s K: A5 5E serie	5I series H: A5 s es drivers (dedicate e can be used in co	eries d for po	Note) 3 \diamondsuit :	Drivers series k					Note) 7 Note) 8	Other c Reactor	ombination r should b	ons exi pe prep	st, and refer to ared by the use	P.210 for deta er.	ils. er with 17-bit	Surge Absorber	Single phase 3-phase (200V) 3-phase (400V)	DV0P4190 DV0P1450 DV0PM2005
0011000																			3-DHase (400 V)	

A5 Family

E Series

26

0.9 kW to 7.5 kW IP67 motor (MGME)

		Motor				Driver		Power			Optio	nal parts					• Options (IP6	7 motor)	
					A5II series	A5ILE series		capacity	Encode	er Cable	Mo	tor Cable	Brake					Title	Part No.
	Power	Output	Part No.	Rating/	A5 series Part No.	A5E series Part No.		(at)	Liicou				Cable	External	Reactor		Interface Cable		DV0P4360
Motor series	supply	(W)	Note) 1	Spec.	Speed, Position, Torque,	(Position control)	Frame	(rated load	20-bit	17-bit	without			Regenerative	Single phase	Noise Filter			DV0P4120
				(page)	Full-Closed type	(type /		(kVA)	Incrementa		Brake	Brake	Note) 5	Resistor	3-phase		Interface Conve		DV0P4121 DV0P4130
	0. 1				Note) 2	Note) 3,4			Note) 5	Note) 4,5,9	Note) 5	Note) 5					Interface Conve	ISION CADIE	DV0P4130 DV0P4131
	Single phase/										MFMCD	MFMCA			DV0P228				DV0P4132
	3-phase	900	MGME092 🗌 1 ∗	92	MDD <> T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8			0**2ECD			DV0P4284	DV0P221	DV0P4220		a t 1	DV0PM20032
	200 V																O	to	
			MGME202 🗌 1 ∗		· ·	, , , , , , , , , , , , , , , , , , ,		Approx. 3.8		MFECA				D\/0D4005	DV0P223		Connector Kit for Power	D-frame Double row type	DV0PM20033
		3000	MGME302 🗌 1 ∗	94	$MFD\diamondsuitTB3A2$	MFD \bigcirc TB3A2E	F-frame	Approx. 4.5	0**0ETD	0**0ETE	MFMCA 0**3ECT		-	DV0P4285 x2 in parallel	DV0P224	DV0P3410	Supply Input	E-frame (200 V)	DV0PM20044
≤ MGME	3-phase	4500	MGME452 🗌 1 *	95	$MFD\diamondsuitTB3A2$	MFD \bigcirc TB3A2E		Approx. 7.5			0 0201			X2 III parallol			Connection	D-frame (400 V)	DV0PM20051
MGME	200 V													DV0D 4005	_	Recommended		E-frame (400 V)	DV0PM20052
		6000	MGME602 🗌 1 *	96	$MGD\diamondsuitTC3B4$	_	G-frame	Approx. 9.0			Note) 6	Note) 6		DV0P4285 x3 in parallel	Note) 7	components	Connector Kit		
nerti a 1000 r/min											Note) o	Note) 0		xo in paraller		P.252	for Control Power	D-frame and E-frame (400 V)	DV0PM20053
ਹੋ: 1000 r/min		900	MGME094 🗆 1 *	125			D fromo	Annroy 1.8			MFMCD			DV0PM20048			Supply Input Connection	E-frame (400 V)	
					v	· · ·	D-manie	Approx. 1.0			0**2ECD	0**2FCD		D VOI MILCOUTO			Connector Kit	A-frame to D-frame	DV0PM20034
	0 nhaaa		MGME204 🗌 1 ∗		-			Approx. 3.8		MFECA	MFMCA	MFMCA		DV0PM20049		Recommended	for Motor	E-frame (200 V)	DV0PM20046
	3-phase 400 V	3000	MGME304 🗌 1 ∗	127	MFD \bigcirc TA464	MFD \bigcirc TA464E	F-frame	Approx. 4.5		0**0ETE	0**3ECT		-	×2 in parallel	Note) 7	components	Connection	D-frame (400 V)	DV0PM20054
		4500	MGME454 🗌 1 ∗	128	$MFD\diamondsuitTA464$	$MFD\diamondsuitTA464E$		Approx. 7.5							,	P.252	Connector Kit		DV0PM20045
		6000	MGME604 🗌 1 *	120		_	G trama	Approx. 9.0			_	_		DV0PM20049			for Regenerative Resistor	D-frame (400 V)	DV0PM20055
		0000		129		_	G-irame	Approx. 9.0			Note) 6	Note) 6		×3 in parallel					DV0PM20036
	Single	1000	MHME102 🗌 1 *	07				Approx. 1.8							DV0P228		Connector Kit for	or	DV0PM20037
	Single phase/	1000		97							MFMCD	MFMCA		DV0D4004	DV0P222	D) (0D (000	Motor/Encoder		DV0PM20038
	3-phase						D-frame		1		0**2ECE	0**2FCD		DV0P4284	DV0PM20047	DV0P4220			DV0PM20039
	200 V	1500	MHME152 🗌 1 🗴	98	MDD <> T5540	MDD \bigcirc T5540E		Approx. 2.3							DV0P222			· · · · · · · · · · · · · · · · · · ·	DV0PM20024
					<u>^</u>				-		MFMCE	MFMCE	-	DV0P4285					DV0PM20025 DV0P4350
3		2000	MHME202 🗌 1 *	99	MED 🔷 T7364	MED \bigcirc T7364E	E-frame	Approx. 3.3	MFECA	MFECA	0**2ECD			Note) 8	DV0P223	DV0PM20043	Connector Kit		DV0PM20026
		3000	MHME302 🗌 1 *	100	MFD \bigcirc TA390	MFD \bigcirc TA390E		Approx. 4.5	_						DV0P224				DV0PM20010
	3-phase	4000		101	MFD \bigcirc TB3A2	MFD \bigcirc TB3A2E	F-frame				MFMCA	MFMCA 0**3FCT		DV0P4285	DV0P225	DV0P3410		Analog Monitor Signal	
	200 V		MHME502 [] 1 *				-	Approx. 7.5			0**3ECT	0**3FC1		×2 in parallel DV0P225 DV0P4285 ×3 in parallel Note) 7		Battery For Abs	olute Encoder	DV0P2990	
High MHME													-		_	Recommended	Battery Box No	ote) 9	DV0P4430
		7500	MHME752 🗌 1 🗴	103	MGD \bigcirc TC3B4	_	G-frame	Approx. 11			_	_			Note) 7	components P.252	Mounting Bracket	D-frame	DV0PM20030
nertia					- •			TT -			Note) 6	Note) 6					DIACKEL	without Battery Box	MEECA0**0ETD
۵		1000	MHME104 🗌 1 *	130	MDD 🗘 T2412	MDD \bigcirc T2412E		Approx. 1.8			MFMCD)					Encoder Cable	with Dattany Day	
			MHME154 🗌 1 *				D-frame	Approx. 2.3			0**2ECD			DV0PM20048				Note) 9	MFECA0**0ETE
									-		MFMCE	011000							MFMCA0**2ECD
		2000	MHME204 🗌 1 *	132	MED 🔷 T4430	MED \bigcirc T4430E	E-frame	Approx. 3.3			0**2ECD			DV0PM20049		Recommended			MFMCD0**2ECD
	3-phase	3000	MHME304 🗌 1 🗴	133	MFD 🔷 T5440	MFD 🔷 T5440E		Approx. 4.5	MFECA	MFECA			- 1			components		without Brake	MFMCE0**2ECD MFMCF0**2ECD
	400 V	4000	MHME404 🗌 1 *	134	MFD \bigcirc TA464	MFD \bigcirc TA464E	F-frame		0^^0ETD	0**0ETE	MFMCA			DV0PM20049	Note) 7	P.252	Motor Cable		MFMCA0**3ECT
			MHME504 [] 1 *				-	Approx. 7.5			0**3ECT	0**3FCT		×2 in parallel					MFMCD0**3ECT
									-			_	-	DV0PM20049					MEMCA0**2ECD
		7500	MHME754 🗌 1 🗴	136	MGD <> TB4A2	-	G-frame	Approx. 9.0			Note) 6	Note) 6		×3 in parallel				with Brake	MFMCE0**2FCD
Note) 1 Rotary o	ncoder en	ecificati	ons: 🗌 Motor spe	cificati	on: * (refer to P	216)					1	1							MFMCA0**3FCT
	•		I series H: A5 s			.10)													DV0P4280 DV0P4281
,			IE series H: A5E																DV0P4281 DV0P4282
,			es drivers (dedicate) do not support	the 17	-bit absolu	ite specific	ation.							External		DV0P4283
,			vpe can be used in		-					,							Regenerative Resistor		DV0P4284
-		-	05: 5 m, 10: 10 m,			3 m: MFECA003	DEAM)										RESISIO	20 Ω 130 W	DV0P4285
	•		nnector kit of option		// ··· F··		,											120 Ω 80 W	DV0PM20048
Note) 7 Reactor	-																		DV0PM20049
Note) 8 Other co	mbination	s exist,	and refer to P.210			ite oncodor cable	(with)	hattory ho	~)								Reactor	DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228,	DV0P225,
,			is not supplied tog rt number "DV0P29				יעשונו <i>ו</i>	Janei y DO	~j.									DV0P227, DV0P228, DV0P4170, DV0PM2	0042
1 10030 0	ay ne ba	liciy pa		, se	paratory.												Noise Filter	DV0P4220, DV0PM2	0043
																		DV0P3410	
																		• •	DV0P4190
																	Surge Absorber	,	DV0P1450
																	Noice Filter for	,	DV0PM20050
																	Noise Filter for	oigilai Lilles	DV0P1460

A5 Family

E Series

Driver Specifications

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

		100 V	Main	circuit	Single phase, 100 V to 120 V +10 % -15 % 50 Hz/60 Hz						
		100 V	Contro	ol circuit	Single phase, 100 V to 120 V $^{+10\%}_{-15\%}$ 50 Hz/60 Hz						
			Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % -15 % 50 Hz/60 Hz						
	Input	200 V	circuit	E-frame to H-frame	3-phase, 200 V to 230 V +10 % -15 % 50 Hz/60 Hz						
	Input power	•		A-frame to D-frame	Single phase, 200 V to 240 V +10 % -15 % 50 Hz/60 Hz						
			circuit	E-frame to H-frame	Single phase, 200 V to 230 V +10 % -15 % 50 Hz/60 Hz						
		400 V	Main circuit	D-frame to H-frame	3-phase, 380 V to 480 V +10 % -15 % 50 Hz/60 Hz						
		400 V	Control circuit	D-frame 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	rironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation ^{*1})						
			Alti	tude	Lower than 1000 m						
			Vibr	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)						
	Cor	Control method Encoder feedback			IGBT PWM Sinusoidal wave drive						
Ва	Enc				17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial						
sic Spe				A/B phase	A/B phase, initialization signal defferential input.						
Basic Specifications		edback so dback	ale	serial	Manufacturers that support serial communication scale: DR. JOHANNES HEIDENHAIN GmbH Fagor Automation S.Coop. Magnescale Co., Ltd. Mitutoyo Corporation Nidec Sankyo Corporation Renishaw plc						
	Pa	Ocastaci		Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.						
	Parallel I	Control	signai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.						
	1/O c	Anology	aignal	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)						
	önn	Analog	signai	Output	2 outputs (Analog monitor: 2 output)						
	connector			Input	2 inputs (Photo-coupler input, Line receiver input)						
		Pulse si	gnai	Output	4 outputs (Line driver: 3 output, open collector: 1 output)						
				USB	Connection with PC etc.						
		mmunicat ction	ion	RS232	1 : 1 communication						
	Turk	otion		RS485	1 : n communication up to 31 axes to a host.						
	Saf	ety functi	on		Used for functional safety.						
	Fro	nt panel			(1) 5 keys(2) LED (6-digit)(3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))						
	Regeneration				A, B, G and H-frame: no built-in regenerative resistor (external resistor only) C-frame to F-frame: Built-in regenerative resistor (external resistor is also enabled.)						
	Dyr	namic bra	ke		A-frame to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only						
	Cor	ntrol mod	e		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.

*2 Not applicable to 2DOF control system.

		O a retract in an		(1) Deviation		
		Control inpu	π	(3) Electric g		
		Control outp	put	Positioning c		
			Max. command pulse frequency	Exclusive int Exclusive int		
	Posi	Pulse	Input pulse signal format	Differential ir ((1) Positive direction)		
	Position control	input	Electronic gear (Division/Multiplication of command pulse)	1/1000 times		
	≌		Smoothing filter	Primary del		
		Analog	Torque limit command input	Individual to		
		input	Torque feed forward input	Analog volta		
			us Speed Observer	Available		
		Damping Co		Available		
		2DOF settin	gs	Only available		
		Control inpu	ıt	(1) Selectionsetup 2(3) Selection		
		Control outp	ut	Speed arriva		
	Speed control	Analog	Velocity command input	Speed comn Parameters (6 V/Rated r		
	ee	input	Torque limit command input	Individual tor		
	d C		Torque feed forward input	Analog volta		
	ontr	Internal velo	city command	Switching th		
	<u>o</u>		own function	Individual s to 10 s/100		
		Zero-speed	clamp	Speed zero		
			us Speed Observer	Available		
고		Speed Cont		Available		
Function		2DOF settin		Only available		
i -		Control inpu	•	Speed zero		
	Torque control	Control outp	Speed arriva			
		Analog	Torque command input	Speed comn Parameters		
	ntrol *2	input		torque Defa		
-	10	Speed limit	Speed limit v			
		Control inpu	(1) Deviation(3) Commanswitching e			
		Control outp	ut	Full-closed p		
	Fu		Max. command pulse frequency	Exclusive int Exclusive int		
	<u>c</u>	Pulse	Input pulse signal format	Differential ir		
	Full-closed control *2	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 times		
	tro		Smoothing filter	Primary dela		
	Ň	Analog	Torque limit command input	Individual tor		
		input	Torque feed forward input	Analog volta		
		Setup range feedback so	of division/multiplication of ale	1/40 times to		
		Damping Co	ontrol	Available		
				The load ine		
_		Auto tuning		operating ac set up suppo accordance		
	Cor		encoder feedback pulse	set up suppo accordance		
-	Comm		encoder feedback pulse	set up suppo accordance Set up of any		
-	Common	Division of e	encoder feedback pulse Hard error	set up suppo accordance Set up of an Over-voltage over-heat, ov		
	Common	Division of e Protective function		set up suppo accordance Set up of any Over-voltage		

n counter clear (2) Command pulse inhibitation gear (4) Damping control switching etc.

complete (In-position) etc.

nterface for Photo-coupler: 500 kpps

nterface for line driver : 4 Mpps

input

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

es to 1000 times

lay filter or FIR type filter is adaptable to the command input orque limit for both positive and negative direction is enabled. tage can be used as torque feed forward input.

ole at A5I Series

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

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

nmand input can be provided by means of analog voltage. s are used for scale setting and command polarity.

d rotational speed Default)

orque limit for both positive and negative direction is enabled. tage can be used as torque feed forward input.

the internal 8speed is enabled by command input.

setup of acceleration and deceleration is enabled, with 0 s 00 r/min. Sigmoid acceleration/deceleration is also enabled.

clamp input is enabled.

le at A5**I** Series

o clamp, Torque command sign input etc.

val etc.

nmand input can be provided by means of analog voltage. s are used for scale setting and command polarity. (3 V/rated fault)

value with parameter is enabled.

on counter clear (2) Command pulse inhibition

and dividing gradual increase switching (4) Damping control etc.

positioning complete etc.

nterface for Photo-coupler: 500 kpps

nterface for line driver : 4 Mpps

input

es to 1000 times

lay filter or FIR type filter is adaptable to the command input orque limit for both positive and negative direction is enabled. age can be used as torque feed forward input.

to 160 times

ertia is identified in real time by the driving state of the motor according to the command given by the controlling device and port software "PANATERM". The gain is set automatically in e with the rigidity setting.

ny value is enabled (encoder pulses count is the max.).

ge, under-voltage, over-speed, over-load,

over-current and encoder error etc.

sition deviation, command pulse division error, EEPROM error

data history can be referred to.

Driver Specifications

A5IIE, A5E series (Position control type)

	100 \/	Main	circuit	Single phase, 100 V to 120 V $^{+10\%}_{-15\%}$ 50 Hz/60 Hz					
	100 V	Contro	ol circuit	Single phase, 100 V to 120 V +10 % -15 % 50 Hz/60 Hz					
		Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % -15 % 50 Hz/60 Hz					
Input J	000 V	circuit	E-frame to F-frame	3-phase, 200 V to 230 V +10 % -15 % 50 Hz/60 Hz					
oower	200 V Control circuit		A-frame to D-frame	Single phase, 200 V to 240 V +10 % -15 % 50 Hz/60 Hz					
			E-frame to F-frame	Single phase, 200 V to 230 V $^{+10\%}_{-15\%}$ 50 Hz/60 Hz					
	400 V	Main circuit	D-frame to F-frame	3-phase, 380 V to 480 V +10 % -15 % 50 Hz/60 Hz					
	400 V	Control circuit	D-frame to F-frame	DC 24 V ± 15 %					
	temp		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})					
Env	ironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation ^{*1})					
		Alti	tude	Lower than 1000 m					
		Vibr	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)					
Cor	ntrol meth	od		IGBT PWM Sinusoidal wave drive					
Enc	coder feed	lback		20-bit (1048576 resolution) incremental encoder, 5-wire serial					
Pa	Control	eignal	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.					
trallel I/0	Control	Signal	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.					
	Analog	sional	Input	none					
nnec			Output	2 outputs (Analog monitor: 2 output)					
đ	Pulse si	gnal	Input	2 inputs (Photo-coupler input, Line receiver input)					
			Output	4 outputs (Line driver: 3 output, open collector: 1 output)					
			USB	Connection with PC etc.					
Fro				(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)					
Reç	generatio	n		A, B-frame: no built-in regenerative resistor (external resistor only) C-fram to F-frame: Built-in regenerative resistor (external resistor is also enabled.)					
Dyr	namic bra	ke		Built-in					
Control mode				(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control					
	Cor Enc Parallel I/O connector Cor fund Fro Dyr	400 V 400 V 400 V Environment Control meth Environment Analog s Parallel Oongebra Analog s Pulse si Communicati function Front panel Regeneration Dynamic bra	$ \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right) \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ 100 \ V \end{array} \right \left \begin{array}{c} 100 \ V \\ \end{array} \left \begin{array}{c} 100 \ V \\ \end{array} \right \left \begin{array}{c} 100 \ V \\ \end{array} \left \begin{array}{c} 100 \ V \\ \end{array} \right \left \begin{array}{c} 100 \ V \\ \end{array} \left \begin{array}{c} 100 \ V \\ \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} \left \begin{array}{c} \end{array} \right \left \begin{array}{c} \end{array} $	Image: space					

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

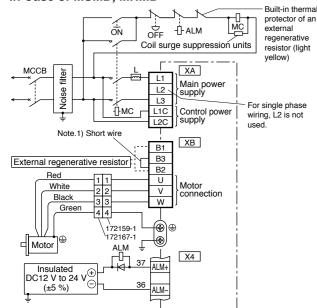
*1 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

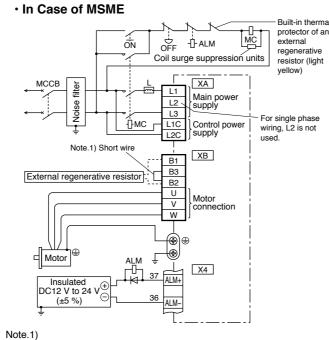
Wiring Diagram

Wiring to Connector, XA, XB, XC, XD and Terminal Block

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

In Case of MSMD, MHMD





Note.1)

Note.1)

Frame	Short wire	Built-in		ne 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	Short wire	Built-in	Connection of the	ne 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

⊖ OFF ⊕ALM

- Built-in therma

protector of an

external

In case of not using

Always open between B2-B3

Shorted between B2-B3 with an

an external regenerative re

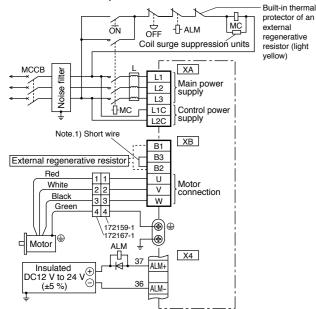
attached short wire

+ 0 +

ЦЙС

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

In Case of MSMD, MHMD



		+	ON OFF TALM COL	regenerative resistor (light
4 4	MCCB	Noise filter	L XA Main power Supply L1 Control power L2 Control power L1C Supply	yellow)
		Note.1) Sh		
E	External re	egenerative	e resistor	
			U V W	
			L_®⊕	
	□ Motor]⊕		
	DC12 \	lated / to 24 V 5 %) ℃		
Note.1	1)			
Frame	Short wire	Built-in	Connection of the connector XB	f and union

In case of using

rays open between B2-B3

Connect an external regeneration

an external regenerative re

sistor between B1-B2 Remove the short wire accessor from between B2-B3.

Connect an external rege

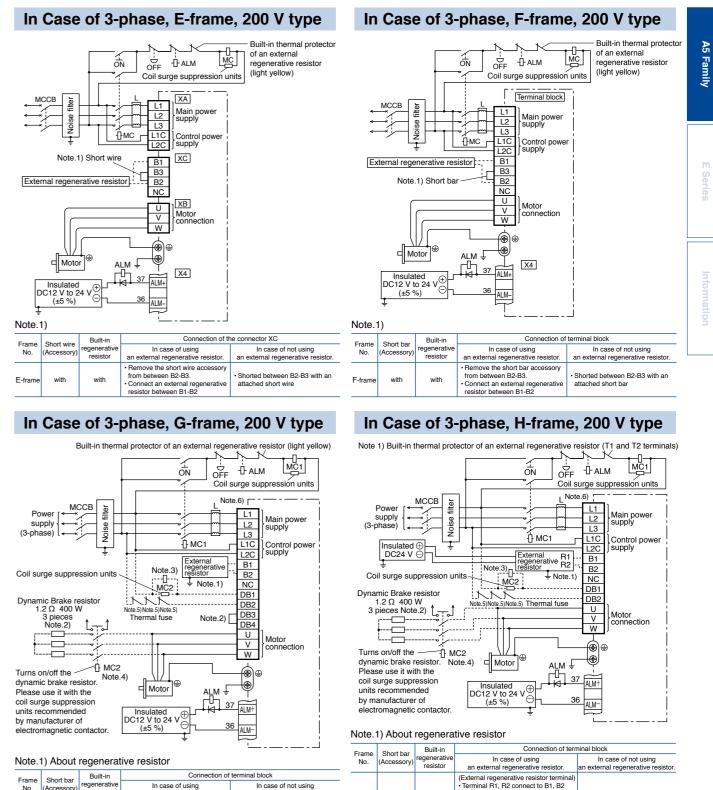
resistor between B1-B2

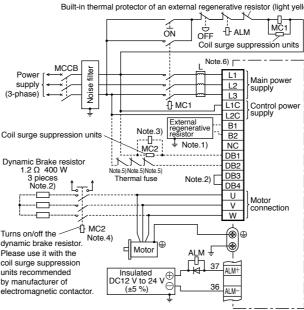
σŇ

In Case of MSME

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 resister between B1-B2	Shorted between B2-B3 with an attached short wire		

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





	· · · · · · · · · · · · · · · · · · ·						resision	an external regenerative resistor.	an external regenerative resistor.										
Fromo	Frame Short bar Built-in		Built-in Connection of terminal block					(External regenerative resistor terminal)											
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.				Terminal R1, R2 connect to B1, B2 Terminal T1, T2 connection as shown											
G-frame	without	without	Connect an external regenerative resistor between B1-B2	Open between B1-B2	H-frame	H-frame	H-frame	H-frame	H-frame	H-frame	ame without	H-frame without	without	without	without	frame without	without	above • Terminal 24 V, 0 V connect to DC power supply of DC24 V.	Open between B1-B2
Note.2) About dynamic brake resistor						E terminal connect to the ground													
-	Frame No. Short bar (Accessory) Built-in dynamic brake resistor. Connection of terminal block In case of using an external dynamic brake resistor. In case of using an external dynamic brake resistor. In case of not using an external dynamic brake resistor.		f terminal block	 Specification of external regenerative resistor, please refer to P.139, "Options Components". 															
			In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.	Note.2	2) About	dynamic b	orake resistor											
		Remove attached short bar			Fromo	Short bar	Built-in	Connection of t	erminal block										
G-frame	i-frame with with		between DB3-DB4. • Connect external dynamic brake	Shorted with attached short bar between DB3-DB4 Open between DB1-DB2	Frame No.	(Accessory)	dynamic brake resistor.	in case of doing	In case of not using an external dynamic brake resistor.										
common for G & H frames		H-frame	without	without	Connect external dynamic brake resistor as shown above.	Open between DB1-DB2													

<common for G & H frame>

Note.3) Magnetic contactor MC2 must be the same rating as the contactor MC1 in the main circuit. Note.4) Servo may be turned on in the external sequence if the contact deposits: to protect the system, provide the auxiliary contact. Note.5) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor. Note.6) Reactor should be prepared by the customer.

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

No.

A-frame B-frame

C-frame D-frame

vithou

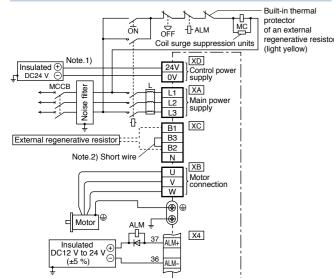
with

with

Wiring Diagram

Wiring to Connector, XA, XB, XC, XD and Terminal Block

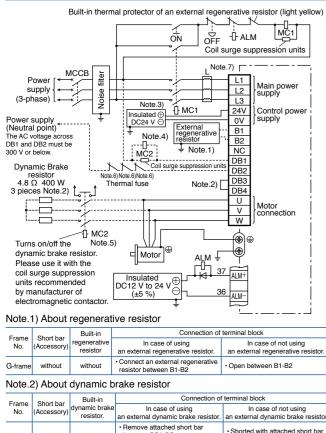
In Case of 3-phase, D-frame and E-frame, 400 V type



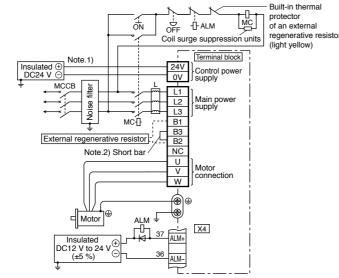
Note.1) Shielding the circuit is recommended for the purpose of noise reduction. Note.2)

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

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



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

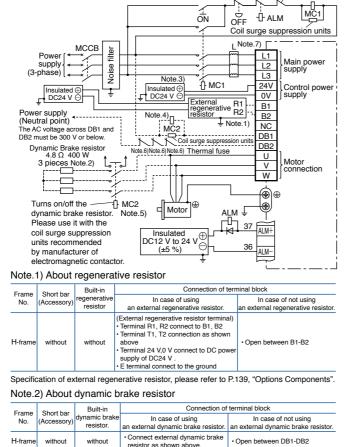


Note.1) Shielding the circuit is recommended for the purpose of noise reduction. Note.2)

	Short bar	Built-in	Connection of terminal block				
Frame Short ba No. (Accessor		regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.			
F-frame	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

Note 1) Built-in thermal protector of an external regenerative resistor (T1 and T2 terminals)



<common for G & H frame>

with

G-frar

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.

between DB3-DB4 • Open between DB1-DB2

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

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

en DB3-DB4

onnect external dynamic brake

Wiring to the Connector, X3 (Excluding A5IE, A5E Series)

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)

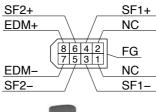
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit). When STO function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

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

Safety Precautions

- conforms to the safety requirements.
- assessment.
 - holding and it cannot be used for braking application.
 - not cause any problem.
- electrical angle (max.). Make sure that this does not cause any problem.
- disconnecting device.
- than failure monitoring.
- danger condition.
- When using STO function, connect equipment conforming to the safety standards.

[Connector pin assignment] (Viewed from cable)



System configuration



A5 Family

Safety Function

When using the STO function, be sure to perform equipment risk assessment to ensure that the system

· Even while the STO function is working, the following potential safety hazards exist. Check safety in risk

· 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

• 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

· When power transistor, etc., becomes defective, the motor will move to the extent equivalent of 180

 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

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

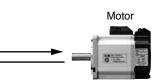
Panasonic Corporation Emergency stop switch

STO signal (Safe torque off)

EDM output



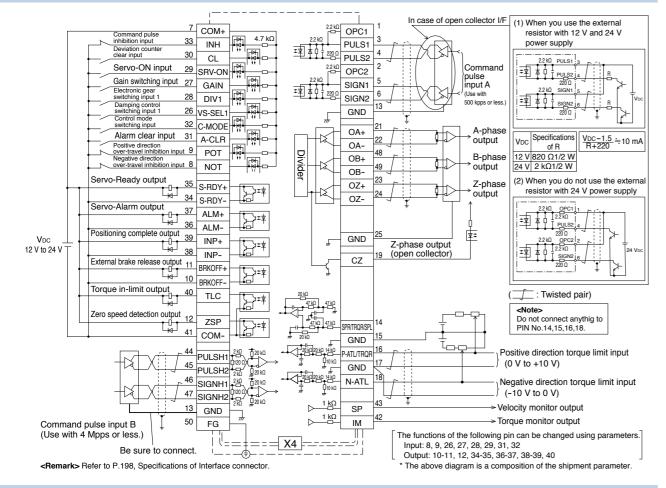




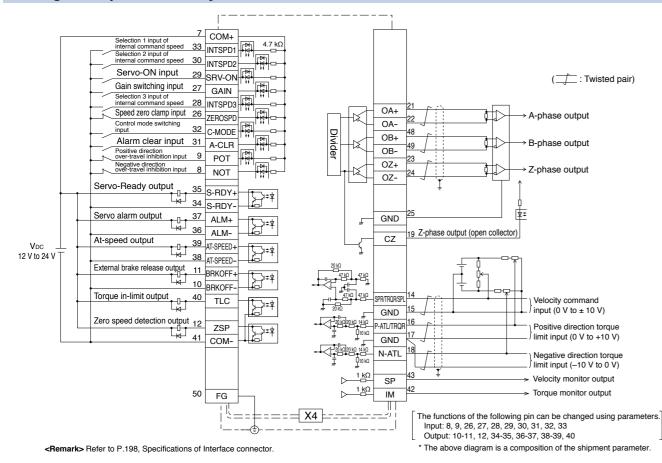
Panasonic Corporation Automotive & Industrial Systems Company http://panasonic.net/id/

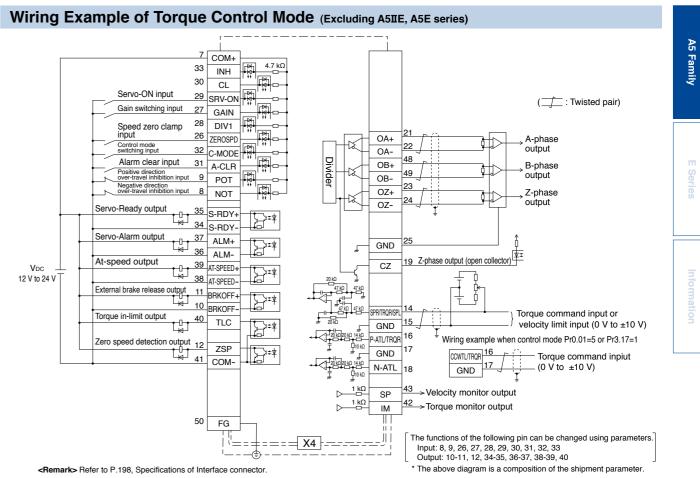
Wiring to the Connector, X4 **Control Circuit Diagram**

Wiring Example of Position Control Mode

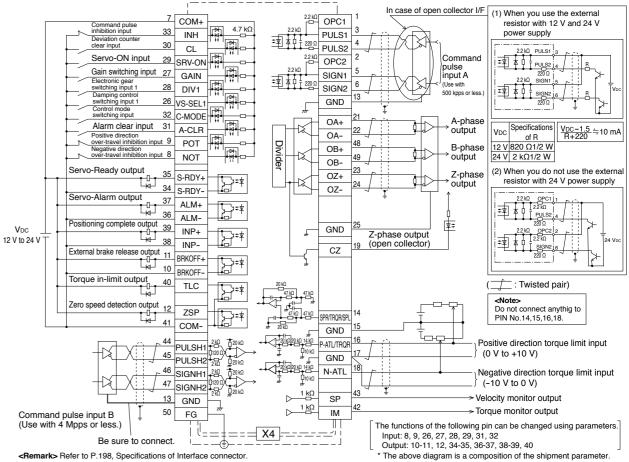


Wiring Example of Velocity Control Mode (Excluding A5IIE, A5E series)





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



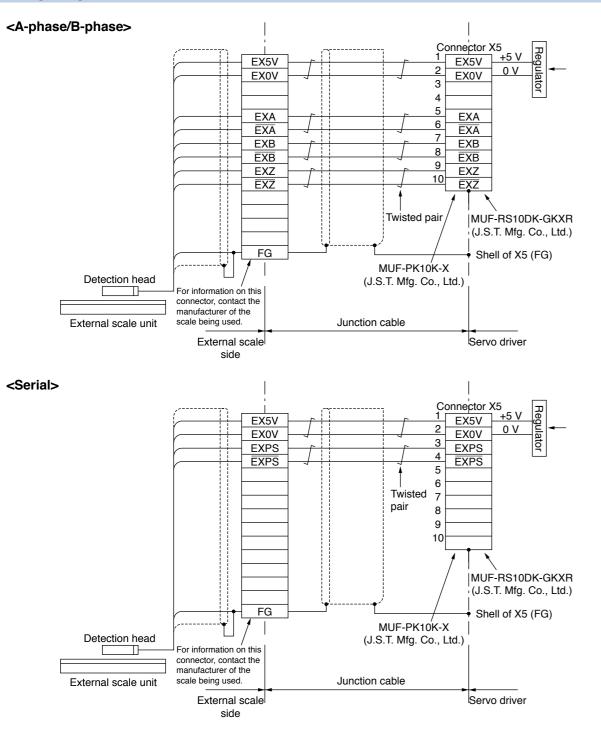
Wiring to the Connector, X5 (Excluding A5IIE, A5E series) **Control Circuit Diagram**

Applicable External Scale

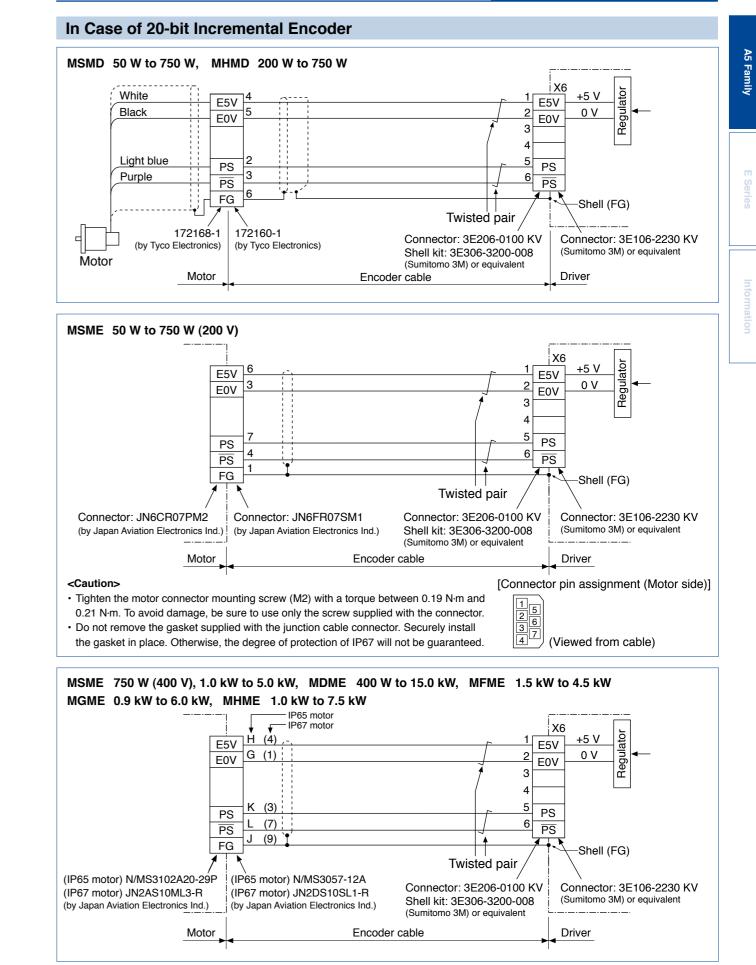
The manufacturers applicable external scales for this product are as follows.

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

Wiring Diagram of X5



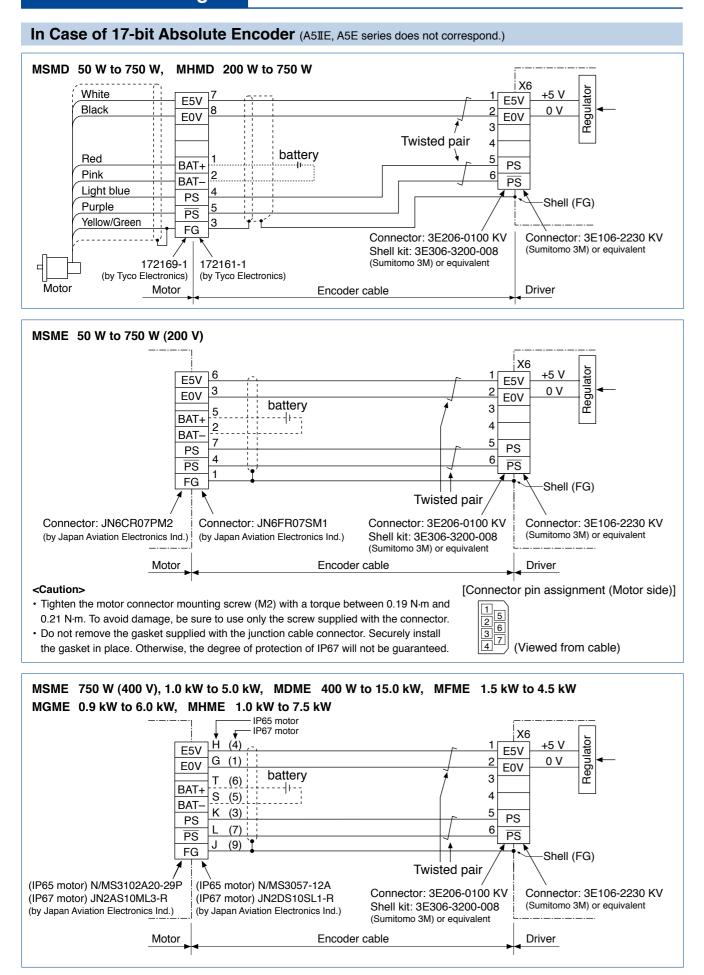
Wiring to the Connector, X6



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

A5 Family **Control Circuit Diagram**

Wiring to the Connector, X6 **Control Circuit Diagram**



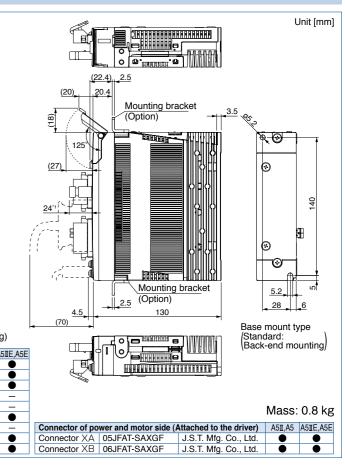
[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

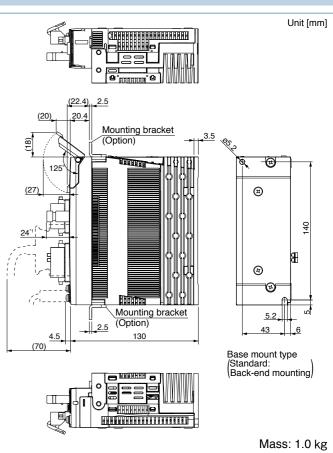
A-frame X1: USB connector X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector X5: For external scale connection X6: For encoder connection X7: For analog monitor signal connection XA: Main power ŦŢ input terminals -X1 б -X2 Control power input terminals n -X3 8 2 2 XB -X4 Terminals for external regenerative resistor Terminals for motor BÖ connection -X5 ŏœ -X6 ŏŒ Name plate 5.2 7 Rack mount type (Option: Front-end mounting) Connector of driver side A5II,A5 A5IIE,A5E 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. Connector X2 1-2040537-1 (or equivalent) Tyco Electronics Connector X3 2040537-1 (or equivalent Tyco Electronics Connector X4 10250-52A2PE (or equivalent Sumitomo 3M J.S.T. Mfg. Co., Ltd. Connector X5 MUF-RS10DK-GKXR (or equivalent) • Connector X6 3E106-2230 KV (or equivalent) Sumitomo 3M Connector X7 530140610 (or equivalent Japan Molex Inc. ۲ • **B**-frame X1: USB connector X2: BS232/485 communication connector X3: Safety function connector X4: Interface connector 47 X5: For external scale connection X6: For encoder connection \$5 X7: For analog monitor signal connection X7 XA B -X1 Main power ⊢x2 input terminals -x3 Control power 20 input terminals XB Terminals for external -X4 regenerative resistor Terminals for motor G -X5 П connection ŏœ ŏle ⊢x6 Name plate . 5.2 7 Rack mount type (Option: Front-end mounting) * For connectors used to connect to the driver, power supply and motor, refer to the A-frame table because both frames use the same connectors.

 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.

A5 Family **Dimensions of Driver**



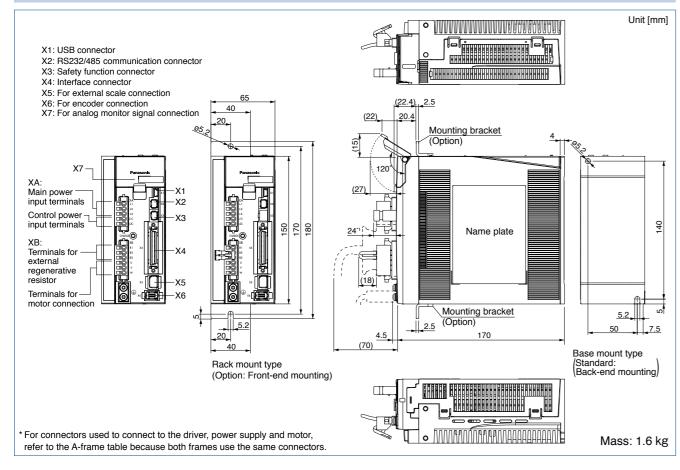




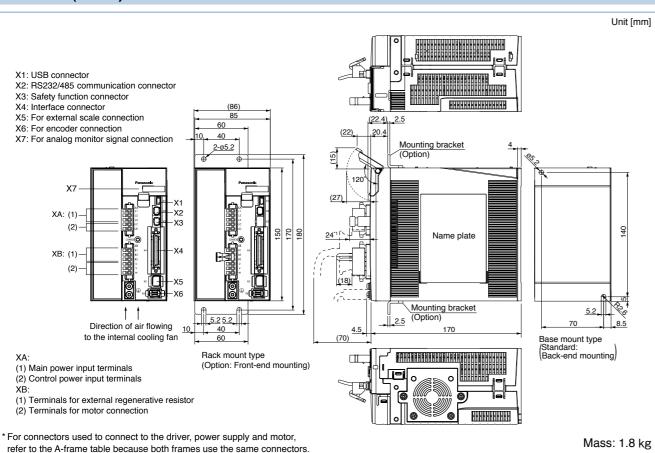
Dimensions of Driver

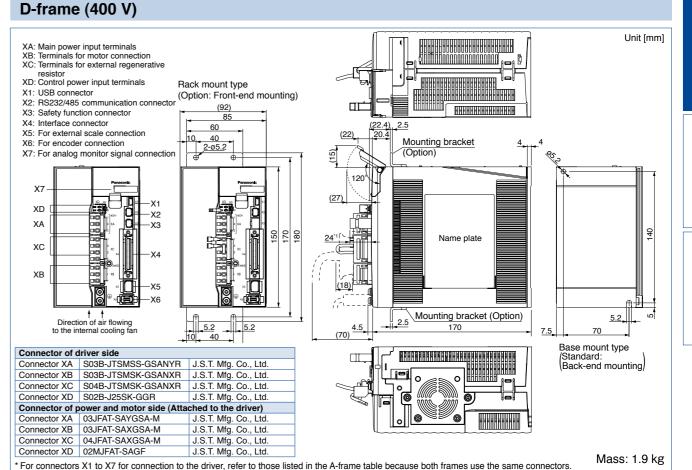
• The size of A5II, A5 series and A5IIE, A5E series is same. *1 The height of the safety by-pass provided plug is one of the 14 mm or 24 mm to connector X3.

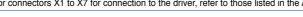
C-frame

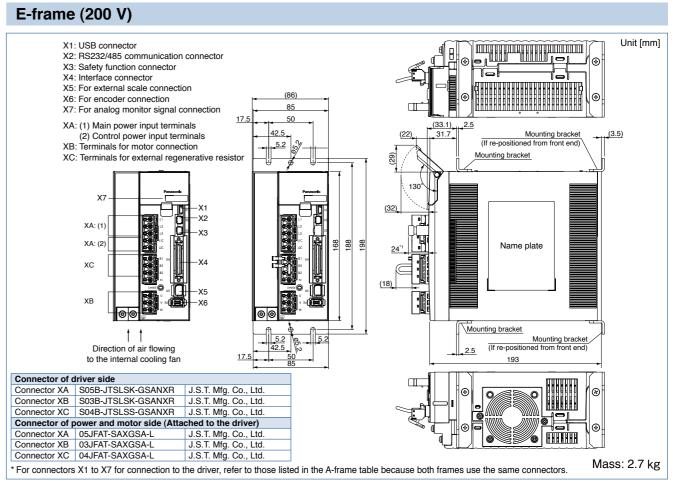


D-frame (200 V)



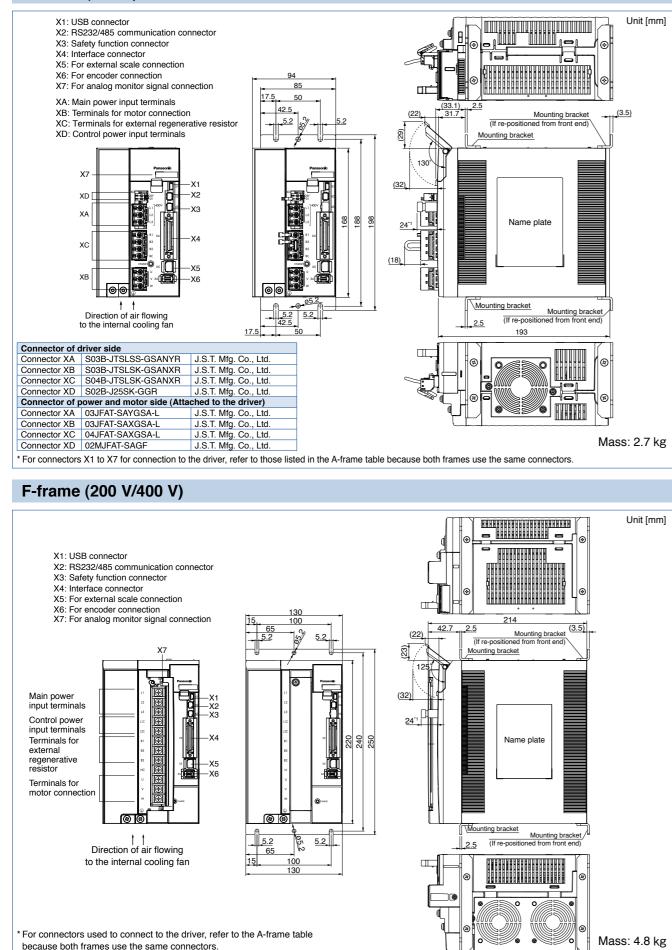






Dimensions of Driver

E-frame (400 V)



• 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.

G-frame (200 V/400 V) * A5IIE, A5E series is out of the lineup. ø Ā Main power input terminals Control power input terminals Terminals for external regenerative resistor ī 隨 Terminals for motor -Connector X6: connection For encoder connection 80 t t Direction of air flowing to the internal cooling fan 233 210 90 90 72 90 5.2 5.2 G 0 딕 22020 881 M 5.2 IV 5.2 5.2 90 72 210

* For connectors used to connect to the driver, refer to the A-frame table because both frames use the same connectors.

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Connector X7: For analog monitor signal connection

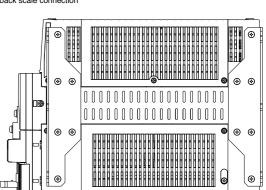
Connector X1: USB connector

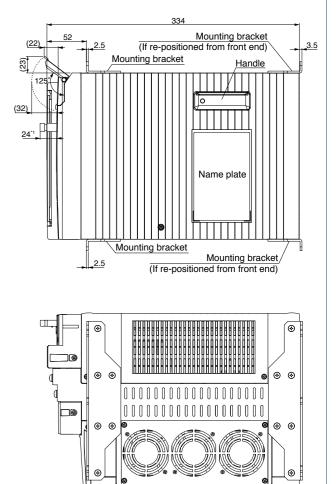
Connector X2: RS232/485 communication connector

-Connector X3: Safety function connector

Connector X4: Parallel I/O connector

Connector X5: For feedback scale connection





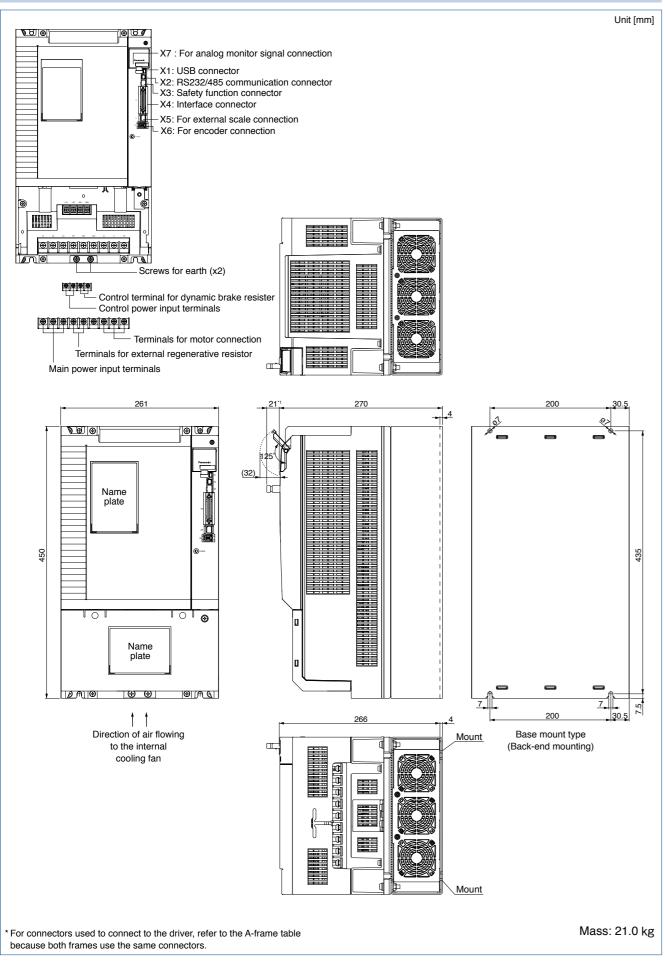
A5 Family

Unit [mm]

 A5IE, A5E series is out of the lineup. **Dimensions of Driver**

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

H-frame (200 V/400 V)

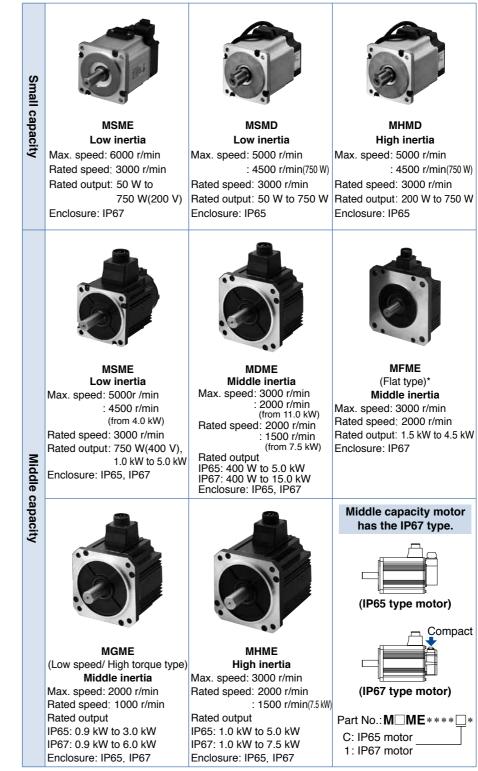


Features/Lineup

Features

- Line-up IP65 motor: 50 W to 5.0 kW IP67 motor: 50 W to 15.0 kW
- Max speed: 6000r/min (MSME 50 W to 750 W)
- · Low inertia (MSME) to High inertia (MHME).
- · Low cogging torque: Rated torque ratio 0.5 % (typical value).
- 20-bit incremental encoder (1048576 pulse)
- 17-bit absolute encoder (131072 pulse).

Motor Lineup



A5 Family **Motor Specifications**

A5 Family



: 4500 r/min(750 W)



Motor Contents

MSMD ((100 V/200 V)	
50 W to	750 W F	.49

MHMD (100 V/200 V) 200 W to 750 W P.59

MSME (100 V/200 V) . P.65 50 W to 750 W

MSME (200 V) 1.0 kW to 5.0 kW. . P.74

MDME (200 V) 1.0 kW to 15.0 kW. . P.80

MFME (200 V) 1.5 kW to 4.5 kW . P.89

MGME (200 V) 0.9 kW to 6.0 kŴ . 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. .P.111

MFME (400 V) 1.5 kW to 4.5 kW P.122

MGME (400 V) 0.9 kW to 6.0 kW P.125

MHME (400 V) 1.0 kW to 7.5 kW P.130

IP67 motor P.137 dimensions..

Motors with Gear Red	lucer
Type and Specifications	P.141
Model No. designation	P.142
The combination of the drive	r
and the motor	P.142
Table of motor specifications	P.143
Torque Characteristics of Mo	tor
	P.144
Dimensions of Motor	P.147

Motor Specification Description

Environmental Conditions.... P.182 Notes on [Motor specification] . P.182 page. Permissible Load at Output Shaft... P.183 Built-in Holding Brake P.184

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Motor Specifications

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

Specifications

				AC1	00 V	
Motor model	IP65			MSMD5AZG1	MSMD5AZS1	
		IP67		-	-	
Annlinghle	Model	A5II, A5	series	MAD	T1105	
Applicable driver *2	No.	A5IIE, A	5E series	MAD \bigcirc T1105E	-	
unver	Fr	ame sym	bol	A-fra	ame	
Power supply	capacit	у	(kVA)	0	.5	
Rated output			(W)	5	0	
Rated torque			(N·m)	0.	16	
Momentary M	ax. peal	k torque	(N·m)	0.48		
Rated current		(A(rms))	1.1		
Max. current		((A(o-p))	4.7		
Regenerative I	orake	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	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	0.025		
of rotor (×10 ⁻⁴	kg∙m²)	With b	orake	0.0)27	
	Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per sing	le turn	1048576	131072	

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

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

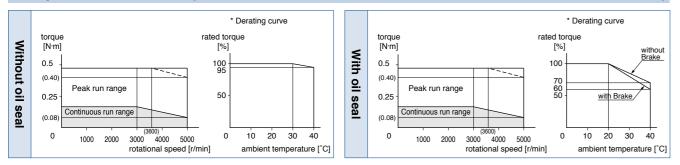
• Permissible load (For details, refer to P.183)

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc 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>

<IP65> <D-cut shaft> (a) Encoder connector (b) Motor connector 20 1 Use hexagon socket head screw for installation <Key way, center tap shaft> 38 4-03.4° M3 depth 6 26.5 * For the dimensions with brake, refer to the right page.

[Unit: mm]

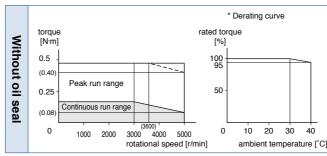
Mass: 0.32 kg

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

Specifications

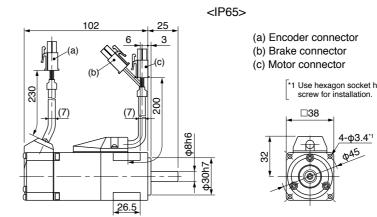
Specific	ation	S						
			AC2	00 V		specifications (For details	,	
Matan	IP65		MSMD5AZG1 MSMD5AZS1		(This brake will be released when it is energized. Do not use this for braking the motor in motion.)			
Motor model *1		IP67	-	_	Static friction torque (N·m) 0.2		0.29 or more	
.	Model	A5II, A5 series	MAD	T1505	Engagin	g time (ms)	35 or less	
Applicable driver *2	No.	A5IIE, A5E series	MAD \bigcirc T1505E	_	Releasir	ng time (ms) Note)4	20 or less	
unver	Fi	ame symbol	A-fr	ame	Exciting	current (DC) (A)	0.3	
Power supply	capacit	y (kVA)	0	.5	Releasir	ig voltage (DC) (V)	1 or more	
Rated output		(W)	5	0		voltage (DC) (V)	24±1.2	
Rated torque		(N·m)	0.16					
Momentary N	lax. pea	k torque (N·m)	0.48		Permi	ssible load (For details, refe	er to P.183)	
Rated curren	t	(A(rms))	1.1			Radial load P-direction (N)	147	
Max. current		(A(o-p))	4.7		During	Thrust load A-direction (N)	88	
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	117.6	
frequency (times	/min) Note)1	DV0P4281	No limit Note)2		During	Radial load P-direction (N)	68.6	
Rated rotatio	nal spee	d (r/min)	3000		During operation			
Max. rotation	al speed	(r/min)	5000			Thrust load A, B-direction (N)	58.8	
Moment of in		Without brake	0.0)25	 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.42. *1 Motor specifications: 			
of rotor (×10	^₄ kg·m²)	With brake	0.0)27				
	Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		 *1 Motor specifications. *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encod	er speci	fications Note)5	20-bit 17-bit Incremental Absolute		Detail of model designation, refer to P.16. *3 \bigcirc in number of applicable driver represents the			
F	Resolutio	n per single turn	1048576	131072	series. For more information about the part number			

Torque characteristics (at AC200 V of power voltage <Dotted line represents the torque at 10 % less supply voltage.>) * Derating curv * Derating curve torque [N·m] rated torque rated torque torque . [N·m] [%] without With 0.5 0.5 100 100 95 (0.4 (0.40 i oil seal Peak run range Peak run range 50 0.25 0.25 with Brake Continuous run range Continuous run range (0.08 (0.0 0 10 20 30 40 0 0 0 10 20 30 40 1000 2000 3000 4000 5000 1000 2000 3000 4000 5000 rotational speed [r/min] ambient temperature [°C] rotational speed [r/min] ambient temperature [°C]



Dimensions

<With Brake>

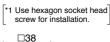


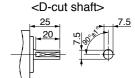
* For the dimensions without brake, refer to the left page. <Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

A5 Family **Motor Specifications**

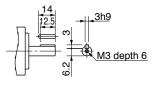
please refer to P.16.

Mass: 0.53 kg





<Key way, center tap shaft>



[Unit: mm]

Motor Specifications

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

Specifications

			AC1	00 V		
Motor model	IP65			MSMD011G1	MSMD011S1	
WIOTOF MODEI *1		IP67		-	-	
A secolities a la la	Model	A5II, A5	series	MAD	T1107	
Applicable driver *2	No.	A5IIE, A	5E series	MAD \bigcirc T1107E	-	
unver	Fi	ame sym	bol	A-fra	ame	
Power supply	capacit	у	(kVA)	0	.4	
Rated output			(W)	1(00	
Rated torque			(N·m)	0.	32	
Momentary M	ax. pea	k torque	(N·m)	0.95		
Rated current		(A(rms))	1.7		
Max. current			(A(o-p))	7.2		
Regenerative I	orake	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	ertia	Without	brake	0.051		
of rotor (×10 ⁻⁴	kg∙m²)	With b	orake	0.054		
	Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

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

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

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

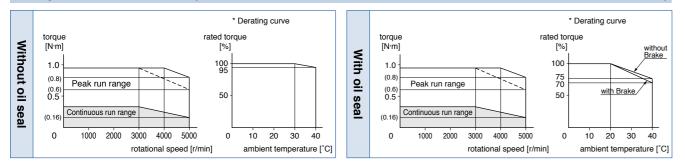
• For details of Note 1 to Note 5, refer to P.182, P.183.

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

Mass: 0.47 kg

[Unit: mm]

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



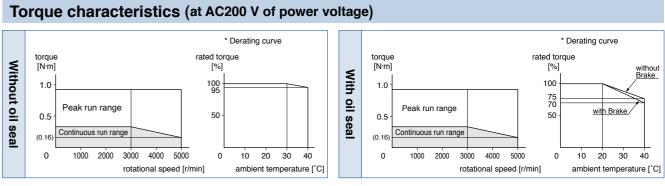
Dimensions

<Without Brake> <IP65> <D-cut shaft> 25 (a) Encoder connector 3 (b) Motor connector 20 1 Use hexagon socket head screw for installation □38 <Key way, center tap shaft> 4-**0**3.4° M3 depth (46.5 * 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 100 W [Low inertia, Small capacity]

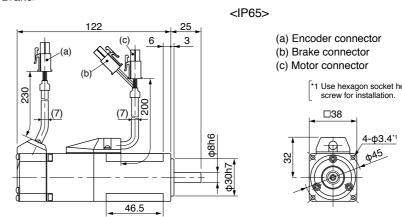
Specifications

•							
		AC200 V		Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)			
Motor model	IP65		MSMD012G1	MSMD012S1			
*1		IP67	-	-	Static fri	Static friction torque (N·m)	
Annlinghle	Model	A5II, A5 series	MAD¢	T1505	Engagin	g time (ms)	35 or less
Applicable driver *2	No.	A5IIE, A5E series	MAD \bigcirc T1505E	-	Releasir	ng time (ms) Note)4	20 or less
	Fr	ame symbol	A-fr	ame	Exciting	current (DC) (A)	0.3
Power supply	capacit	y (kVA)	0.	.5	Releasir	ng voltage (DC) (V)	1 or more
Rated output		(W)		00	Exciting	voltage (DC) (V)	24±1.2
Rated torque		(N·m) 0.32					
Momentary M	Momentary Max. peak torque (N·m)				• Permissible load (For details, refer to P.183)		er to P.183)
Rated current		(A(rms))	(A(rms)) 1.1			Radial load P-direction (N)	147
Max. current		(A(o-p))	4	.7	During	Thrust load A-direction (N)	88
Regenerative b		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	117.6
frequency (times/	min) Note)1	DV0P4281	No limit Note)2		During	Radial load P-direction (N)	68.6
Rated rotation	al spee	d (r/min)	3000		During operation	()	58.8
Max. rotationa	l speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	0.60
Moment of ine		Without brake	0.051		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.42. 		
of rotor (×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		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 \bigcirc in number of applicable driver represents th		P.16.	
Resolution per single turn			1048576	131072	series. For more information about the part number, please refer to P 16		



Dimensions

<With Brake>

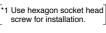


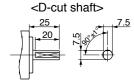
* For the dimensions without brake, refer to the left page. <Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

A5 Family Motor Specifications

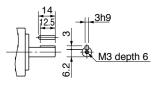
- please refer to P.16.

Mass: 0.68 kg





<Key way, center tap shaft>



[Unit: mm]

Motor Specifications

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

Specifications

			AC1	00 V		
Motor model		IP65	MSMD021G1	MSMD021S1		
wotor model *1		IP67	-	-		
Annlinghla	Model	A5II, A5 series	MBD	T2110		
Applicable driver *2	No.	A5IIE, A5E series	MBD OT2110E	_		
differ	Fr	ame symbol	B-fr	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.	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)	50	00		
Moment of ine	ertia	Without brake	0.	14		
of rotor (×10 ⁻²	kg∙m²)	With brake	0.	16		
	Recommended moment of inertia ratio of the load and the rotor Note)3			s or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute		
F	lesolutio	n per single turn	1048576	131072		

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

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

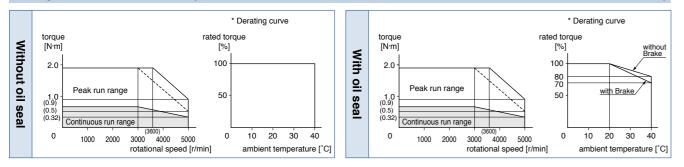
• Permissible load (For details, refer to P.183)

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

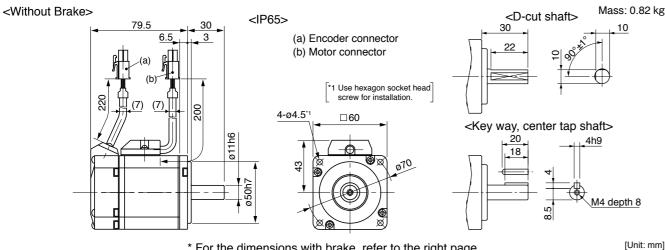
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc 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

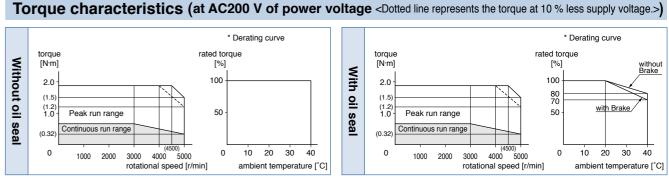


* For the dimensions with brake, refer to the right page. Reduce the moment of inertia ratio if high speed response operation is required.

<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.

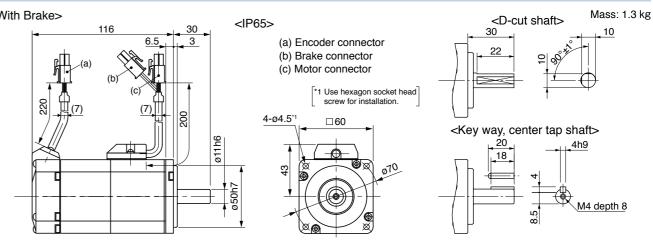
200 V MSMD 200 W [Low inertia, Small capacity]

Specific	ation	S					
		AC200 V		• 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.)			
Motor model		MSMD022G1 MSMD022S1					
		IP67	-	-	Static fri	ction torque (N·m)	1.27 or more
A 12 1.1	Model	A5II, A5 series	MAD	T1507	Engagin	g time (ms)	50 or less
Applicable driver **	No.	A5IIE, A5E series	MAD OT1507E	-	Releasir	ng time (ms) Note)4	15 or less
unvor	Fi	ame symbol	A-fr	ame	Exciting	current (DC) (A)	0.36
Power suppl	y capacit	y (kVA)	0	.5	Releasir	ng voltage (DC) (V)	1 or more
Rated outpu		(W)	200		Exciting	Exciting voltage (DC) (V)	
	Rated torque (N·m)		0.64				
Momentary	Max. pea	k torque (N·m)	1.91		• Permi	ssible load (For details, refe	er to P.183)
Rated currer	nt	(A(rms))	1	.6	During	Radial load P-direction (N)	392
Max. current		(A(o-p))	6	6.9		Thrust load A-direction (N)	147
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	196
frequency (time		D V 01 4200		it Note)2	During	Radial load P-direction (N)	245
Rated rotation		()	3000		operation	Thrust load A, B-direction (N)	98
Max. rotation	nal speed	, , ,	50	000	<u> </u>	, , , , , , , , , , , , , , , , , , , ,	
Moment of in		Without brake	0.	14	• For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×10	⁻⁴ kg·m²)	With brake	0.16		• Dimensions of Driver, refer to P.42.		
	Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		 *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 		
Rotary enco	Rotary encoder specifications Note)5		20-bit 17-bit Incremental Absolute				P.16.
Resolution per single turn			1048576	131072	series. For more information about the part number,		



Dimensions

<With Brake>



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

A5 Family Motor Specifications

please refer to P.16.

[Unit: mm]

54

Motor Specifications

100 V MSMD 400 W [Low inertia, Small capacity]

Specifications

			AC1	00 V		
Motor model		IP65		MSMD041G1	MSMD041S1	
wotor model *1		IP67		-	-	
Applicable	Model	A5II, A5	series	MCD	T3120	
Applicable driver *2	No.	A5IIE, A	5E series	MCD \bigcirc T3120E	_	
unver	Fi	rame sym	bol	C-fr	ame	
Power supply	capacit	у	(kVA)	0	.9	
Rated output			(W)	40	00	
Rated torque			(N·m)	1	.3	
Momentary M	ax. pea	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	DV0P4282		No limit Note)2		
Rated rotatior	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	0.26		
of rotor (×10-	¹ 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 encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per sing	le turn	1048576	131072	

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

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

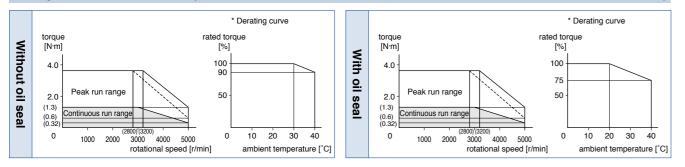
• Permissible load (For details, refer to P.183)

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

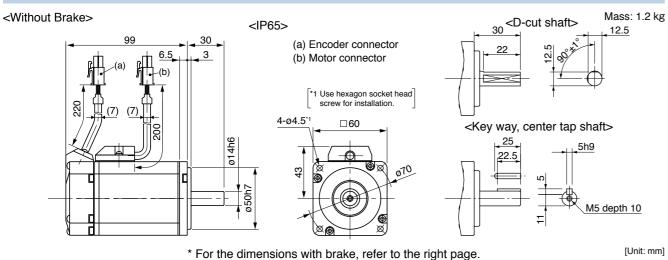
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.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 AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

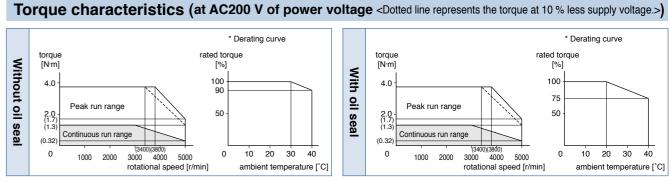


<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

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

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

Specific	ation	S					
		AC200 V		• Brake specifications (For details, refer to P.183)			
Motor model		MSMD042G1 MSMD042S1		(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)			
		IP67	_	-	Static fri	ction torque (N·m)	1.27 or more
	Model	A5II, A5 series	MBD	T2510	Engagin	g time (ms)	50 or less
Applicable driver *	No.	A5IIE, A5E series	MBD OT2510E	-	Releasir	ng time (ms) Note)4	15 or less
unver	Fi	ame symbol	B-fr	ame	Exciting	current (DC) (A)	0.36
Power supp	y capacit	y (kVA)	0	.9	Releasir	ng voltage (DC) (V)	1 or more
Rated output	t	(W)	400		Excitina	Exciting voltage (DC) (V)	
Rated torque	Rated torque (N·m)		1.3		Exciting voltage (DC) (V) 24±1.2		
Momentary	Max. pea	k torque (N·m)	3.8		• Permi	ssible load (For details, refe	er to P.183)
Rated current	nt	(A(rms))	2.6			Radial load P-direction (N)	392
Max. current		(A(o-p))	11.0		During	Thrust load A-direction (N)	147
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	196
frequency (time	s/min) Note)1	DV0P4283	No lim	it Note)2	During	Radial load P-direction (N)	245
Rated rotation	nal spee	d (r/min)	3000		During operation		
Max. rotation	nal speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	98
Moment of in		Without brake	0.26		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.42. 		
of rotor (×10	^{−4} kg·m²)	With brake	0.28				
	Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5		fications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents		P.16.
	Resolutio	n per single turn	1048576	131072	series. For more information about the part number,		



Dimensions

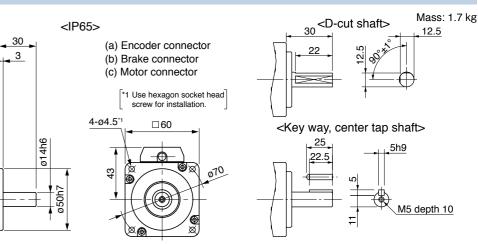
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<With Brake>



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* 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.

A5 Family **Motor Specifications**

please refer to P.16.

[Unit: mm]

56

Motor Specifications

200 V MSMD 750 W [Low inertia, Small capacity]

Specifications

			AC2	00 V		
Motor model		IP65		MSMD082G1	MSMD082S1	
		IP67		-	-	
Applicable	Model	A5II, A5	series	MCD	> T3520	
Applicable driver *2	No.	A5IIE, A	5E series	MCD \bigcirc T3520E	-	
diver	Fi	rame sym	ibol	C-fr	ame	
Power supply	capacit	у	(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))	4.0		
Max. current			(A(o-p))	17.0		
Regenerative I	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)	45	00	
Moment of ine	ertia	Without	t brake	0.87		
of rotor (×10 ⁻⁴	kg∙m²)	With t	orake	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	
F	lesolutio	n per sing	le turn	1048576	131072	

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

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

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

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

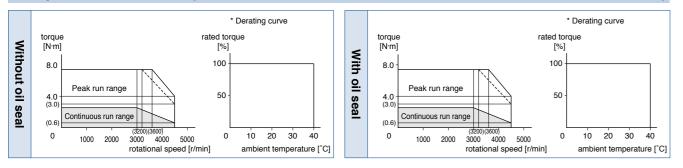
• For details of Note 1 to Note 5, refer to P.182, P.183.

Dimensions of Driver, refer to P.43.

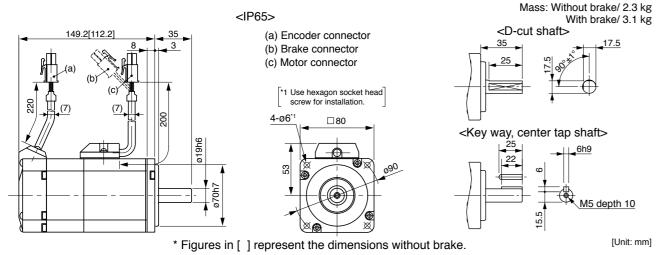
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 ◇ in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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



Dimensions



<Cautions> 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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Motor Specifications

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

Specifications

			AC1	00 V	
Motor model		IP65		MHMD021G1	MHMD021S1
WOLOF MODEI *1		IP67		-	-
Applicable	Model	A5II, A5	series	MBD	T2110
Applicable driver *2	No.	A5IIE, A	5E series	MBD OT2110E	_
unver	Fi	rame sym	bol	B-fra	ame
Power supply	capacit	у	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.	64
Momentary N	lax. pea	k torque	(N·m)	1.91	
Rated current		(.	A(rms))	2.5	
Max. current		((A(o-p))	10.6	
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. rotation	al speed		(r/min)	5000	
Moment of ine	ertia	Without	brake	0.4	42
of rotor (×10-	¹ kg∙m²)	With b	orake	0.45	
	Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn			1048576	131072

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

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

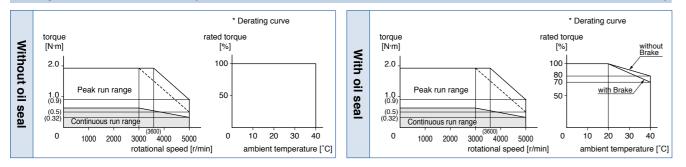
• Permissible load (For details, refer to P.183)

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

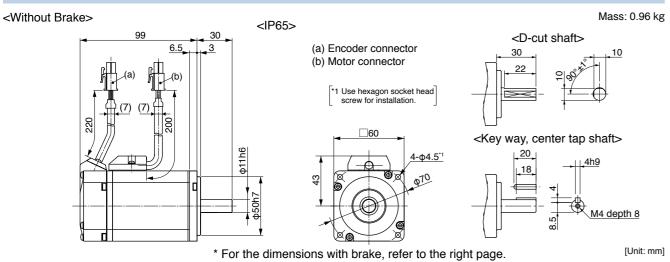
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc 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



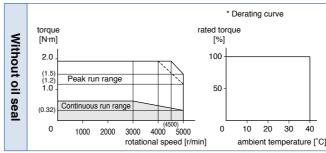
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

Specifications

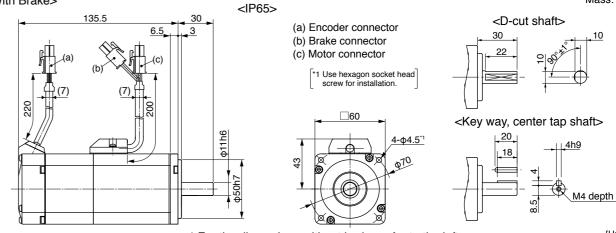
Specific	ation	S					
			AC2	00 V		specifications (For details	
Madan madal		IP65	MHMD022G1	MHMD022S1	(This brake will be released when it is energized. Do not use this for braking the motor in motion.		
Motor model *1		IP67	_	_	Static fri	ction torque (N·m)	1.27 or more
	Model	A5II, A5 series	MAD	T1507	Engagin	g time (ms)	50 or less
Applicable driver *2	No.	A5IIE, A5E series	MAD OT1507E	_	Releasir	ng time (ms) Note)4	15 or less
unver	Fr	ame symbol	A-fr	ame	Exciting	current (DC) (A)	0.36
Power supply	capacit	y (kVA)	0.	.5	Releasir	ng voltage (DC) (V)	1 or more
Rated output		(W)	20	00	Excitina	voltage (DC) (V)	24±1.2
Rated torque		(N·m)	0.64			· · · · · · · · · · · · · · · · · · ·	
Momentary N	lax. peal	k torque (N·m)	1.9	91	 Permi 	ssible load (For details, refe	er to P.183)
Rated curren	t	(A(rms))	1.	.6		Radial load P-direction (N)	392
Max. current		(A(o-p))	6	.9	During	Thrust load A-direction (N)	147
Regenerative		Without option	No limi	it Note)2	assembly	Thrust load B-direction (N)	196
frequency (times	/min) Note)1	DV0P4283	No limi	it Note)2	During	Radial load P-direction (N)	245
Rated rotatio	nal spee	d (r/min)	30	00	During operation	Thrust load A, B-direction (N)	98
Max. rotation	al speed	(r/min)	50	00	operation	Thrust load A, B-direction (N)	98
Moment of in		Without brake	0.42		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.42. 		
of rotor (×10	⁴ kg·m²)	With brake	0.45				
Recommended moment of inertia 30 times or less *1 Motor specifications: □ ratio of the load and the rotor Note)3 30 times or less							
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		
Resolution per single turn			1048576	131072	series. For more information about the part number,		

Torque characteristics (at AC200 V of power voltage <Dotted line represents the torque at 10 % less supply voltage.>) * Derating curv * Derating curve torque [N·m] rated torque rated torque torque . [N·m] [%] [%] With 2.0 100 2.0 100 80 70 ≌. Peak run range Peak run range with Brake 50 50 sea Continuous run rang Continuous run rand (0.32) (0.32) 0 10 20 30 40 10 20 30 40 0 0 0 1000 2000 1000 2000 3000 4000 5000 3000 4000 5000 rotational speed [r/min] ambient temperature [°C] rotational speed [r/min] ambient temperature [°C]



Dimensions

<With Brake>



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

A5 Family Motor Specifications

please refer to P.16.

Mass: 1.4 kg

60

[Unit: mm]

Motor Specifications

100 V MHMD 400 W [High inertia, Small capacity]

Specifications

			AC1	00 V	
Motor model		IP65		MHMD041G1	MHMD041S1
wotor model *1		IP67		-	-
Applicable	Model	A5II, A5	series	MCD	>T3120
Applicable driver *2	No.	A5IIE, A	5E series	MCD \bigcirc T3120E	-
unver	Fi	ame sym	bol	C-fr	ame
Power supply	capacit	у	(kVA)	0	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1	.3
Momentary N	lax. pea	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	DV0P4282		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	5000	
Moment of in	ertia	Without	t brake	0.67	
of rotor (×10-	⁺ kg·m²)	With t	orake	0.70	
	Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn				131072

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

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

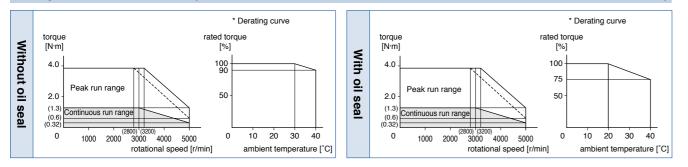
• Permissible load (For details, refer to P.183)

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

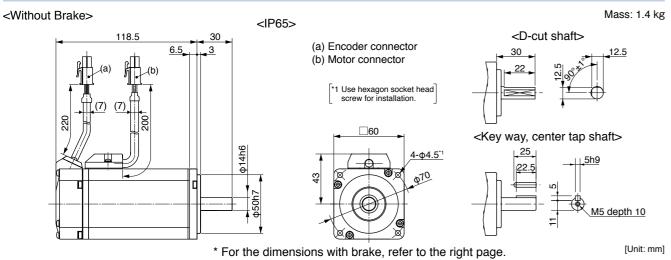
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc 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

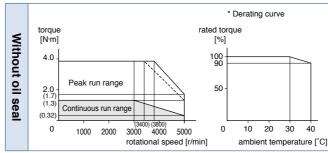


<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

200 V MHMD 400 W [High inertia, Small capacity]

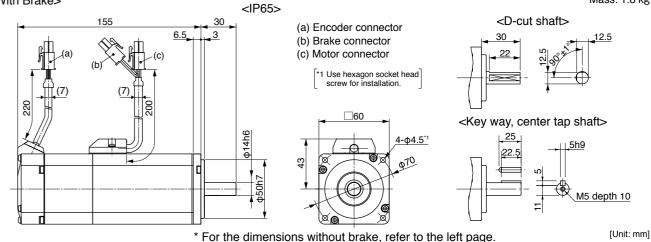
Specific	ation	s					
		AC200 V			• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)		
Motor model		IP65	MHMD042G1	MHMD042S1		use this for braking the motor in	
		IP67	_	_	Static fri	ction torque (N·m)	1.27 or more
Annikashia	Model	A5II, A5 series	MBD¢	T2510	Engagin	g time (ms)	50 or less
Applicable driver *2	No.	A5IIE, A5E series	MBD 	-	Releasir	ng time (ms) Note)4	15 or less
	Fr	ame symbol	B-fra	ame	Exciting	current (DC) (A)	0.36
Power suppl	y capacit	y (kVA)	0	.9	Releasir	ng voltage (DC) (V)	1 or more
Rated output		(W)	40	00	Exciting	voltage (DC) (V)	24±1.2
Rated torque		(N·m)	1.	.3			
Momentary I	/lax. peal	k torque (N·m)	3.8		Permi	Permissible load (For details, refer to P.183)	
Rated currer	t	(A(rms))	2	.6		Radial load P-direction (N)	392
Max. current		(A(o-p))	11	.0	During	Thrust load A-direction (N)	147
Regenerative		Without option	No limi	t Note)2	assembly	Thrust load B-direction (N)	196
frequency (time	s/min) Note)1	DV0P4283	No limi	t Note)2	Durin r	Radial load P-direction (N)	245
Rated rotation	nal spee	d (r/min)	30	00	During operation		
Max. rotation	al speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	98
Moment of ir	ertia	Without brake	0.67		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.42. 		
of rotor (×10	⁴ kg·m²)	With brake	0.70				
Recommended moment of inertia ratio of the load and the rotor Note)3		*1 Motor specifications: 30 times or less *2 The product that the end of d docignation has "E" is "Positiv		-			
Rotary enco	Rotary encoder specifications Note)5			17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		
Resolution per single turn			1048576	131072	series. For more information about the part number,		

Torque characteristics (at AC200 V of power voltage <Dotted line represents the torque at 10 % less supply voltage.>) * Derating curv * Derating curve torque [N·m] rated torque rated torque torque [N·m] [%] [%] With 4.0 100 100 90 4.0 i oil seal 75 Peak run range Peak run range 50 2. 50 2.0 Continuous run range Continuous run range (0.32 10 20 30 40 0 0 10 20 30 40 0 0 1000 2000 3000 4000 5000 1000 2000 3000 4000 5000 rotational speed [r/min] ambient temperature [°C] rotational speed [r/min] ambient temperature [°C]



Dimensions

<With Brake>



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

A5 Family **Motor Specifications**

please refer to P.16.

Mass: 1.8 kg

Motor Specifications

200 V MHMD 750 W [High inertia, Small capacity]

Specifications

			AC2	00 V		
Motor model		IP65		MHMD082G1	MHMD082S1	
wotor model *1		IP67		-	-	
Appliaghla	Model	A5II, A5	series	MCD<	> T3520	
Applicable driver *2	No.	A5IIE, A	5E series	MCD \ T3520E	_	
unver	Fi	ame sym	bol	C-fr	ame	
Power supply	capacit	у	(kVA)	1	.3	
Rated output			(W)	7	50	
Rated torque			(N·m)	2	.4	
Momentary N	lax. pea	k torque	(N·m)	7.1		
Rated current		(A(rms))	4.0		
Max. current			(A(o-p))	17.0		
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. rotation	al speed		(r/min)	4500		
Moment of in	ertia	Without	t brake	1.	51	
of rotor (×10-	¹ kg∙m²)	With t	orake	1.61		
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolution per single turn				131072	

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

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

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

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

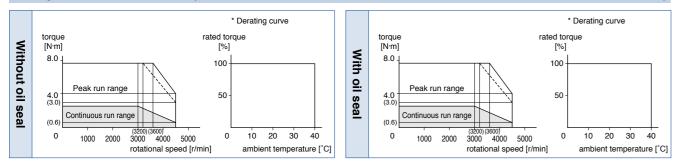
• For details of Note 1 to Note 5, refer to P.182, P.183.

Dimensions of Driver, refer to P.43.

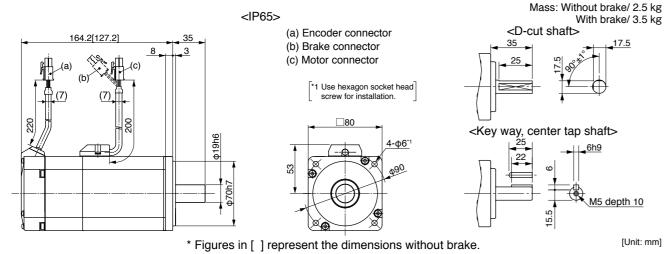
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 ◇ in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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



Dimensions



<Cautions> 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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Motor Specifications

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

Specifications

			AC1	00 V		
Motor model		IP65		-	-	
*1		IP67		MSME5AZG1	MSME5AZS1	
Amplicable	Model	A5II, A5	series	MAD	T1105	
Applicable driver *2	No.	A5IIE, A	5E series	MAD \bigcirc T1105E	-	
unver	Fi	rame sym	bol	A-fr	ame	
Power supply	capacit	у	(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	orake	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	al speed		(r/min)	6000		
Moment of ine	ertia	Without	brake	0.025		
of rotor (×10 ⁻²	kg∙m²)	With b	orake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less				
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
F	Resolution per single turn				131072	

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

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

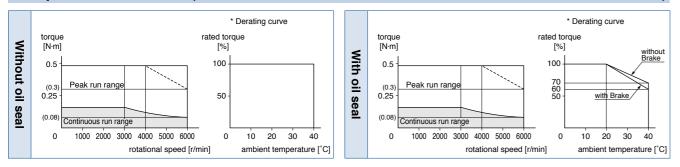
• Permissible load (For details, refer to P.183)

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

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

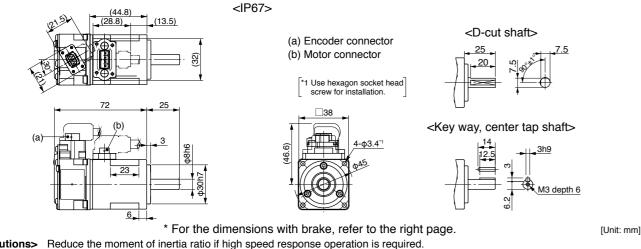
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



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

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

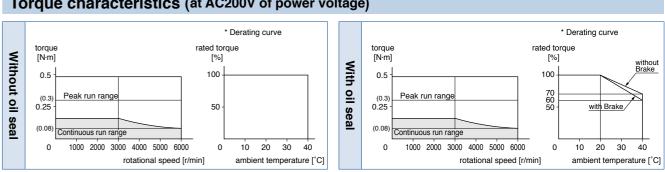
Mass: 0.31 kg



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

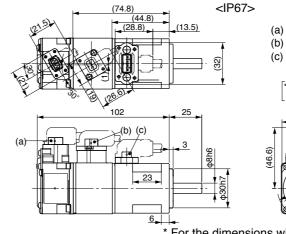
Specific	ation	s						
		AC200 V		• Brake specifications (For details, refer to P.183)				
Motor model		IP65				(This brake will be released when it is energized.) Do not use this for braking the motor in motion.)		
*1		IP67	MSME5AZG1	MSME5AZS1	Static fri	ction torque (N·m)	0.29 or more	
Appliachla	Model	A5II, A5 series	MAD	T1505	Engagin	g time (ms)	35 or less	
Applicable driver *2	No.	A5IIE, A5E series	MAD \bigcirc T1505E	-	Releasir	ng time (ms) Note)4	20 or less	
	Fr	ame symbol	A-fr	ame	Exciting	current (DC) (A)	0.3	
Power supply	capacit	y (kVA)	0	.5	Releasir	ng voltage (DC) (V)	1 or more	
Rated output		(W)		0	Exciting	voltage (DC) (V)	24±1.2	
Rated torque		(N·m)	0.16					
Momentary M	ax. pea	k torque (N·m)	0.48		 Permissible load (For details, refer to P.183) 			
Rated current		(A(rms))	1	.1		Radial load P-direction (N)	147	
Max. current		(A(o-p))	4	.7	During	Thrust load A-direction (N)	88	
Regenerative		Without option	No lim	t Note)2	assembly	Thrust load B-direction (N)	117.6	
frequency (times	/min) Note)1	DV0P4280	No lim	it Note)2		Radial load P-direction (N)	68.6	
Rated rotation	nal spee	d (r/min)	30	00	During			
Max. rotationa	al speed	(r/min)	60	00	operation	Thrust load A, B-direction (N)	58.8	
Moment of ine	ertia	Without brake	0.025		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.42. 			
of rotor (×10 ⁻⁴	¹ kg∙m²)	With brake	0.027					
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	20-bit 17-bit Detail of model designation, refer to F		P.16.		
F	Resolutio	n per single turn	1048576	131072		. For more information about t e refer to P.16.	he part number,	

Torque characteristics (at AC200V of power voltage)



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

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



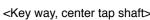
* For the dimensions without brake, refer to the left page. <Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

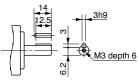
A5 Family **Motor Specifications**

-φ3.4^{*1}









[Unit: mm]

Motor Specifications

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

Specifications

			AC1	00 V		
Motor model		IP65		-	-	
		IP67		MSME011G1	MSME011S1	
Ampliantia	Model	A5II, A5	series	MAD	>T1107	
Applicable driver *2	No.	A5IIE, A	5E series	MAD�T1107E	-	
unver	Fi	rame sym	bol	A-fr	ame	
Power supply	capacit	у	(kVA)	0	.4	
Rated output			(W)	1(00	
Rated torque			(N·m)	0.	32	
Momentary N	ax. pea	k torque	(N·m)	0.95		
Rated current		(4	A(rms))	1.6		
Max. current		((A(o-p))	6.9		
Regenerative	brake	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. rotation	al speed		(r/min)	6000		
Moment of in	ertia	Without	brake	0.051		
of rotor (×10-	⁺kg·m²)	With b	orake	0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less				
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolution per single turn				131072	

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

1 0	/
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

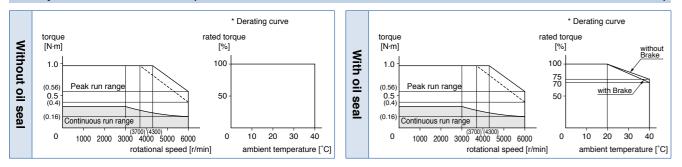
• Permissible load (For details, refer to P.183)

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

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

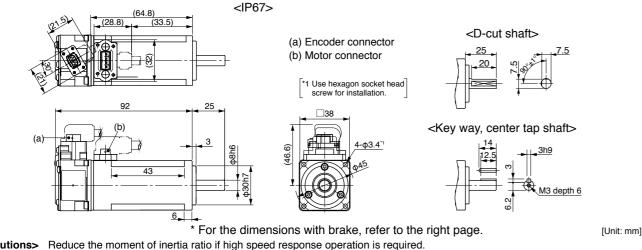
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



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

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

Mass: 0.46 kg

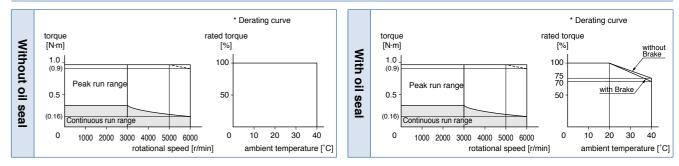


<Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MSME 100 W [Low inertia, Small capacity]

A 141 11

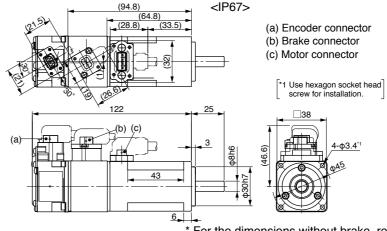
Specifications								
			AC2	00 V		specifications (For details		
Motor model		IP65	-	-	(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
*1		IP67	MSME012G1	MSME012S1	Static fri	ction torque (N·m)	0.29 or more	
Anglischis	Model	A5II, A5 series	MAD	T1505	Engagin	g time (ms)	35 or less	
Applicable driver *2	No.	A5IIE, A5E series	MAD O T1505E	-	Releasir	ng time (ms) Note)4	20 or less	
	F	rame symbol	A-fr	ame	Exciting	current (DC) (A)	0.3	
Power supply	capacit	y (kVA)		.5	Releasir	ng voltage (DC) (V)	1 or more	
Rated output		(W)	-	00	Exciting	voltage (DC) (V)	24±1.2	
Rated torque		(N·m)		32				
Momentary Ma	•	1 ()	0.95		• Permissible load (For details, refer to P.183)		er to P.183)	
Rated current		(A(rms))		.1		Radial load P-direction (N)	147	
Max. current		(A(o-p))	4	.7	During	Thrust load A-direction (N)	88	
Regenerative b		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	117.6	
frequency (times/r	min) Note)1	DV0P4280	No lim	No limit Note)2		Radial load P-direction (N)	68.6	
Rated rotation	al spee	d (r/min)	30	000	During			
Max. rotationa	l speed	(r/min)	60	000	operation	Thrust load A, B-direction (N)	58.8	
Moment of ine	rtia	Without brake	0.051		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.42. 			
of rotor (×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		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the			
R	Resolution per single turn			131072	series. For more information about the part number, please refer to P.16.			

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



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

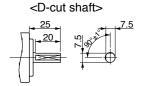
· Motor cables for opposite to output shaft cannot be used with 100 W motor.



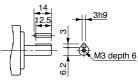
* For the dimensions without brake, refer to the left page. <Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

A5 Family **Motor Specifications**

Mass: 0.66 kg



<Key way, center tap shaft>



Motor Specifications

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

Specifications

			AC1	00 V		
Motor mode		IP65		-	-	
	∄I ⊧1	IP67		MSME021G1	MSME021S1	
Annlinghle	Model	A5II, A5	series	MBD	T2110	
Applicable driver *	^{∗2} No.	A5IIE, A	5E series	MBD OT2110E	-	
unver	Fr	ame sym	Ibol	B-fr	ame	
Power supp	ly capacit	у	(kVA)	0	.5	
Rated output	ut		(W)	20	00	
Rated torqu	ie		(N·m)	0.	64	
Momentary	Max. peal	k torque	(N·m)	1.91		
Rated curre	ent	(A(rms))	2.5		
Max. currer	nt		(A(o-p))	10.6		
Regenerativ	e brake	Without option		No limit Note)2		
frequency (tim	nes/min) Note)1	DV0P4283		No limit Note)2		
Rated rotati	ional spee	d	(r/min)	3000		
Max. rotatic	nal speed		(r/min)	6000		
Moment of	inertia	Without	t brake	0.14		
of rotor (×10	0 ⁻⁴ kg·m²)	With I	orake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
	Resolution per single turn				131072	

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

1 0	/		
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		

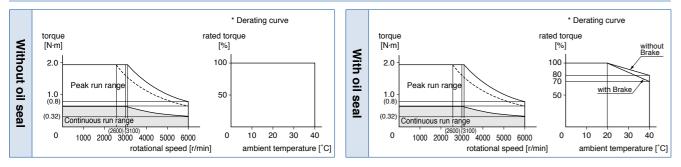
• Permissible load (For details, refer to P.183)

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

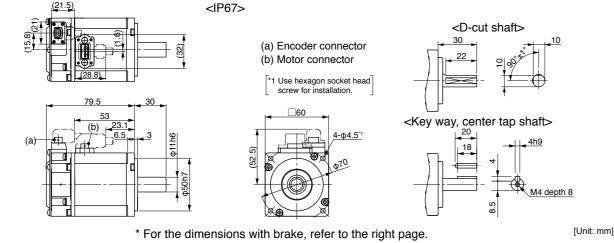
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

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



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

Mass: 0.78 kg



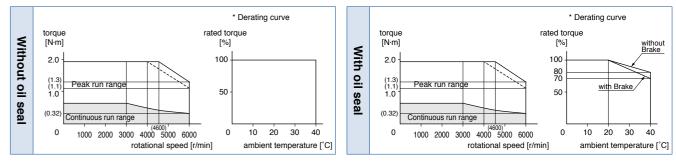
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

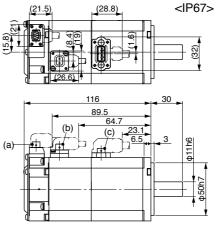
Specifications

Specifications									
			AC200 V		• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)				
Motor model		IP65	-	-		Do not use this for braking the motor in motion.			
*1		IP67	MSME022G1	MSME022S1	Static fri	ction torque (N·m)	1.27 or more		
A 17 1.1	Mode	A5II, A5 series	MAD	T1507	Engaging time (ms) 50		50 or less		
Applicable driver *2	No.	A5IE, A5E series	MAD OT1507E	-	Releasin	g time (ms) Note)4	15 or less		
	F	rame symbol	A-fr	ame	Exciting current (DC) (A)		0.36		
Power supply capacity (kVA)		0.5		Releasin	Releasing voltage (DC) (V)				
Rated output (W)		200		Exciting	Exciting voltage (DC) (V)				
Rated torque (N·m)		0.64							
Momentary Max. peak torque (N·m)		1.91		• Permissible load (For details, refer to P.183)					
Rated current (A(rms))		1.5			Radial load P-direction (N)	392			
Max. current (A(o-p))		6.5		During assembly	Thrust load A-direction (N)	147			
		Without option	No lim	No limit Note)2		Thrust load B-direction (N)	196		
		¹ DV0P4283	No limit Note)2		During	Radial load P-direction (N)	245		
Rated rotational speed (r/min)		3000		During operation					
Max. rotational speed (r/min)		6000		operation	Thrust load A, B-direction (N)	98			
Moment of inertiaWithout brakeof rotor (x10 ⁻⁴ kg·m²)With brake		0.	• For details of Note 1 to Note 5, refer to P.18		o P.182, P.183.				
		0.16			• Dimensions of Driver, refer to P.42.				
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	*1 Motor specifications: *2 The product that the end of driver modes ignation has "E" is "Position cont						
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	 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. 					
Resolution per single turn			1048576				131072		

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



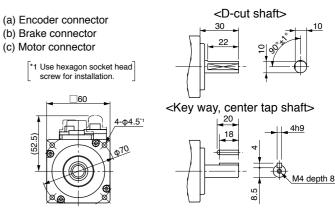
Dimensions <In Case of With Brake, Cable direction to output shaft.>



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

A5 Family **Motor Specifications**

Mass: 1.2 kg



[Unit: mm]

Motor Specifications

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

Specifications

				AC1	00 V	
Motor model		IP65		-	-	
	;1	IP67		MSME041G1	MSME041S1	
Angliaghte	Model	A5II, A5	series	MCD	T3120	
Applicable driver	No.	A5IIE, A	5E series	MCD \bigcirc T3120E	-	
unver	Fr	ame sym	bol	C-fr	ame	
Power supp	ly capacit	у	(kVA)	0	.9	
Rated outpu	ut		(W)	40	00	
Rated torqu	le		(N·m)	1	.3	
Momentary	Max. peal	k torque	(N·m)	3.8		
Rated curre	ent	(A(rms))	4.6		
Max. curren	nt		(A(o-p))	19.5		
Regenerativ	e brake	Without option		No limit Note)2		
frequency (tim	nes/min) Note)1	DV0P4282		No limit Note)2		
Rated rotati	ional spee	d	(r/min)	3000		
Max. rotatio	nal speed		(r/min)	60	00	
Moment of i	inertia	Without brake		0.26		
of rotor (×10	0 ⁻⁴ kg∙m²)	With t	orake	0.28		
	Recommended moment of inertia ratio of the load and the rotor Not		tia Note)3	30 times	s or less	
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072	

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

1 0	/
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

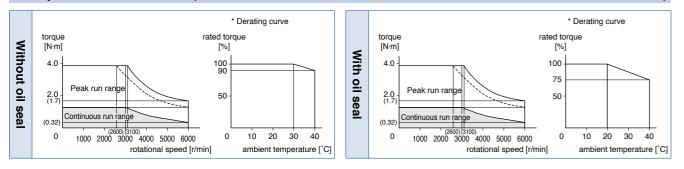
• Permissible load (For details, refer to P.183)

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

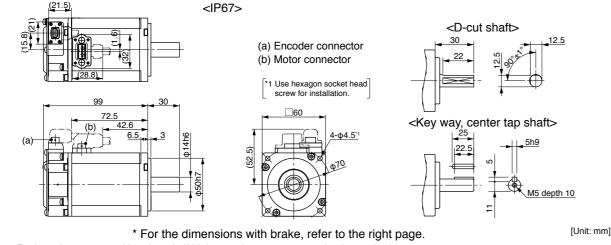
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

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



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

Mass: 1.2 kg

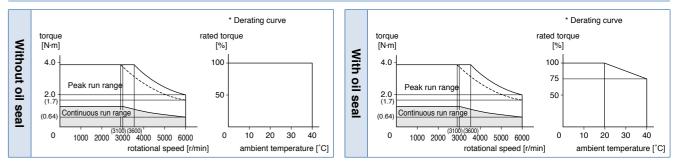


<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

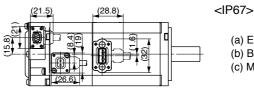
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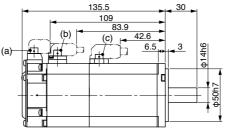
Specifi	catio	n	8						
				AC2	00 V		specifications (For details	. ,	
Motor model		IP65			(This brake will be released when it is energized.) Do not use this for braking the motor in motion.				
	*1 IP67		IP67	MSME042G1	MSME042S1	Static friction torque (N·m)		1.27 or more	
Annellashia	Mod	lel	A5II, A5 series	MBD	T2510	Engagin	g time (ms)	50 or less	
Applicable driver *	No.		A5IIE, A5E series	MBD OT2510E	-	Releasir	ng time (ms) Note)4	15 or less	
unver		Fra	ame symbol	B-fr	ame	Exciting	current (DC) (A)	0.36	
Power supply capacity (kVA)			/ (kVA)	0	.9	Releasir	ng voltage (DC) (V)	1 or more	
Rated output (W)		400		Excitina	voltage (DC) (V)	24±1.2			
Rated torque (N·m)		1.3							
Momentary Max. peak torque (N·m)		3.8		 Permissible load (For details, refer to P.183) 					
Rated current (A(rms))		2.4			Radial load P-direction (N)	392			
Max. curren	Max. current (A(o-p))		(A(o-p))	10.2		During	Thrust load A-direction (N)	147	
Regenerative		- H	Without option	No limit Note)2		assembly	Thrust load B-direction (N)	196	
frequency (tim	es/min) No	ite)1	DV0P4283	No limit Note)2		During	Radial load P-direction (N)	245	
Rated rotation	onal sp	eec	d (r/min)	3000		During operation			
Max. rotatio	nal spe	ed	(r/min)	60	00	operation	Thrust load A, B-direction (N)	98	
Moment of i	nertia		Without brake	0.	26	• For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10	⁻⁴ kg·m	1²)	With brake	0.	28		• Dimensions of Driver, refer to P.42.		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	*2 The pr	 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the					
	Resolu	itior	n per single turn	1048576	131072	series	. For more information about t refer to P.16.	he part number,	

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



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

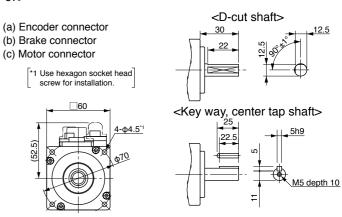




* For the dimensions without brake, refer to the left page. Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

A5 Family **Motor Specifications**





Motor Specifications

200 V MSME 750 W [Low inertia, Small capacity]

Specifications

				AC2	00 V	
Motor model	IP65		-	-		
		IP67		MSME082G1	MSME082S1	
Amplicable	Model	A5II, A5	series	MCD<	T3520	
Applicable driver *2	No.	A5IIE, A	5E series	MCD \ T3520E	-	
diver	Fi	rame sym	ıbol	C-fr	ame	
Power supply	Power supply capacity (kVA)				.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	orake	Without option		No limit Note)2		
frequency (times	min) Note)1	DV0P4283 No limit Note)2		it Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	60	00	
Moment of ine	ertia	Withou	t brake	0.87		
of rotor (×10 ⁻²	kg∙m²)	With I	orake	0.97		
	Recommended moment of inertia ratio of the load and the rotor Note		rtia Note)3	20 times or less		
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per sing	gle turn	1048576	131072	

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

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

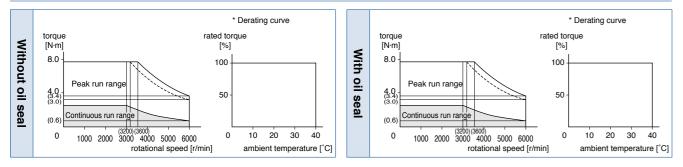
• Permissible load (For details, refer to P.183)

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

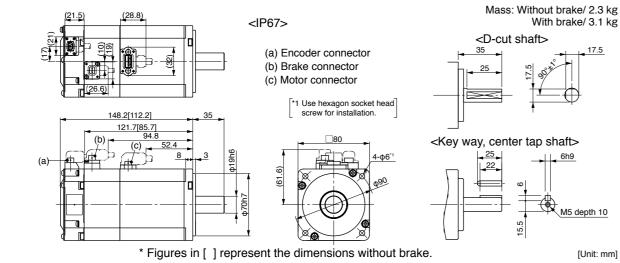
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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 <In Case of With Brake, Cable direction to output shaft.>

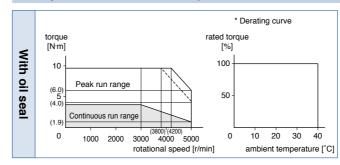


Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

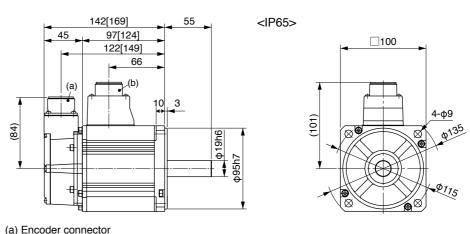
200 V MSME 1.0 kW [Low inertia, Middle capacity]

Creations

Specifications									
				AC2	00 V		specifications (For details		
Motor model		MSME102GC MSME102SC		(This brake will be released when it is energized. (Do not use this for braking the motor in motion.)					
	*1 IP67		MSME102G1	MSME102S1 Static fr		ction torque (N·m)	7.8 or more		
Annilisahia		Model	A5II, A5 series	MDD	T5540	Engagir	g time (ms)	50 or less	
Applicable driver	*2	No.	A5IIE, A5E series	MDD OT5540E	-	Releasi	ng time (ms) Note)4	15 or less	
		Fr	ame symbol	D-fr	ame	Exciting	current (DC) (A)	0.81±10 %	
Power sup	ply c	apacit	y (kVA)	1	.8	Releasi	ng voltage (DC) (V)	2 or more	
Rated outp			(W)	1000		Exciting	voltage (DC) (V)	24±2.4	
Rated torqu			(N·m)	3.18					
Momentary		x. peal	1 ()	9.55		• Permi	ssible load (For details, refe	er to P.183)	
Rated curre	ent		(A(rms))	6.6			Radial load P-direction (N)	980	
Max. curre	nt		(A(o-p))	28		During	Thrust load A-direction (N)	588	
Regenerativ			Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (tir	mes/m	in) Note)1	DV0P4284	No limit Note)2			Radial load P-direction (N)	490	
Rated rotat	tiona	al spee	d (r/min)	3000		During operation			
Max. rotatio	onal	speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	196	
Moment of	iner	tia	Without brake	2.03		For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×1	0 ⁻⁴ ł	⟨g·m²)	With brake	2.	35	Dimensions of Driver, refer to P.43.			
	Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary enc	odei	r specit	fications Note)5	20-bit 17-bit Incremental Absolute		Detail	Detail of model designation, refer to P.16. *3 \Diamond in number of applicable driver represents the		
	Re	solutio	n per single turn	1048576	131072	series	. For more information about t refer to P.16.		



Dimensions



(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

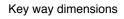
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

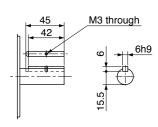
A5 Family **Motor Specifications**

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.)

Mass: Without brake/ 3.5 kg With brake/ 4.5 kg





Motor Specifications

200 V MSME 1.5 kW [Low inertia, Middle capacity]

Specifications

				AC2	00 V		
Matar madal	IP65			MSME152GC	MSME152SC		
Motor model *1		IP67		MSME152G1	MSME152S1		
Amplicable	Model	A5II, A5 series	6	MDD¢	T5540		
Applicable driver *2	No.	A5IIE, A5E se	eries	MDD OT5540E	-		
unver	Fi	ame symbol		D-fr	ame		
Power supply	Power supply capacity (kVA				.3		
Rated output		((W)	15	00		
Rated torque		(N	·m)	4.	4.77		
Momentary M	ax. pea	k torque (N	·m)	14.3			
Rated current		(A(rm	ıs))	8.2			
Max. current		(A(o-	-p))	35			
Regenerative	orake	Without option		No limit Note)2			
frequency (times	min) Note)1	DV0P4284		No limit Note)2			
Rated rotation	nal spee	d (r/m	nin)	30	00		
Max. rotationa	al speed	(r/m	nin)	5000			
Moment of ine	ertia	Without bral	ke	2.84			
of rotor (×10 ⁻²	kg∙m²)	With brake	;	3.17			
	Recommended moment of ine ratio of the load and the rotor			15 times	s or less		
Rotary encode	er speci	fications No	te)5	20-bit Incremental	17-bit Absolute		
F	lesolutio	n per single tu	rn	1048576	131072		

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.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.

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

Mass: Without brake/ 4.4 kg

M3 through

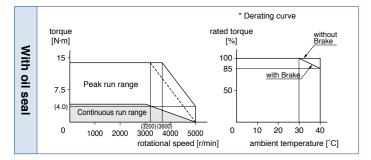
6h9

[Unit: mm]

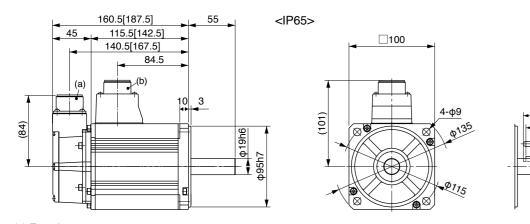
Key way dimensions

With brake/ 5.4 kg

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.

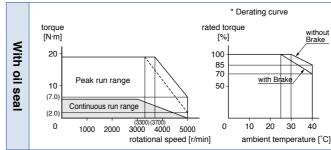
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

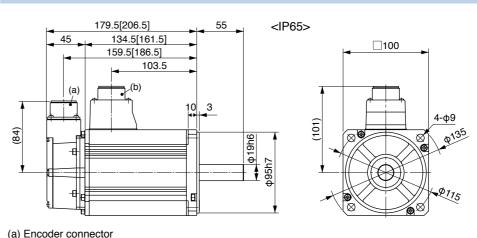
Creations

Specif	ICa	ition	S					
				AC2	00 V		specifications (For details	
Motor model *1 IP65		MSME202GC	GC MSME202SC C					
		IP67	MSME202G1	2G1 MSME202S1		ction torque (N·m)	7.8 or more	
		Model	A5II, A5 series	MED	T7364	Engagin	ig time (ms)	50 or less
Applicable driver	*2	No.	A5IIE, A5E series	MED \bigcirc T7364E	-	Releasir	ng time (ms) Note)4	15 or less
		Fr	ame symbol	E-fr	ame	Exciting	current (DC) (A)	0.81±10 %
Power sup	ply o	capacit	y (kVA)	3	.3	Releasir	ng voltage (DC) (V)	2 or more
Rated outp			(W)			Exciting	Exciting voltage (DC) (V)	
Rated torq			(N·m)		37			
Momentary	, 	ix. peal	1 ()	19.1		• Permi	ssible load (For details, refe	er to P.183)
Rated curr	ent		(A(rms))	11.3			Radial load P-direction (N)	980
Max. curre	nt		(A(o-p))	48		During	Thrust load A-direction (N)	588
Regenerati			Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (ti	imes/m	nin) Note)1	DV0P4285	No limit Note)2		D .	Radial load P-direction (N)	490
Rated rota	tiona	al spee	d (r/min)	3000		During		
Max. rotati	onal	speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	196
Moment of	iner	rtia	Without brake	3.68		For details of Note 1 to Note 5, refer to P.182, P.18		
of rotor (×1	0-4	kg∙m²)	With brake	4.01			ions of Driver, refer to P.44.	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary end	code	r speci	fications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		
	Re	esolutio	n per single turn	1048576	131072	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

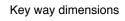


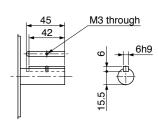
(b) Motor/Brake connector

A5 Family **Motor Specifications**

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

Mass: Without brake/ 5.3 kg With brake/ 6.3 kg





* Figures in [] represent the dimensions with brake.

[Unit: mm]

76

<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.

Motor Specifications

200 V MSME 3.0 kW [Low inertia, Middle capacity]

Specifications

				AC200 V			
Motor model		IP65		MSME302GC	MSME302SC		
*1		IP67		MSME302G1	MSME302S1		
Angliaghte	Model	A5II, A5	series	MFD🛇	TA390		
Applicable driver *2	No.	A5IIE, A	5E series	MFD 	-		
unver	Fr	ame sym	bol	F-fra	ame		
Power supply	capacit	у	(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 t	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)		000		
Max. rotationa	al speed		(r/min)	50	00		
Moment of ine	ertia	Without brake		6.50			
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m ²)			6.85			
	Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute		
R	lesolutio	n per sing	le turn	1048576	131072		

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

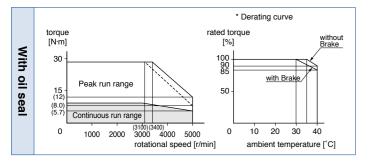
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

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

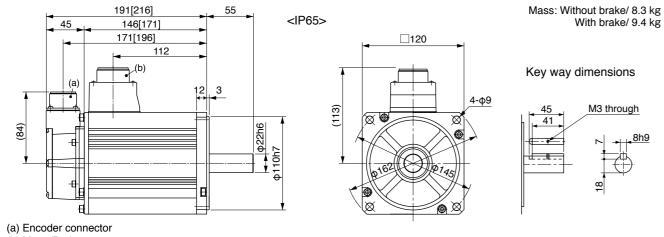
8h9

[Unit: mm]

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



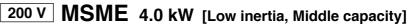
Dimensions



(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

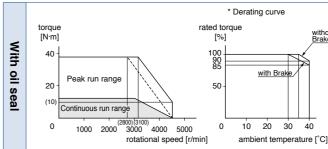
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



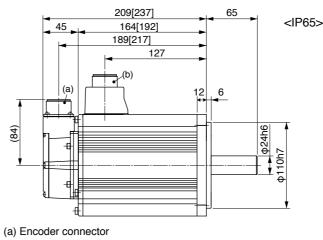
A 141 11

Specifi	catio	ns						
			AC200 V			• Brake specifications (For details, refer to P.183)		
IP65		MSME402GC MSME402SC		(This brake will be released when it is energized. Do not use this for braking the motor in motion.)				
	Notor model *1 IP67		MSME402G1	MSME402S1	Static fri	ction torque (N·m)	16.2 or more	
	Mod	el A5II, A5 series	MFD¢	TB3A2	Engagin	g time (ms)	110 or less	
Applicable driver *	No.	A5IIE, A5E series	MFD OTB3A2E	-	Releasir	ng time (ms) Note)4	50 or less	
		Frame symbol	F-fr	ame	Exciting	current (DC) (A)	0.90±10 %	
Power supp	у сара	city (kVA)	6	.0	Releasir	ng voltage (DC) (V)	2 or more	
Rated output	t	(W)	4000		Exciting	voltage (DC) (V)	24±2.4	
Rated torque (N·m)			12.7					
Momentary	Momentary Max. peak torque (N·m)			38.2		• Permissible load (For details, refer to P.183)		
Rated curre	nt	(A(rms))	19.6			Radial load P-direction (N)	980	
Max. curren		(A(o-p))	8	33	During	Thrust load A-direction (N)	588	
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (tim	es/min) Not	e)1 DV0P4285×2	No lim	it Note)2	During	Radial load P-direction (N)	784	
Rated rotation	onal spe	eed (r/min)	3000		During operation			
Max. rotatio	nal spe	ed (r/min)	4500		operation	Thrust load A, B-direction (N)	343	
Moment of i	nertia	Without brake	12	2.9		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.45. 		
of rotor (×10	⁻⁴ kg·m	²) With brake	14	4.2				
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		*2 The p	 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encoder specifications Note)5		20-bit 17-bit Incremental Absolute		Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the				
	Resolu	tion per single turn	1048576	131072	series	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



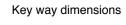
(b) Motor/Brake connector

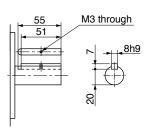
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

A5 Family **Motor Specifications**

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

Mass: Without brake/ 11.0 kg With brake/ 12.6 kg





130 4-φ9 118)

* Figures in [] represent the dimensions with brake.

Motor Specifications

200 V MSME 5.0 kW [Low inertia, Middle capacity]

Specifications

				AC2	00 V		
Motor model		IP65		MSME502GC	MSME502SC		
		IP67		MSME502G1	MSME502S1		
Amplianhla	Model	A5II, A5 se	eries	MFD🛇	TB3A2		
Applicable driver *2	No.	A5IIE, A5I	E series	MFD \bigcirc TB3A2E	-		
unver	Fi	ame symb	ol	F-fra	ame		
Power supply	capacit	у	(kVA)	7	.5		
Rated output			(W)	50	00		
Rated torque			(N·m)	15	15.9		
Momentary N	lax. pea	k torque	(N·m)	47.7			
Rated current		(A	(rms))	24.0			
Max. current		(A	A(o-p))	102			
Regenerative	brake	Without option		357			
frequency (times	/min) Note)1	DV0P4285×2		No limit Note)2			
Rated rotation	nal spee	d ((r/min)	3000			
Max. rotation	al speed	((r/min)	45	00		
Moment of in	ərtia	Without t	orake	17.4			
of rotor (×10-	¹ kg∙m²)	With br	ake	18	18.6		
	Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute		
F	Resolutio	n per single	e turn	1048576	131072		

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

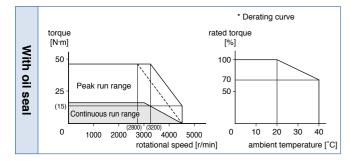
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

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

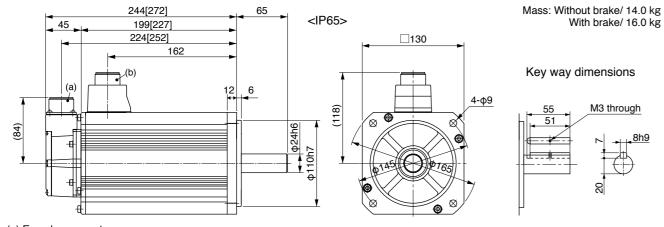
8h9

[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

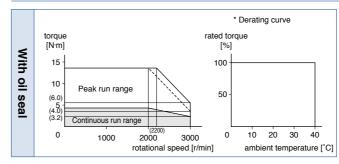
* Figures in [] represent the dimensions with brake.

<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.

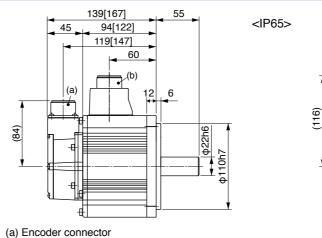
200 V MDME 1.0 kW [Middle inertia, Middle capacity]

Specifications

Specin	Laliu	115						
			AC2	00 V		specifications (For details ake will be released when it is e		
Motor mode	IP65		MDME102GC MDME102SC		(Do not use this for braking the motor in motion.)			
	1	IP67	MDME102G1	MDME102S1	Static fri	ction torque (N·m)	4.9 or more	
A	Mod	lel A5II, A5 series	MDD	MDD \ T3530		g time (ms)	80 or less	
Applicable driver *	2 No.	A5IIE, A5E series	MDD OT3530E	-	Releasir	ng time (ms) Note)4	70 or less	
		Frame symbol	D-fr	ame	Exciting	current (DC) (A)	0.59±10 %	
Power supp	<i>,</i> ,	, ,		.8	Releasir	ng voltage (DC) (V)	2 or more	
Rated outpu		(W)		1000		voltage (DC) (V)	24±2.4	
Rated torque (N·m)		4.77						
Momentary Max. peak torque (N·m)		14.3		• Permi	ssible load (For details, refe	er to P.183)		
Rated curre	Rated current (A(rms))		5	5.7		Radial load P-direction (N)	980	
Max. curren	t	(A(o-p))	2	24		Thrust load A-direction (N)	588	
Regenerativ		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (tim	es/min) No	te)1 DV0P4284	No limit Note)2			,		
Rated rotati	onal sp	eed (r/min)	2000		During	Radial load P-direction (N)	490	
Max. rotatio	nal spe	ed (r/min)	3000		operation	Thrust load A, B-direction (N)	196	
Moment of i	nertia	Without brake	4.60		 For detail 	ails of Note 1 to Note 5, refer t	o P.182, P.18	
of rotor (×10)-4 kg∙m	²) With brake	5.	5.90		ions of Driver, refer to P.43.		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 time	10 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary enco	der spe	ecifications Note)5	20-bit Incremental	20-bit 17-bit Detail of model designation, refer to		P.16.		
Γ	Resolu	tion per single turn	1048576	131072	series. For more information about the part number please refer to P.16.			



Dimensions



(b) Motor/Brake connector

<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.

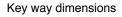
A5 Family

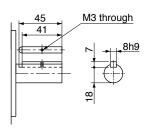
Motor Specifications

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

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

Mass: Without brake/ 5.2 kg With brake/ 6.7 kg





[Unit: mm]

130

* Figures in [] represent the dimensions with brake.

80

Motor Specifications

200 V MDME 1.5 kW [Middle inertia, Middle capacity]

Specifications

				AC2	00 V	
Matarimodal	Motor model			MDME152GC	MDME152SC	
		IP67		MDME152G1	MDME152S1	
Amplicable	Model	A5 I , A5 s	series	MDD¢	T5540	
Applicable driver *2	No.	A5IIE, A5	E series	MDD OT5540E	-	
unver	Fi	ame symb	ol	D-fr	ame	
Power supply	capacit	у	(kVA)	2	.3	
Rated output			(W)	15	00	
Rated torque			(N·m)	7.16		
Momentary M	ax. pea	k torque	(N·m)	21.5		
Rated current		(A	A(rms))	9.4		
Max. current		(/	A(o-p))	40		
Regenerative	orake	Without option		No limit Note)2		
frequency (times	min) Note)1	DV0P4284		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	30	00	
Moment of ine	ertia	Without brake		6.70		
of rotor (×10 ⁻²	of rotor (×10 ⁻⁴ kg·m ²)			7.99		
	Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per singl	e turn	1048576	131072	

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

(C	/
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, P.183.

· Dimensions of Driver, refer to P.43.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

Mass: Without brake/ 6.7 kg

Key way dimensions

41

<u>...</u>

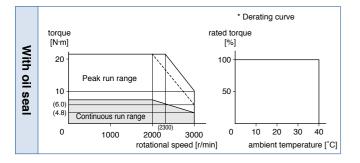
With brake/ 8.2 kg

M3 through

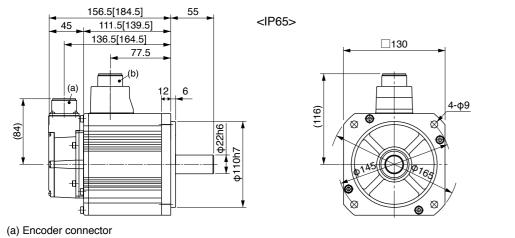
.8h9

[Unit: mm]

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



Dimensions



(b) Motor/Brake connector

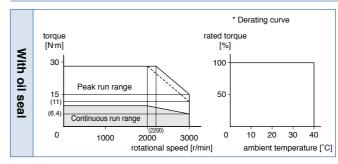
* Figures in [] represent the dimensions with brake.

<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.

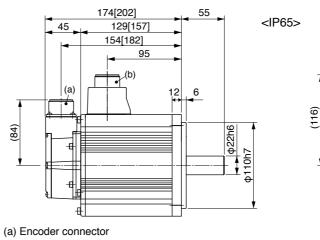


Specifications

Specifi	cau		5					
				AC2	00 V		e specifications (For details rake will be released when it is e	
Motor model		MDME202GC MDME202SC		(Do not use this for braking the motor in motion.)				
	#1 ⊧1			iction torque (N·m)	13.7 or more			
Annlinghle	м	odel	A5II, A5 series	MED	T7364	Engagir	ng time (ms)	100 or less
Applicable driver	⊧2 N	0.	A5IIE, A5E series	MED \bigcirc T7364E	_	Releasi	ng time (ms) Note)4	50 or less
		Fr	ame symbol	E-fr	ame	Exciting	current (DC) (A)	0.79±10 %
Power supp	<i>,</i> ,	oacity	· · · · · · · · · · · · · · · · · · ·		.3	Releasi	ng voltage (DC) (V)	2 or more
Rated outp			(W)	2000		Exciting	voltage (DC) (V)	24±2.4
Rated torque (N·m)		9.55		_				
Momentary Max. peak torque (N·m)		28.6		• Perm	issible load (For details, refe	er to P.183)		
Rated curre	Rated current (A(rms))		(A(rms))	11.5			Radial load P-direction (N)	980
Max. currer	nt		(A(o-p))	49		During	Thrust load A-direction (N)	588
Regenerativ		H	Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (tin	nes/min)	Note)1	DV0P4285	No limit Note)2			Radial load P-direction (N)	490
Rated rotat	ional s	speed	d (r/min)	2000		During		
Max. rotatio	onal sp	beed	(r/min)	3000		operation	Thrust load A, B-direction (N)	196
Moment of	inertia	1	Without brake	8.72			ails of Note 1 to Note 5, refer t	o P.182, P.183
of rotor (×1	0 ⁻⁴ kg	∙m²)	With brake	1(0.0		sions of Driver, refer to P.44.	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary encoder specifications Note)5		20-bit 17-bit Detail of model designation, refer to P.16. Incremental Absolute *3 ◇ in number of applicable driver represents			P.16.			
Γ	Reso	olutio	n per single turn	1048576	131072	series. For more information about the part number please refer to P.16.		



Dimensions



(b) Motor/Brake connector

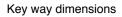
A5 Family

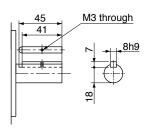
Motor Specifications

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

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

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





130

* Figures in [] represent the dimensions with brake.

[Unit: mm]

82

<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.

Motor Specifications

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

Specifications

				AC2	00 V		
Motor model		IP65		MDME302GC	MDME302SC		
*1	Motor model *1			MDME302G1	MDME302S1		
Angliaghte	Model	A5II, A5	series	MFD🛇	TA390		
Applicable driver *2	No.	A5IIE, A	5E series	MFD OTA390E	-		
diver	Fr	ame sym	bol	F-fra	ame		
Power supply	capacit	y	(kVA)	4	.5		
Rated output			(W)	30	00		
Rated torque			(N·m)	14	14.3		
Momentary M	ax. peal	< torque	(N·m)	43.0			
Rated current		(.	A(rms))	17.4			
Max. current		((A(o-p))	74			
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)	20	00		
Max. rotationa	l speed		(r/min)	30	00		
Moment of ine	rtia	Without brake		12.9			
of rotor (×10 ⁻⁴	kg∙m²)	With b	orake	14.2			
	Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encode	Rotary encoder specif		Note)5	20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	le turn	1048576	131072		

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

(C	,
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
accombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

• For details of Note 1 to Note 5, refer to P.182, P.183.

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

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

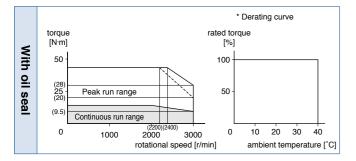
With brake/ 12.6 kg

M3 through

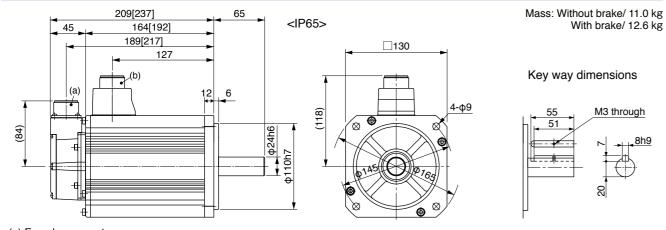
8h9

[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

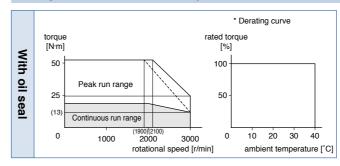
* Figures in [] represent the dimensions with brake.

<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.

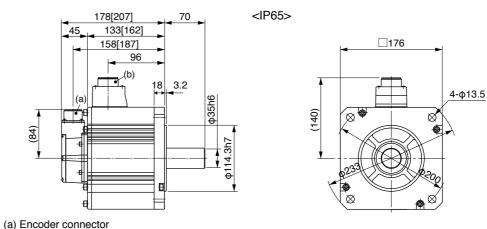


Specifications

Specini	Jacon	5					
			AC2	00 V		specifications (For details	
Matarianada	lotor model		MDME402GC MDME402SC			ake will be released when it is e use this for braking the motor in	
wotor mode *		IP67	MDME402G1	MDME402S1	Static fri	Static friction torque (N·m)	
	Model	A5II, A5 series	MFD🛇	TB3A2	Engaging time (ms)		80 or less
Applicable driver *	2 No.	A5IIE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	25 or less
unver	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %
Power supp	ly capacit	y (kVA)	6	.0	Releasir	ng voltage (DC) (V)	2 or more
Rated output	t	(W)	4000		Exciting	voltage (DC) (V)	24±2.4
Rated torque (N·m)		19.1			0 ()()		
Momentary Max. peak torque (N·m)		k torque (N·m)	57.3		• Permi	ssible load (For details, refe	er to P.183)
Rated curre	nt	(A(rms))	21	21.0		Radial load P-direction (N)	1666
Max. curren	t	(A(o-p))	8	9	During	Thrust load A-direction (N)	784
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	980
frequency (tim	es/min) Note)1	DV0P4285×2	No limit Note)2			Radial load P-direction (N)	
Rated rotation	onal spee	d (r/min)	2000		During		784
Max. rotatio	nal speed	l (r/min)	3000		operation	Thrust load A, B-direction (N)	343
Moment of i	nertia	Without brake	37.6		For details of Note 1 to Note 5, refer to P.182, P.18		
of rotor (×10	^{−4} kg·m²)	With brake	42.9			ions of Driver, refer to P.45.	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary enco	der speci	fications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		
	Resolutio	n per single turn	1048576	131072	series. For more information about the part number please refer to P.16.		



Dimensions



(b) Motor/Brake connector

<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.

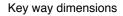
A5 Family

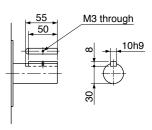
Motor Specifications

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

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

Mass: Without brake/ 15.5 kg With brake/ 18.7 kg





* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC2	00 V	
Motor model		IP65		MDME502GC	MDME502SC	
wotor model *1	Motor model *1			MDME502G1	MDME502S1	
Annlinghle	Model	A5 I , A5 s	eries	MFD🛇	TB3A2	
Applicable driver *2	No.	A5IIE, A5	E series	MFD \bigcirc TB3A2E	-	
unver	Fr	ame symb	ol	F-fra	ame	
Power supply	capacit	у	(kVA)	7	.5	
Rated output			(W)	50	00	
Rated torque			(N·m)	23.9		
Momentary M	ax. peal	k torque	(N·m)	71.6		
Rated current		(A	(rms))	25.9		
Max. current		(/	A(o-p))	110		
Regenerative t	orake	Without option		120		
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	al spee	d	(r/min)	20	00	
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	ertia	Without	brake	48.0		
of rotor (×10 ⁻⁴	kg∙m²)	With br	rake	53.3		
	Recommended moment of inertia ratio of the load and the rotor Note)		ia Note)3	10 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single	e turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

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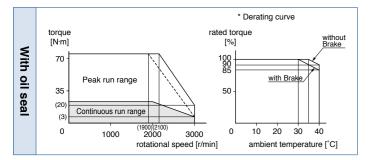
With brake/ 21.8 kg

M3 through

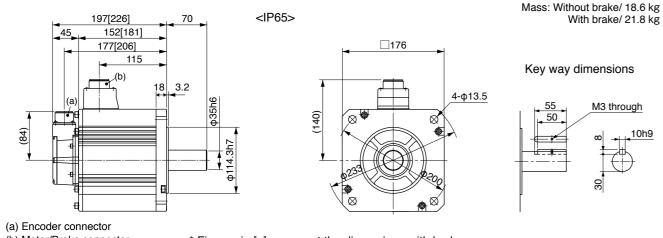
10h9

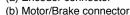
[Unit: mm]

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



Dimensions





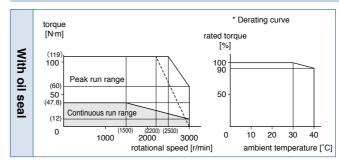
* Figures in [] represent the dimensions with brake.

<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.

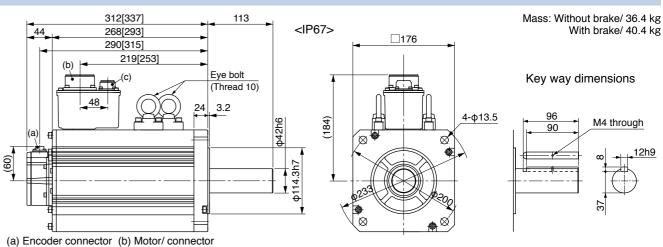
200 V MDME 7.5 kW [Middle inertia, Middle capacity]

Creations

Specif	ICa	ation	S					
				AC2	00 V		specifications (For details	
Motor model		-	-	(This brake will be released when it is energized. Do not use this for braking the motor in motion.)				
	*1		IP67	MDME752G1	2G1 MDME752S1 Static friction torque (N·m)		58.8 or more	
Annlinghia		Model	A5II, A5 series	MGD¢	TC3B4	Engagin	ig time (ms)	150 or less
Applicable driver	*2	No.	A5IIE, A5E series	-	_	Releasir	ng time (ms) Note)4	50 or less
		Fr	ame symbol	G-fr	ame	Exciting	current (DC) (A)	1.4±10 %
Power sup	ply	capacit	y (kVA)	1	1	Releasir	ng voltage (DC) (V)	2 or more
Rated outp			(W)	7500		Exciting	voltage (DC) (V)	24±2.4
Rated torque (N·m)			. ,	47.8				
Momentary Max. peak torque (N·m)		119		 Permi 	ssible load (For details, refe	er to P.183)		
Rated curr	ent		(A(rms))		1.0		Radial load P-direction (N)	2058
Max. curre	nt		(A(o-p))	10	65	During assembly	Thrust load A-direction (N)	980
Regenerati			Without option	No lim	No limit Note)2		Thrust load B-direction (N)	1176
frequency (ti	imes/n	nin) Note)1	DV0P4285×3	No lim	it Note)2	During	Radial load P-direction (N)	1176
Rated rota	tion	al spee	d (r/min)	15	00	During		
Max. rotati	ona	l speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	490
Moment of	ine	rtia	Without brake	101			ails of Note 1 to Note 5, refer t	o P.182, P.183
of rotor (×1	0-4	kg∙m²)	With brake	10	07		ions of Driver, refer to P.46.	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary end	ode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute $*3 \bigcirc$ in number of applicable driver represents th			P.16.
	R	esolutio	n per single turn	1048576	131072	series. For more information about the part number please refer to P.16.		



Dimensions



(c) Brake connector (only 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.

A5 Family

Motor Specifications

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

* Figures in [] represent the dimensions with brake.

Motor Specifications

200 V MDME 11.0 kW [Middle inertia, Middle capacity]

Specifications

				AC2	00 V	
Motor model		IP65		-	-	
		IP67		MDMEC12G1	MDMEC12S1	
Applicable	Model	A5II, A5	series	MHD🛇	TC3B4	
	No.	A5IIE, A	5E series	-	-	
unver	Fi	ame sym	Ibol	H-fra	ame	
Power supply	Power supply capacity (kVA)			1	7	
Rated output	:		(W)	110	000	
Rated torque	Rated torque (N·m)			70).0	
Momentary N	/lax. pea	k torque	(N·m)	175		
Rated currer	t	(A(rms))	54.2		
Max. current			(A(o-p))	203		
Regenerative	brake	Without option		No limit Note)2		
frequency (time	s/min) Note)1	DV0PM20058		No limit Note)2		
Rated rotatio	nal spee	d	(r/min)	1500		
Max. rotation	al speed		(r/min)	2000		
Moment of in	ertia	Without	t brake	212		
of rotor (×10	of rotor (×10 ⁻⁴ kg·m ²) With bra			22	20	
	Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encod	Rotary encoder specifications			20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072	

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

(C	,
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	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

• For details of Note 1 to Note 5, refer to P.182, P.183.

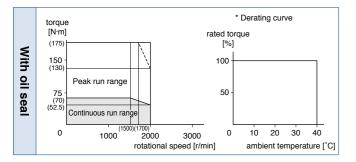
· Dimensions of Driver, refer to P.47.

*1 Motor specifications:

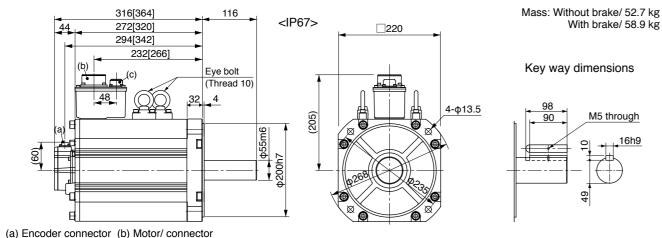
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

[Unit: mm]

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)

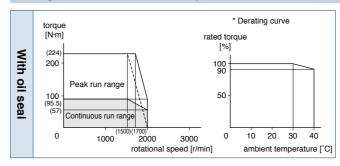
* Figures in [] represent the dimensions with brake.

<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.

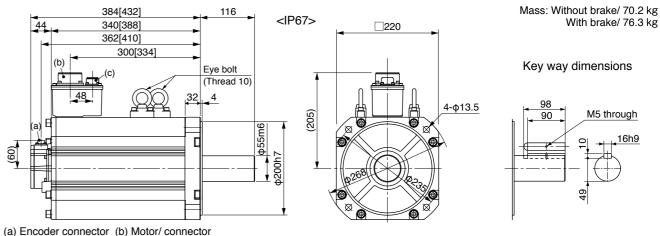


Specifications

Specifi	alion	3					
			AC2	00 V		specifications (For details ake will be released when it is e	
Motor model				(Do not use this for braking the motor in motion.)			
wotor mode *		IP67	MDMEC52G1	MDMEC52S1	Static fri	Static friction torque (N·m)	
Annlinghia	Model	A5II, A5 series	мно	TC3B4	Engagin	g time (ms)	300 or less
Applicable driver *	2 No.	A5IIE, A5E series	-	-	Releasir	ng time (ms) Note)4	140 or less
	F	rame symbol	H-fr	ame	Exciting	current (DC) (A)	1.08±10 %
Power supply capacity (kVA)		y (kVA)		2	Releasir	ng voltage (DC) (V)	2 or more
Rated output (W)		()			Exciting	voltage (DC) (V)	24±2.4
Rated torque (N·m)		95.5					
Momentary Max. peak torque (N·m)		224		• Permi	ssible load (For details, refe	er to P.183)	
Rated curre	nt	(A(rms))	66.1			Radial load P-direction (N)	4508
Max. curren	t	(A(o-p))	23	36	During	Thrust load A-direction (N)	1470
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	1764
frequency (tim	es/min) Note)1	DV0PM20058	No limit Note)2			Radial load P-direction (N)	2254
Rated rotati	onal spee	d (r/min)	1500		During		
Max. rotatio	nal speed	(r/min)	2000		operation	Thrust load A, B-direction (N)	686
Moment of i	nertia	Without brake	302		For details of Note 1 to Note 5, refer to P.182, P.18		
of rotor (×10	^{−4} kg·m²)	With brake	3	11		ions of Driver, refer to P.47.	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary enco	der speci	fications Note)5	20-bit Incremental	17-bit Absolute	 Detail of model designation, refer to P.16. *3 *3 control information about the part number, please refer to P.16. 		
	Resolutio	n per single turn	1048576	131072			



Dimensions



(c) Brake connector (only 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.

A5 Family

Motor Specifications

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

* Figures in [] represent the dimensions with brake.

Motor Specifications

200 V MFME 1.5 kW

[Middle inertia, Middle capacity] Flat type

Specifications

			AC2	00 V	
Motor model	IP65		-	-	
*1		IP67		MFME152G1	MFME152S1
Annlinghia	Model	A5II, A5	series	MDD	>T5540
Applicable driver *2	No.	A5IIE, A	5E series	MDD 	-
diver	Fi	rame sym	ıbol	D-fr	ame
Power supply	capacit	у	(kVA)	2	.3
Rated output			(W)	15	00
Rated torque			(N·m)	7.	16
Momentary M	ax. pea	k torque	(N·m)	21.5	
Rated current		((A(rms))	7.5	
Max. current			(A(o-p))	32	
Regenerative t	orake	Without	t option	100	
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	ertia	Withou	t brake	18.2	
of rotor (×10 ⁻⁴	kg∙m²)	With I	orake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less	
Rotary encode	Rotary encoder specifications Note)5				17-bit Absolute
R	esolutio	n per sing	gle turn	1048576	131072

 Brak (This b Do no

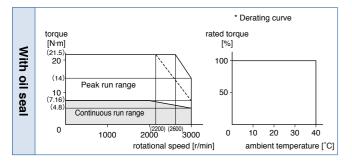
Static friction torque (N·m)	7.8 or more					
Engaging time (ms)	80 or less					
Releasing time (ms) Note)4	35 or less					
Exciting current (DC) (A)	0.83±10 %					
Releasing voltage (DC) (V)	2 or more					
Exciting voltage (DC) (V)	24±2.4					

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

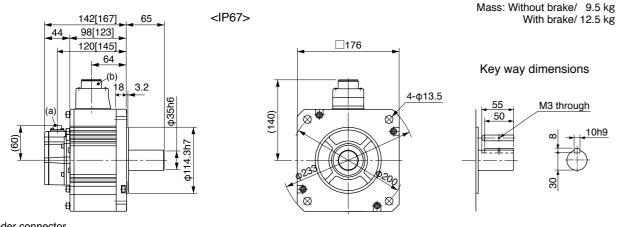
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- *2 The product that the end of driver model Detail of model designation, refer to P.16.
- 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.

<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.

Re specifications (For details, refer to P.183)	
brake will be released when it is energized. ot 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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

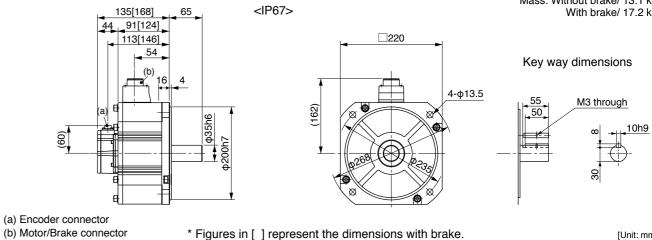
*1 Motor specifications:

- designation has "E" is "Position control type".
- *3 \diamond in number of applicable driver represents the

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[Unit: mm]

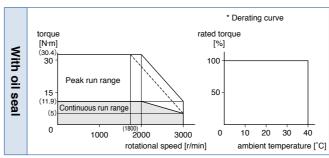
Dimensions



<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 MFME 2.5 kW [Middle inertia, Middle capacity]

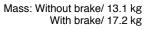
Specific	ation	S					
			AC2	200 V		specifications (For details	
Motor model				(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
*1		IP67	MFME252G1	E252G1 MFME252S1		Static friction torque (N·m)	
Annelisse	Model	A5II, A5 series	MED	T7364	Engaging time (ms)		150 or less
Applicable driver *2	No.	A5IIE, A5E series	MED 	-	Releasir	ng time (ms) Note)4	100 or less
	F	rame symbol	E-fr	ame	Exciting	current (DC) (A)	0.75±10 %
Power supply	/ capacit	y (kVA)	3	.8	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	2500		Excitina	Exciting voltage (DC) (V)	
Rated torque		(N·m)	11.9		3		
Momentary N	lax. pea	k torque (N·m)	30.4		Permissible load (For details, refer to P.183)		
Rated currer	t	(A(rms))	13.4			Radial load P-direction (N)	1862
Max. current		(A(o-p))	57		During	Thrust load A-direction (N)	686
Regenerative		Without option	75		assembly	Thrust load B-direction (N)	686
frequency (time	s/min) Note)1	DV0P4285	No limit Note)2		During	Radial load P-direction (N)	784
Rated rotatio	nal spee	d (r/min)	2000				
Max. rotation	al speed	l (r/min)	3000		operation	Thrust load A, B-direction (N)	294
Moment of in	ertia	Without brake	35.8		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.44. *1 Mater approximations: 		
of rotor (×10	^₄ kg·m²)	With brake	45.2				
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		P.16.	
	Resolutio	on per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



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A5 Family **Motor Specifications**

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



Motor Specifications

200 V MFME 4.5 kW [Middle inertia, Middle capacity]

Specifications

			AC2	00 V		
Motor mode		IP65		-	_	
	*1	IP67		MFME452G1	MFME452S1	
Annlinghia	Model	A5II, A5	series	MFD OTB3A2		
Applicable driver	*2 No.	A5IIE, A	5E series	MFD OTB3A2E	_	
unver	F	rame sym	nbol	F-fra	ame	
Power supp	oly capacit	y	(kVA)	6	.8	
Rated outp	ut		(W)	45	00	
Rated torqu	he		(N·m)	21	.5	
Momentary	Max. pea	k torque	(N·m)	54.9		
Rated curre	ent		(A(rms))	24.7		
Max. currer	nt		(A(o-p))	105		
Regenerativ	/e brake	Without option		67		
frequency (tir	mes/min) Note)1	DV0P4285×2		375		
Rated rotat	ional spee	d	(r/min)	2000		
Max. rotatio	onal speed	I	(r/min)	3000		
Moment of	inertia	Withou	t brake	63.1		
of rotor (×1	0 ⁻⁴ kg·m²)	With	brake	70.9		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		
Rotary enc	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
	Resolutio	on per sing	gle turn	1048576	131072	

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

	, ,
Static friction torque (N·m)	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)

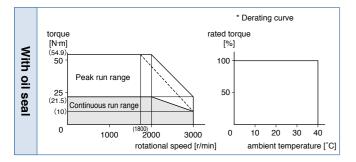
During assembly During operation	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

• For details of Note 1 to Note 5, refer to P.182, P.183.

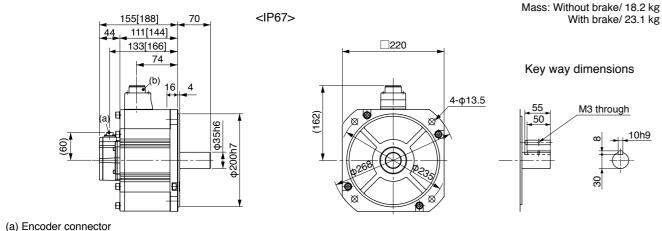
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamond in number of applicable driver represents the series. For more information about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

[Unit: mm]

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



Dimensions

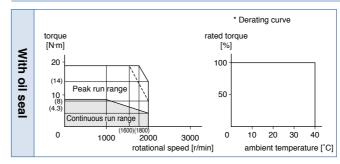


- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

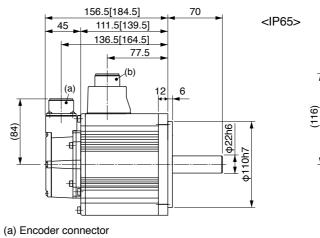
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MGME 0.9 kW [Middle inertia, Middle capacity]

Specifications

			AC2	200 V	 Brake 	specifications (For details	s, refer to P.183)
IP65		MGME092GC MGME092SC		(This brake will be released when it is energized. Do not use this for braking the motor in motion.)			
Motor mode	2 1	IP67	MGME092G1	MGME092S1	Static fri	ction torque (N·m)	13.7 or more
	Mode	A5II, A5 series	MDD	>T5540	Engagin	g time (ms)	100 or less
Applicable driver *	2 No.	A5IIE, A5E series	MDD O T5540E	-	Releasir	ng time (ms) Note)4	50 or less
anvoi	F	rame symbol	D-fr	ame	Exciting	current (DC) (A)	0.79±10 %
Power supp	ly capaci	ty (kVA)	1	.8	Releasir	ng voltage (DC) (V)	2 or more
Rated outpu		(W)			Exciting	voltage (DC) (V)	24±2.4
Rated torqu		(N·m)					
Momentary		1 ()	19.3		• Permissible load (For details, refer to P.183)		
Rated current (A(rms))		7.6			Radial load P-direction (N)	980	
Max. curren	t	(A(o-p))	24		During	Thrust load A-direction (N)	588
Regenerativ		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (tim	es/min) Note	1 DV0P4284	No limit Note)2		.	Radial load P-direction (N)	686
Rated rotati	onal spe	ed (r/min)	1000		During		
Max. rotatio	nal spee	d (r/min)	2000		operation	Thrust load A, B-direction (N)	196
Moment of i	nertia	Without brake	6.70		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.43. 		
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		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		
	Resoluti	on per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



Dimensions



(b) Motor/Brake connector

<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.

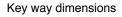
A5 Family

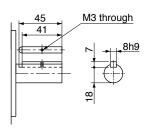
Motor Specifications

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

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

Mass: Without brake/ 6.7 kg With brake/ 8.2 kg





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* Figures in [] represent the dimensions with brake.

[Unit: mm]

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Motor Specifications

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

Specifications

			AC2	00 V	
Motor model	IP65		MGME202GC	MGME202SC	
		IP67	MGME202G1	MGME202S1	
Amplicable	Model	A5II, A5 series	MFD🗘	TA390	
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	
unver	Fi	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	3	.8	
Rated output		(W)	20	00	
Rated torque		(N·m)	19	9.1	
Momentary M	ax. pea	k torque (N·m)	47.7		
Rated current		(A(rms))	17.0		
Max. current		(A(o-p))	60		
Regenerative I	orake	Without option	No lim	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	al speed	(r/min)	2000		
Moment of ine	ertia	Without brake	30).3	
of rotor (×10 ⁻⁴	kg∙m²)	With brake	35.6		
Recommender ratio of the loa			10 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per single turn	1048576	131072	

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

1 0	,
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, P.183.

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

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

Mass: Without brake/ 14.0 kg

Key way dimensions

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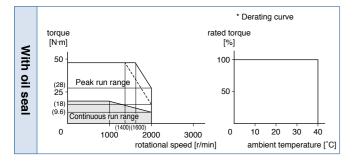
With brake/ 17.5 kg

M3 through

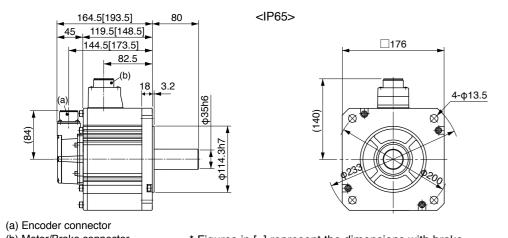
10h9

[Unit: mm]

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



Dimensions



(b) Motor/Brake connector

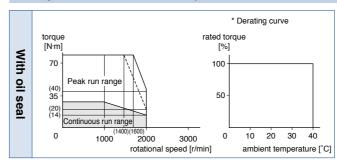
* Figures in [] represent the dimensions with brake.

<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.

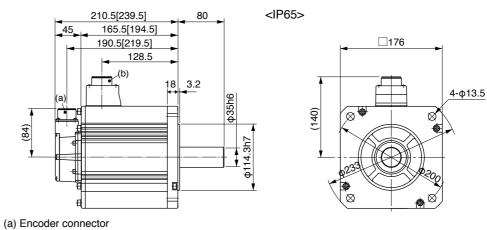
200 V MGME 3.0 kW [Middle inertia, Middle capacity]

Specifications

Specifi	cation	5					
AC200		00 V		specifications (For details ake will be released when it is e			
Motor model		MGME302GC					
	:1	IP67	MGME302G1	MGME302S1	Static fri	Static friction torque (N·m)	
Annlinghle	Model	A5II, A5 series	MFD	TB3A2	Engagin	g time (ms)	150 or less
Applicable driver	2 No.	A5IIE, A5E series	MFD OTB3A2E	-	Releasir	ng time (ms) Note)4	50 or less
	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	1.4±10 %
Power supp	ly capacit	y (kVA)	4	.5	Releasir	ng voltage (DC) (V)	2 or more
Rated outp		(W)	3000		Exciting	voltage (DC) (V)	24±2.4
Rated torqu		(N·m)	28.7				
Momentary		k torque (N·m)	71.7		• Permi	ssible load (For details, refe	er to P.183)
Rated curre	nt	(A(rms))		2.6		Radial load P-direction (N)	2058
Max. currer	t	(A(o-p))	8	0	During	Thrust load A-direction (N)	980
Regenerativ		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	1176
frequency (tin	es/min) Note)	DV0P4285×2	No limit Note)2		During	Radial load P-direction (N)	1470
Rated rotat	onal spee	d (r/min)	1000		During operation		
Max. rotatio	nal speed	l (r/min)	2000		operation	Thrust load A, B-direction (N)	490
Moment of	nertia	Without brake	48.4		For details of Note 1 to Note 5, refer to P.182, P.18		
of rotor (×1	0 ⁻⁴ kg·m²)	With brake	53.7			ions of Driver, refer to P.45.	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 \Diamond in number of applicable driver represents the		
	Resolutio	on per single turn	1048576	131072	series. For more information about the part number please refer to P.16.		



Dimensions



(b) Motor/Brake connector

<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.

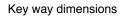
A5 Family

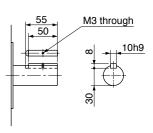
Motor Specifications

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

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

Mass: Without brake/ 20.0 kg With brake/ 23.5 kg





* Figures in [] represent the dimensions with brake.

Motor Specifications

200 V MGME 4.5 kW [Middle inertia, Middle capacity]

Specifications

				AC2	00 V	
Motor model		IP65		-	-	
*1		IP67		MGME452G1	MGME452S1	
Annlinghle	Model	A5II, A5	series	MFD🛇	TB3A2	
Applicable driver *2	No.	A5IIE, A	5E series	MFD OTB3A2E	_	
unver	Fi	rame sym	bol	F-fra	ame	
Power supply	capacit	у	(kVA)	7	.5	
Rated output			(W)	45	00	
Rated torque			(N·m)	43	3.0	
Momentary N	lax. pea	k torque	(N·m)	107		
Rated current	t	(A(rms))	29.7		
Max. current			(A(o-p))	110		
Regenerative	brake	Without option		No limit Note)2		
frequency (times	/min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	1000		
Max. rotation	al speed		(r/min)	2000		
Moment of in	ertia	Without	brake	79).1	
of rotor (×10-	⁴ kg·m²)	With b	orake	84.4		
	Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per sing	le turn	1048576	131072	

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

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

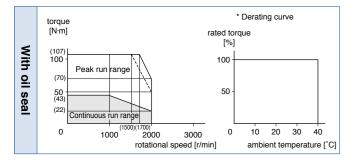
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

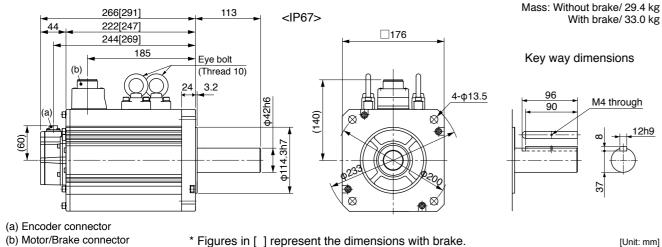
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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



(b) Motor/Brake connector

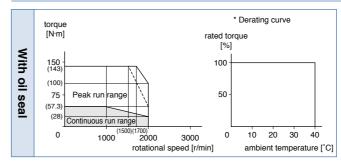
* Figures in [] represent the dimensions with brake.

<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.

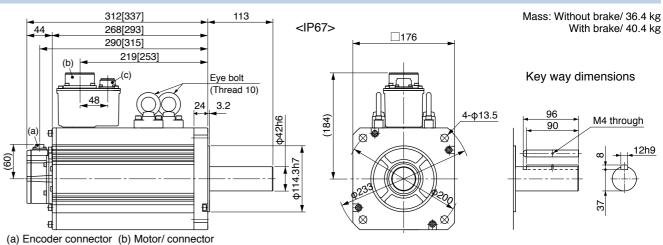
200 V MGME 6.0 kW [Middle inertia, Middle capacity]

Creations

Specifi	catio	ns						
		AC200 V			specifications (For details ake will be released when it is e	-		
IP65		-	-		use this for braking the motor in			
	1	IP67	MGME602G1	MGME602S1	Static fri	Static friction torque (N·m)		
	Mod	A5I, A5 series	MGD	TC3B4	Engagin	g time (ms)	150 or less	
Applicable driver *	2 No.	A5IIE, A5E series	. —	-	Releasir	ng time (ms) Note)4	50 or less	
		Frame symbol	G-fi	rame	Exciting	current (DC) (A)	1.4±10 %	
Power supp	ly capa	city (kVA)	9	.0	Releasir	ng voltage (DC) (V)	2 or more	
Rated outpu		(W)	6000		Exciting	voltage (DC) (V)	24±2.4	
Rated torque (N·m)		57.3						
Momentary Max. peak torque (N·m)		143		• Permi	ssible load (For details, refe	er to P.183)		
Rated curre	nt	(A(rms))	3	3.8		Radial load P-direction (N)	2058	
Max. curren	t	(A(o-p))	1	49	During	Thrust load A-direction (N)	980	
Regenerativ		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	1176	
frequency (tim	es/min) Not	DV0P4285×4	No lim	No limit Note)2		Radial load P-direction (N)	1764	
Rated rotati	onal spe	ed (r/min)	10	1000				
Max. rotatio	nal spe	ed (r/min)	20	2000		Thrust load A, B-direction (N)	588	
Moment of i	nertia	Without brake	1	101		ails of Note 1 to Note 5, refer t	o P.182, P.18	
of rotor (×10) ^{−4} kg·m) With brake	1	107		ions of Driver, refer to P.46.		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 time	10 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 \Diamond in number of applicable driver represents the			
Γ	Resolut	ion per single turn	1048576	131072		. For more information about t refer to P.16.	he part numb	



Dimensions



(c) Brake connector (only 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.

A5 Family

Motor Specifications

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

* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC2	00 V	
Mator model		IP65		MHME102GC	MHME102SC	
Motor model *1		IP67		MHME102G1	MHME102S1	
Amplicable	Model	A5II, A5	series	MDD¢	T3530	
Applicable driver *2	No.	A5IIE, A	5E series	MDD OT3530E	-	
unver	Fr	ame sym	bol	D-fra	ame	
Power supply	capacit	у	(kVA)	1	.8	
Rated output			(W)	10	00	
Rated torque			(N·m)	4.	77	
Momentary M	ax. peal	k torque	(N·m)	14.3		
Rated current		(A(rms))	5.7		
Max. current			(A(o-p))	24		
Regenerative	orake	Without option		83		
frequency (times	min) Note)1	DV0P4284		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	3000		
Moment of ine	ertia	Without	brake	24.7		
of rotor (×10 ⁻²	kg∙m²)	With b	orake	26.0		
	Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less	
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per sing	le turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

Mass: Without brake/ 6.7 kg

Key way dimensions

41

<u>...</u>

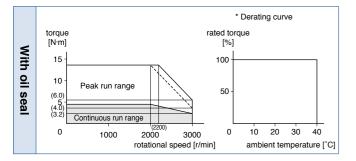
With brake/ 8.1 kg

M3 through

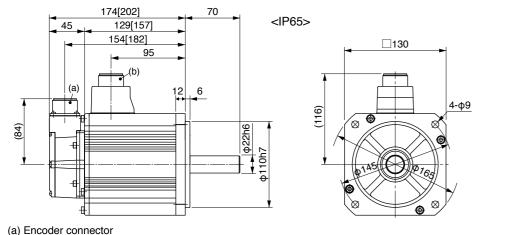
.8h9

[Unit: mm]

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



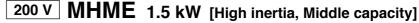
Dimensions



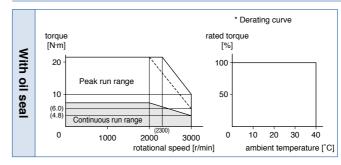
(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

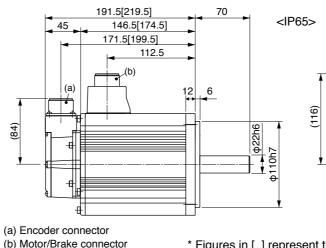
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



Specifications								
			AC200 V			• 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.		
IP65		MHME152GC MHME152SC						
Motor mod	∂I ⊧1	IP67	MHME152G1	MHME152S1	Static fri	ction torque (N·m)	13.7 or more	
Anniliantala	Mode	A5II, A5 series	MDD	T5540	Engagin	g time (ms)	100 or less	
Applicable driver	^{₽2} No.	A5IE, A5E series	MDD O T5540E	-	Releasir	ng time (ms) Note)4	50 or less	
	F	rame symbol	D-fr	ame	Exciting	current (DC) (A)	0.79±10 %	
Power sup	oly capaci	ty (kVA)	2	.3	Releasir	ng voltage (DC) (V)	2 or more	
Rated outp	ut	(W)	1500		Exciting	Exciting voltage (DC) (V)		
Rated torq	Rated torque (N·m)		7.16					
Momentary	Max. pea	ak torque (N·m)	21.5		 Permi 	• Permissible load (For details, refer to P.183)		
Rated curre	ent	(A(rms))	9.4			Radial load P-direction (N)	980	
Max. curre	nt	(A(o-p))			During	Thrust load A-direction (N)	588	
Regenerativ		Without option	22		assembly	Thrust load B-direction (N)	686	
frequency (ti		D VOI 4204	130		During	Radial load P-direction (N)	490	
Rated rotat	ional spe	ed (r/min)	2000		operation			
Max. rotati	onal spee	d (r/min)	3000		operation	Thrust load A, B-direction (N)	190	
Moment of		Without brake	37	7.1		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.43. 		
of rotor (×1	0 ⁻⁴ kg·m²)	With brake	38	3.4				
	Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		*2 The p	 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary enc	oder spec	ifications Note)5	20-bit Incremental			Detail of model designation, refer to P.16. *3 \Diamond in number of applicable driver represents the		
Resolution per single turn			1048576	131072	series. For more information about the part number			



Dimensions



<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.

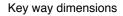
A5 Family **Motor Specifications**

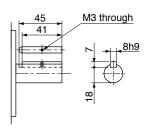
please refer to P.16.

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

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

Mass: Without brake/ 8.6 kg With brake/ 10.1 kg





130 1-Φ

* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC2	00 V	
Motor model		IP65		MHME202GC	MHME202SC	
		IP67		MHME202G1	MHME202S1	
Annlinghle	Model	A5II, A5 ser	ies	MED	T7364	
Applicable driver *2	No.	A5IIE, A5E	series	MED 	-	
unver	Fi	ame symbol	I	E-fra	ame	
Power supply	capacit	y (kVA)	3	.3	
Rated output			(W)	20	00	
Rated torque		(N∙m)	9.	55	
Momentary M	ax. pea	k torque (N∙m)	28.6		
Rated current		(A(r	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 br	ake	57.8		
of rotor (×10 ⁻⁴	kg∙m²)	With bral	ke	59.6		
	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	lesolutio	n per single t	turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.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.

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

50

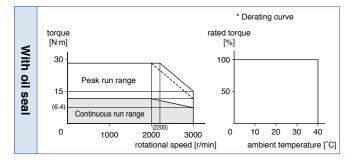
With brake/ 15.5 kg

M3 through

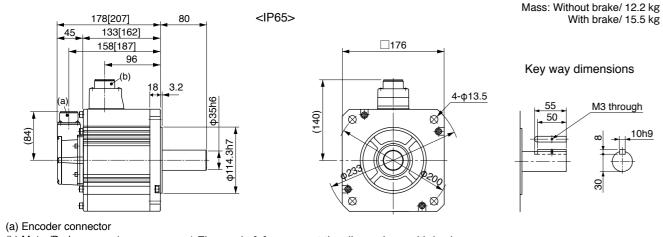
10h9

[Unit: mm]

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



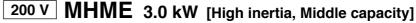
Dimensions



(b) Motor/Brake connector

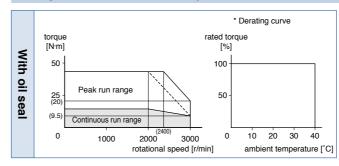
* Figures in [] represent the dimensions with brake.

<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.

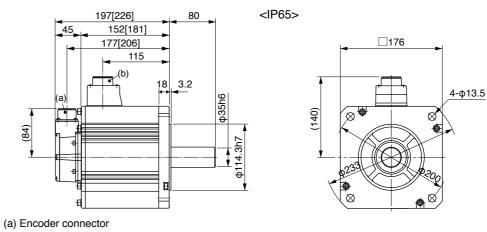


Specifications

Specin	callo	15					
		AC2	00 V	 Brake specifications (For details, refer to P.183 /This brake will be released when it is energized.) 			
IP65		MHME302GC MHME302SC		(Do not use this for braking the motor in motion.)			
	≠1 ⊧1	IP67	MHME302G1	MHME302S1] Static friction torque (N·m)		24.5 or more
Annlinghle	Mode	A5II, A5 series	MFD	TA390	Engagin	g time (ms)	80 or less
Applicable driver	₂ No.	A5IIE, A5E series	MFD OTA390E	-	Releasir	ng time (ms) Note)4	25 or less
		Frame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %
Power supp	ly capac	ity (kVA)	4	.5	Releasir	ng voltage (DC) (V)	2 or more
Rated outp	ut	(W)	3000		Exciting	voltage (DC) (V)	24±2.4
Rated torque (N·m)		14.3			0 ()()		
Momentary	· ·	• • • •	43.0		 Permi 	ssible load (For details, refe	er to P.183)
Rated current (A(rms))		16.0			Radial load P-direction (N)	1666	
Max. currer	nt	(A(o-p))	68		During	Thrust load A-direction (N)	784
Regenerativ		Without option	19		assembly	Thrust load B-direction (N)	980
frequency (tir		D VOI 4200AL	142		During	Radial load P-direction (N)	784
Rated rotat	onal spe	ed (r/min)	2000		During operation	Thrust load A, B-direction (N)	343
Max. rotatio	nal spee	d (r/min)	3000			, , , , , , , , , , , , , , , , , , , ,	
Moment of		Without brake	90.5			ails of Note 1 to Note 5, refer t	o P.182, P.18
of rotor (×1	0 ^{-₄} kg·m²) With brake	92	2.1		ions of Driver, refer to P.45.	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5		20-bit 17-bit Detail of model designation, refer to P.16 Incremental Absolute *3 ♦ in number of applicable driver represe		P.16.			
Γ	Resolut	on per single turn	1048576	131072	series. For more information about the part number please refer to P.16.		



Dimensions



(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.

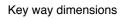
A5 Family

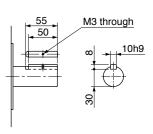
Motor Specifications

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

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

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





Motor Specifications

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

Specifications

			AC2	00 V		
Motor model	IP65			MHME402GC	MHME402SC	
wotor model *1		IP67		MHME402G1	MHME402S1	
Annlinghia	Model	A5II, A5	series	MFD🛇	TB3A2	
Applicable driver *2	No.	A5IIE, A	5E series	MFD OTB3A2E	-	
unver	Fi	ame sym	bol	F-fra	ame	
Power supply	capacit	у	(kVA)	6	.0	
Rated output			(W)	40	00	
Rated torque			(N·m)	19	9.1	
Momentary M	ax. pea	k torque	(N·m)	57.3		
Rated current		(A(rms))	21.0		
Max. current			(A(o-p))	89		
Regenerative I	orake	Without option		17		
frequency (times/	min) Note)1	DV0P4285×2		125		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	ertia	Without brake		112		
of rotor (×10 ⁻⁴	kg∙m²)	With b	orake	114		
Recommende ratio of the loa			5 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

(e	/
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 assembl	Thrust load A-direction (N)	784
400001101	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

• For details of Note 1 to Note 5, refer to P.182, P.183.

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

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

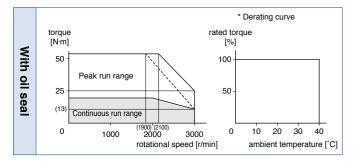
With brake/ 21.8 kg

M3 through

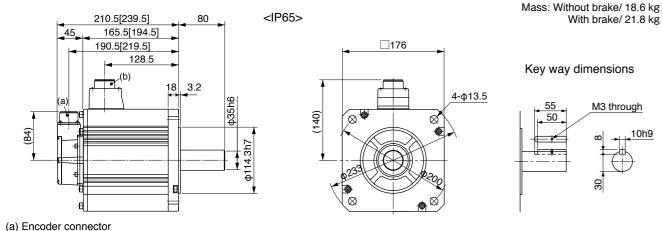
10h9

[Unit: mm]

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



Dimensions



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

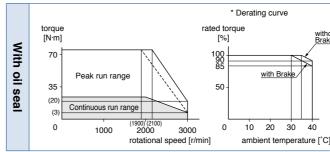
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

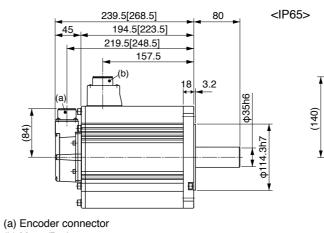
Specifications

Specifi	ica		3						
		AC200 V		• Brake specifications (For details, refer to P.183)					
Motor model		MHME502GC MHME502SC		(This brake will be released when it is energized. Do not use this for braking the motor in motion.)					
	ei *1		IP67	MHME502G1	MHME502S1	Static fr	Static friction torque (N·m)		
Annlinghing		Model	A5II, A5 series	MFD◇	TB3A2	Engagir	g time (ms)	80 or less	
Applicable driver	*2	No.	A5IIE, A5E series	MFD OTB3A2E	-	Releasi	ng time (ms) Note)4	25 or less	
unvor		Fr	ame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %	
Power sup		apacity	· · · · · · · · · · · · · · · · · · ·		.5	Releasi	ng voltage (DC) (V)	2 or more	
Rated outp			(W)			Exciting	voltage (DC) (V)	24±2.4	
Rated torqu			(N·m)	23.9		• Dermine sible lead (Ear dataile acts in D (22)			
Momentary		x. peak	1 ()	71.6		• Perm	• Permissible load (For details, refer to P.		
Rated curre	ent		(A(rms))	25.9			Radial load P-direction (N)	1666	
Max. curre	nt		(A(o-p))	110		During	Thrust load A-direction (N)	784	
Regenerativ		-	Without option	10		assembly	Thrust load B-direction (N)	980	
frequency (tir	mes/m	in) Note)1	DV0P4285×2	76			Radial load P-direction (N)	784	
Rated rotat	tiona	I speed	d (r/min)	2000		During			
Max. rotation	onal	speed	(r/min)	3000		operation	Thrust load A, B-direction (N)	343	
Moment of	iner	tia	Without brake	162		For details of Note 1 to Note 5, refer to P.182, P.			
of rotor (×1	0 ⁻⁴ ł	(g∙m²)	With brake	10	64	Dimensions of Driver, refer to P.45.			
Recommended moment of inertia ratio of the load and the rotor Note)3				5 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encoder specifications Note)5			ications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16.			
[Re	solutio	n per single turn	1048576	131072	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.>) * Derating curve torque [N·m] rated torqu [%] Brake 70 100 with Brak Peak run range 35 50 (20) Continuous run range (3) 10 20 30 40 0 0 1000 2000 3000 rotational speed [r/min] ambient temperature [°C]



Dimensions



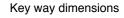
(b) Motor/Brake connector

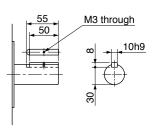
A5 Family

Motor Specifications

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

Mass: Without brake/ 23.0 kg With brake/ 26.2 kg





176 4-φ13.5 ø∅ \otimes

* 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.

Motor Specifications

200 V MHME 7.5 kW [High inertia, Middle capacity]

Specifications

				AC2	00 V	
Motor model	IP65			-	-	
*1		IP67		MHME752G1	MHME752S1	
A	Model	A5II, A5 series		MGD🛇	TC3B4	
Applicable driver *2	No.	A5IIE, A5E ser	ies	_	_	
diver	Fr	ame symbol		G-fr	ame	
Power supply	capacit	y (kV	A)	1	1	
Rated output		(V	V)	75	00	
Rated torque		(N·r	n)	47	7.8	
Momentary Ma	ax. peal	k torque (N·r	n)	119		
Rated current		(A(rms	S))	44.0		
Max. current		(A(o-p)))	165		
Regenerative b	orake	Without option		No limit Note)2		
frequency (times/	nin) Note)1	DV0P4285×4		No limit Note)2		
Rated rotation	al spee	d (r/mi	n)	1500		
Max. rotationa	l speed	(r/mi	n)	3000		
Moment of ine	rtia	Without brak	e	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	Rotary encoder specifications Note)5				17-bit Absolute	
R	esolutio	n per single turr	٦	1048576	131072	

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

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

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

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

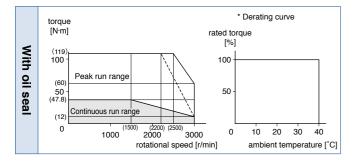
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.46.

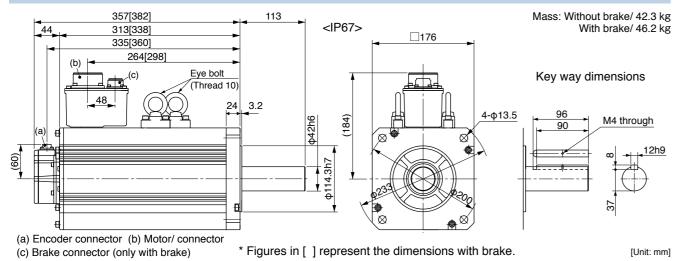
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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.>)



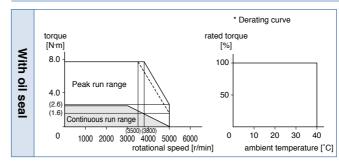
Dimensions



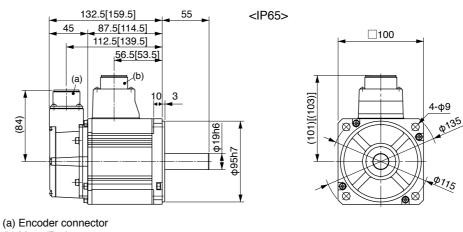
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400 V MSME 750 W [Low inertia, Middle capacity]

- --

	Specifications								
		AC400 V		• Brake specifications (For details, refer to P.183)					
Motor mode	Motor model		IP65	MSME084GC MSME084SC		(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
	1		IP67	MSME084G1	MSME084S1	Static	friction torque (N·m) 2.5 or more		
Applicable	1	Model	A5II, A5 series	MDD	>T2412	Engag	ging time (ms) 50 or less		
Applicable driver *	2	No.	A5IIE, A5E series	MDD 	-	Releas	sing time (ms) Note)4 15 or less		
		Fr	ame symbol	D-fr	ame	Excitin	ng current (DC) (A) 0.70±10 %		
Power supp	ly ca	apacity	y (kVA)		.6	Releas	sing voltage (DC) (V) 2 or more		
Rated output (W)		· · · · · · · · · · · · · · · · · · ·	750		Excitin	ng voltage (DC) (V) 24±2.4			
Rated torqu			(N·m)	2.39					
Momentary	Max	k. peał	k torque (N·m)	7.16		• Pern	• Permissible load (For details, refer to P.183)		
Rated curre	nt		(A(rms))	2.4			Radial load P-direction (N) 980		
Max. curren	t		(A(o-p))	10		During	Thrust load A-direction (N) 588		
Regenerativ			Without option	No limit Note)2		assemb	ly Thrust load B-direction (N) 686		
frequency (tim	es/mir	n) Note)1	DV0PM20048	No lim	İt Note)2	Duri	Radial load P-direction (N) 490	-	
Rated rotati	onal	l speed	d (r/min)	3000		During operatio			
Max. rotatio	nal	speed	(r/min)	50	000	operatio	Thrust load A, B-direction (N) 196		
Moment of i			Without brake	1.	61		For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×10) ⁻⁴ k	g∙m²)	With brake	1.	93		nsions of Driver, refer to P.44.		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 				
Rotary encoder specifications Note)5		ications Note)5	20-bit 17-bit Incremental Absolute		Deta	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the			
	Res	solutio	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.			



Dimensions



(b) Motor/Brake connector

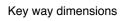
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

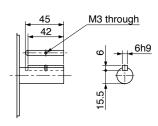
A5 Family **Motor Specifications**

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.)

Mass: Without brake/ 3.1 kg With brake/ 4.1 kg





* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC4	00 V	
Motor model	IP65			MSME104GC	MSME104SC	
*1		IP67		MSME104G1	MSME104S1	
Annelissiste	Model	A5II, A5	series	MDD	T3420	
Applicable driver *2	No.	A5IIE, A5	5E series	MDD OT3420E	-	
unver	Fr	ame syml	bol	D-fr	ame	
Power supply	capacit	у	(kVA)	1	.8	
Rated output			(W)	10	00	
Rated torque			(N·m)	3.	18	
Momentary M	ax. peal	k torque	(N·m)	9.55		
Rated current		(/	A(rms))	3.3		
Max. current		((A(o-p))	14		
Regenerative t	orake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0PM20048		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	2.03		
of rotor (×10 ⁻⁴	kg∙m²)	With b	rake	2.35		
Recommende ratio of the loa			15 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.44.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

Mass: Without brake/ 3.5 kg

M3 through

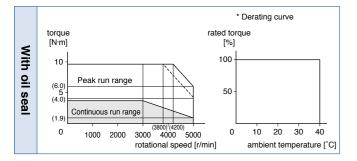
6h9

[Unit: mm]

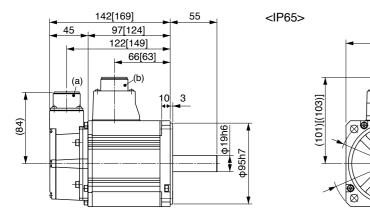
Key way dimensions

With brake/ 4.5 kg

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



Dimensions





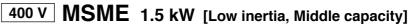
(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

100

4-Φ9

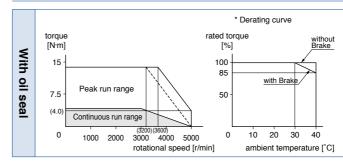
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



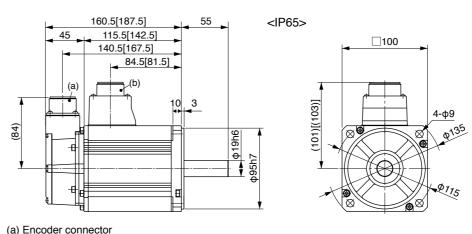
Specification

Specific	atior	IS							
			AC4	00 V		specifications (For details			
Motor model	Motor model *1 IP65		MSME154GC MSME154SC			(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
			MSME154G1	MSME154S1	Static friction torque (N·m)		7.8 or more		
Annlinght	Mode	A5II, A5 series	MDD	T3420	Engagin	g time (ms)	50 or less		
Applicable driver *2	No.	A5IIE, A5E series	MDD OT3420E	-	Releasir	ng time (ms) Note)4	15 or less		
	F	rame symbol	D-fr	ame	Exciting	current (DC) (A)	0.81±10 %		
Power suppl	y capaci	ty (kVA)		.3	Releasir	ng voltage (DC) (V)	2 or more		
Rated output		(W)	1500		Exciting	voltage (DC) (V)	24±2.4		
Rated torque		(N·m)	4.77						
,	Momentary Max. peak torque (N·m)		14.3		• Permissible load (For details, refer to P.183)				
Rated currer	t	(A(rms))		.2		Radial load P-direction (N)	980		
Max. current		(A(o-p))		8	During	Thrust load A-direction (N)	588		
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686		
frequency (time	s/min) Note	¹ DV0PM20048	No limit Note)2		During	Radial load P-direction (N)	490		
Rated rotatio	nal spe	ed (r/min)	3000		During operation				
Max. rotation	al spee	d (r/min)	5000		operation	Thrust load A, B-direction (N)	196		
Moment of ir	ertia	Without brake	2.84			• For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10	⁻⁴ kg·m²)	With brake	3.17		• Dimensions of Driver, refer to P.44.				
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 					
Rotary encoder specifications Note)5		20-bit Incremental	20-bit 17-bit Detail of model designation, refer to P.		P.16.				
	Resoluti	on per single turn	1048576	131072	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



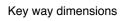
(b) Motor/Brake connector

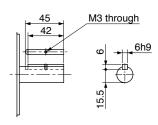
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

A5 Family **Motor Specifications**

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

Mass: Without brake/ 4.4 kg With brake/ 5.4 kg





* Figures in [] represent the dimensions with brake.

[Unit: mm]

A5 Family

Motor Specifications

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

Specifications

			AC4	00 V		
Motor model		IP65		MSME204GC	MSME204SC	
wotor model *1		IP67		MSME204G1	MSME204S1	
Arristante	Model	A5II, A5 series	s	MED	T4430	
Applicable driver *2	No.	A5IIE, A5E se	eries	MED _{\begin{tabular}{l} T4430E \\ T4450E}	-	
unver	Fr	ame symbol		E-fra	ame	
Power supply	capacit	y (k'	VA)	3	.3	
Rated output		((W)	20	00	
Rated torque		(N	·m)	6.	37	
Momentary M	ax. peal	k torque (N	·m)	19.1		
Rated current		(A(rm	າຣ))	5.7		
Max. current		(A(o	-p))	24		
Regenerative t	orake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0PM20049		No limit Note)2		
Rated rotation	al spee	d (r/n	nin)	30	00	
Max. rotationa	l speed	(r/n	nin)	5000		
Moment of ine	ertia	Without bra	ke	3.	.68	
of rotor (×10 ⁻⁴	kg∙m²)	With brake	Э	4.01		
	Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	er speci	fications No	ote)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single tu	rn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

*1 Motor specifications:

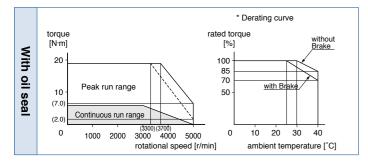
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

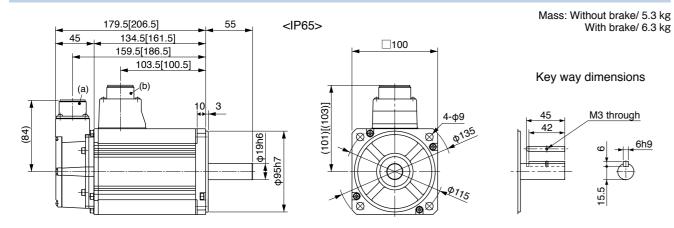
6h9

[Unit: mm]

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



Dimensions



⁽a) Encoder connector

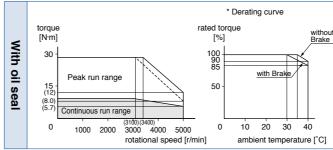
* Figures in [] represent the dimensions with brake.

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

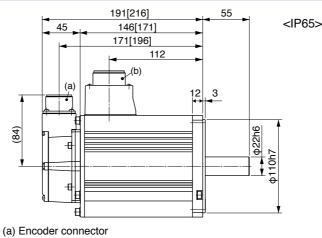
400 V MSME 3.0 kW [Low inertia, Middle capacity]

• · · · ·

Specific	ation	S						
	AC400 V					specifications (For details	,	
Motor model		IP65	MSME304GC MSME304SC		(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
Motor model *1		IP67	MSME304G1	MSME304S1	Static fri	Static friction torque (N·m)		
Annellashia	Model	A5II, A5 series	MFD	T5440	Engagin	g time (ms)	80 or less	
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	15 or less	
unver	Fi	rame symbol	F-fr	ame	Exciting	current (DC) (A)	0.81±10 %	
Power supply	/ capacit	y (kVA)	4	.5	Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)	3000		Exciting	voltage (DC) (V)	24±2.4	
Rated torque		(N·m)	9.55			0 () ()		
Momentary N	lax. pea	k torque (N·m)	28.6		• Permissible load (For details, refer to P.183)			
Rated curren	t	(A(rms))	9.2		During	Radial load P-direction (N)	980	
Max. current		(A(o-p))	3	39		Thrust load A-direction (N)	588	
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (time	s/min) Note)1	DV0PM20049×2	No limit Note)2			Radial load P-direction (N)	490	
Rated rotatio	nal spee	d (r/min)	3000		During			
Max. rotation	al speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	196	
Moment of in	ertia	Without brake	6.50			 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.45. 		
of rotor (×10	^₄ kg·m²)	With brake	6.85					
	Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		*2 The pr	 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encod	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		P.16.	
	Resolutio	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.			



Dimensions



(b) Motor/Brake connector

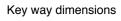
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

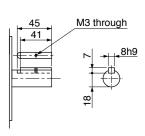
A5 Family **Motor Specifications**

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.)

Mass: Without brake/ 8.3 kg With brake/ 9.4 kg





120 4-Φ9 (113)

* Figures in [] represent the dimensions with brake.

⁽b) Motor/Brake connector

Motor Specifications

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

Specifications

			AC4	00 V		
Motor model		IP65		MSME404GC	MSME404SC	
Motor model		IP67		MSME404G1	MSME404S1	
Annlinghia	Model	A5II, A5	series	MFD🛇	TA464	
Applicable driver *2	No.	A5IIE, A5	5E series	MFD 	-	
unver	Fi	ame syml	bol	F-fra	ame	
Power supply	capacit	у	(kVA)	6	.8	
Rated output			(W)	40	00	
Rated torque			(N·m)	12	2.7	
Momentary M	ax. pea	k torque	(N·m)	38.2		
Rated current		(/	A(rms))	9.9		
Max. current		(A(o-p))	42		
Regenerative t	orake	Without option		No limit Note)2		
frequency (times/	min) 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	ertia	Without	brake	12.9		
of rotor (×10 ⁻⁴	kg∙m²)	With b	rake	14.2		
	Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

*1 Motor specifications:

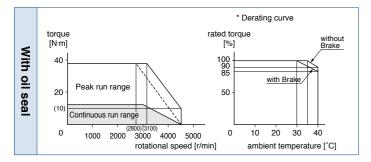
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

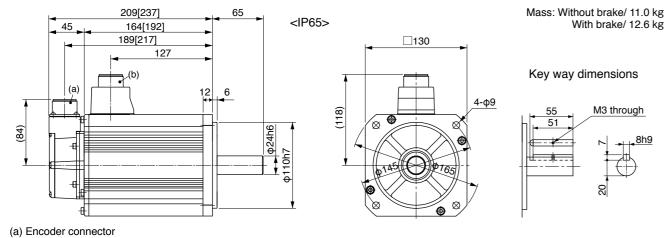
8h9

[Unit: mm]

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



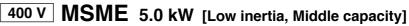
Dimensions



(b) Motor/Brake connector

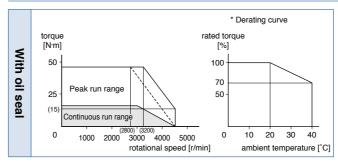
* Figures in [] represent the dimensions with brake.

<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.

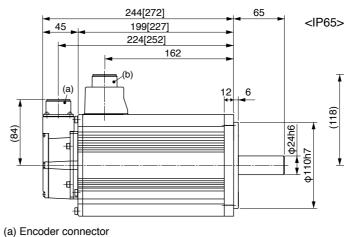


Specifications

Specific	atior	IS					
AC400 V		00 V	• Brake specifications (For details, refer to P.183)				
Motor model		IP65	MSME504GC MSME504SC		(This brake will be released when it is energized.) Do not use this for braking the motor in motion.)		
	Motor model *1 IP67		MSME504G1	MSME504S1	Static fri	ction torque (N·m)	16.2 or more
A 12 14	Mode	A5II, A5 series	MFD	TA464	Engagin	g time (ms)	110 or less
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	50 or less
	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	0.90±10 %
Power supply	capaci	ty (kVA)	7	.5	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	5000		Exciting	voltage (DC) (V)	24±2.4
Rated torque		(N·m)					
Momentary N	•	1 ()	47.7		• Permissible load (For details, refer to P.183)		
Rated curren	t	(A(rms))	12	2.0		Radial load P-direction (N)	980
Max. current		(A(o-p))	5	51	During	Thrust load A-direction (N)	588
Regenerative		Without option	357		assembly	Thrust load B-direction (N)	686
frequency (times	/min) Note)	¹ DV0PM20049×2	No limit Note)2		D .	Radial load P-direction (N)	784
Rated rotatio	nal spee	ed (r/min)	3000		During operation		
Max. rotation	al speed	d (r/min)	4500		•	Thrust load A, B-direction (N)	343
Moment of in		Without brake	17.4		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.45. 		
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		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encoder specifications Note)5		20-bit Incremental	20-bit 17-bit Detail of model designation, refer to P.		P.16.		
I	Resolutio	on per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



Dimensions



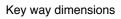
(b) Motor/Brake connector

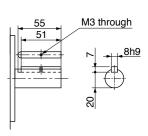
A5 Family **Motor Specifications**

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

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

Mass: Without brake/ 14.0 kg With brake/ 16.0 kg





130 4-φ9 (118)

* 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.

Motor Specifications

400 V MDME 400 W [Middle inertia, Middle capacity]

Specifications

			AC4	00 V		
Motor model		IP65		MDME044GC	MDME044SC	
MOTOL MODEL *1		IP67		MDME044G1	MDME044S1	
A	Model	A5II, A5	series	MDD¢	T2407	
Applicable driver *2	No.	A5IIE, A	5E series	MDD OT2407E	-	
unver	Fr	ame sym	bol	D-fra	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(rms))	1.2		
Max. current			(A(o-p))	4.9		
Regenerative I	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	al speed		(r/min)	3000		
Moment of ine	ertia	Without brake		1.61		
of rotor (×10 ⁻⁴	kg∙m²)	With t	orake	1.93		
	Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	Rotary encoder specifications			20-bit Incremental	17-bit Absolute	
F	lesolutio	n per sing	le turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.44.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

Mass: Without brake/ 3.1 kg

M3 through

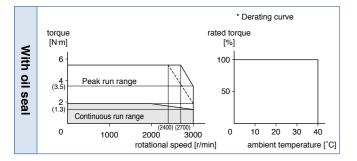
6h9

[Unit: mm]

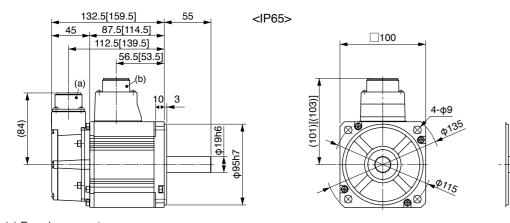
Key way dimensions

With brake/ 4.1 kg

Torque characteristics (at AC400 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.

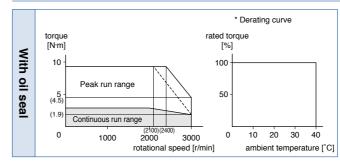
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



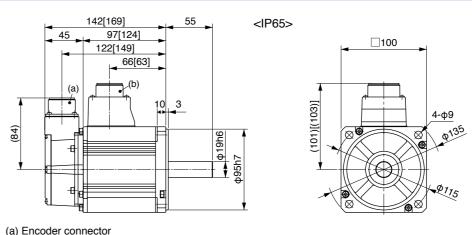
Specifications

					• Brake	specifications (For details	s. refer to P.18
			AC4	00 V	(This brake will be released when it is energized.)		
Motor mode		IP65	MDME064GC	MDME064SC		Do not use this for braking the motor in motion.	
	;1	IP67	MDME064G1	MDME064S1	Static friction torque (N·m)		2.5 or more
Annella alcha	Mode	A5I, A5 series	MDD	T2407	Engagin	g time (ms)	50 or less
Applicable driver *	2 No.	A5IE, A5E series	MDD OT2407E	-	Releasir	ng time (ms) Note)4	15 or less
	F	Frame symbol	D-fr	ame	Exciting	current (DC) (A)	0.70±10 %
Power supp	ly capac	ty (kVA)		.2	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)		600 Exciting voltage (DC) (V)		voltage (DC) (V)	24±2.4
Rated torque (N·m)				86			
Momentary	· ·	• • • •	8.59		• Permissible load (For details, refer to P.183)		er to P.183)
Rated curre	nt	(A(rms))	1.5			Radial load P-direction (N)	980
Max. currer	t	(A(o-p))	6	.5	During	Thrust load A-direction (N)	588
Regenerativ		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (tim	es/min) Note	¹ DV0PM20048	No limit Note)2			Radial load P-direction (N)	
Rated rotati	onal spe	ed (r/min)	2000		During		490
Max. rotatio	nal spee	d (r/min)	3000		operation	Thrust load A, B-direction (N)	196
Moment of	nertia	Without brake	2.03		For details of Note 1 to Note 5, refer to P.182, P.1		
of rotor (×10) ^{−4} kg·m²	With brake	2.35			ions of Driver, refer to P.44.	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 time	*1 Motor specifications: 10 times or less *2 The product that the end of driver mode designed in the set of driver mode			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	 designation has "E" is "Position control type". Detail of model designation, refer to P.16. *3 in number of applicable driver represents the 		
Γ	Resoluti	on per single turn	1048576	131072	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



(b) Motor/Brake connector

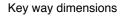
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

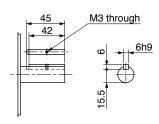
A5 Family

Motor Specifications

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

Mass: Without brake/ 3.5 kg With brake/ 4.5 kg





* Figures in [] represent the dimensions with brake.

Motor Specifications

400 V MDME 1.0 kW [Middle inertia, Middle capacity]

Specifications

			AC4	00 V		
Motor model		IP65		MDME104GC	MDME104SC	
		IP67		MDME104G1	MDME104S1	
Amplicable	Model	A5II, A5 ser	ies	MDD¢	T2412	
Applicable driver *2	No.	A5IIE, A5E	series	MDD OT2412E	-	
unver	Fr	ame symbo	I	D-fra	ame	
Power supply	capacit	y ((kVA)	1	.8	
Rated output			(W)	10	00	
Rated torque		((N·m)	4.	77	
Momentary M	ax. peal	k torque ((N·m)	14.3		
Rated current		(A(I	rms))	2.8		
Max. current		(A((o-p))	12		
Regenerative I	orake	Without op	otion	tion No limit Note)2		
frequency (times/	min) Note)1	DV0PM20	048	No limit Note)2		
Rated rotation	al spee	d (r	/min)	2000		
Max. rotationa	al speed	(r.	/min)	30	00	
Moment of ine	ertia	Without br	rake	4.	60	
of rotor (×10 ⁻⁴	kg∙m²)	With bra	ke	5.90		
	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	
F	lesolutio	n per single	turn	1048576	131072	

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

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

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

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

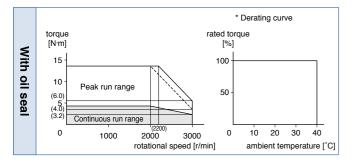
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.44.

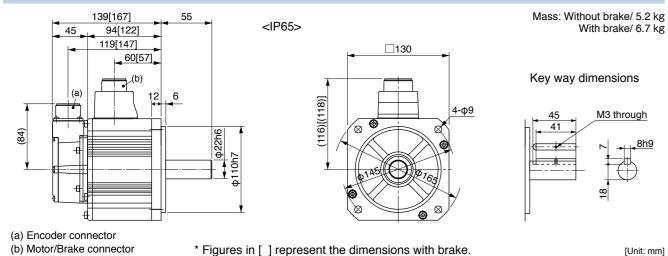
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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



Dimensions



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

[Unit: mm]

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

With brake/ 6.7 kg

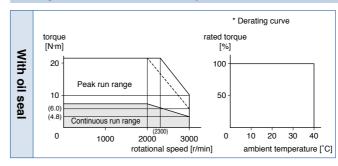
M3 through

.8h9

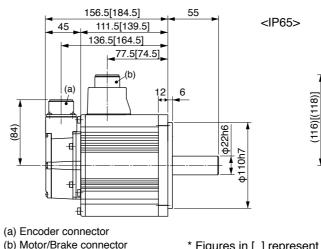
400 V MDME 1.5 kW [Middle inertia, Middle capacity]

Specifications

Specifications								
			AC4	00 V		specifications (For details ake will be released when it is e		
Motor mod		IP65	MDME154GC	MDME154SC				
	#1	IP67	MDME154G1	MDME154S1	Static fr	Static friction torque (N·m)		
Annlinghia	Mod	el A5II, A5 series	MDD	T3420	Engagir	g time (ms)	100 or less	
Applicable driver	2 No.	A5IE, A5E serie	s MDD OT3420E	-	Releasi	ng time (ms) Note)4	50 or less	
		Frame symbol	D-fr	ame	Exciting	current (DC) (A)	0.79±10 %	
Power supp	, ,	, (,	.3	Releasi	ng voltage (DC) (V)	2 or more	
Rated outp		(W	,	500	Exciting voltage (DC) (V) 2		24±2.4	
Rated torqu		(N·m	,	16				
Momentary Max. peak torque (N·m)		,	21.5		ssible load (For details, refe	er to P.183)		
Rated curre	ent	(A(rms)	, <u> </u>	4.7		Radial load P-direction (N)	980	
Max. currer	nt	(A(o-p)) 2	20 No limit Note)2		Thrust load A-direction (N)	588	
Regenerativ		Without option	No lim			Thrust load B-direction (N)	686	
frequency (tir	nes/min) No	^{e)1} DV0PM20048	No lim	No limit Note)2				
Rated rotat	onal sp	eed (r/min	2000		During operation	Radial load P-direction (N)	490	
Max. rotatio	nal spe	ed (r/min) 30	3000		Thrust load A, B-direction (N)	196	
Moment of	inertia	Without brake	6.	6.70		For details of Note 1 to Note 5, refer to P.182, P.183		
of rotor (×1	0⁻⁴ kg∙m	²) With brake	7.	7.99		ions of Driver, refer to P.44.		
Recommended moment of inertia ratio of the load and the rotor Note)3			3 10 time	*1 Motor specifications: 10 times or less *2 The product that the end of driver model				
Rotary enc	Rotary encoder specifications Note)5			17-bit Absolute	 designation has "E" is "Position control type". Detail of model designation, refer to P.16. *3 in number of applicable driver represents the 			
[Resolu	tion per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.			



Dimensions



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

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

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

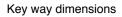
A5 Family

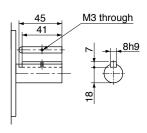
Motor Specifications

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

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

Mass: Without brake/ 6.7 kg With brake/ 8.2 kg





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* Figures in [] represent the dimensions with brake.

Motor Specifications

400 V MDME 2.0 kW [Middle inertia, Middle capacity]

Specifications

			AC4	00 V		
Motor model		IP65	MDME204GC	MDME204SC		
		IP67	MDME204G1	MDME204S1		
Annlinghle	Model	A5II, A5 series	MED	T4430		
Applicable driver *2	No.	A5IIE, A5E series	MED _O T4430E	-		
unver	Fr	ame symbol	E-fr	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	28.6		
Rated current		(A(rms))	5.9			
Max. current		(A(o-p))	25			
Regenerative I	orake	Without option	No lim	No limit Note)2		
frequency (times/	min) Note)1	DV0PM20049	No limit Note)2			
Rated rotation	al spee	d (r/min)	2000			
Max. rotationa	l speed	(r/min)	30	00		
Moment of ine	ertia	Without brake	8.	72		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	10	0.0		
	Recommended moment of inertia ratio of the load and the rotor Note)3			s or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute		
R	esolutio	n per single turn	1048576	131072		

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

(C	/
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)	490
	Thrust load A, B-direction (N)	196

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

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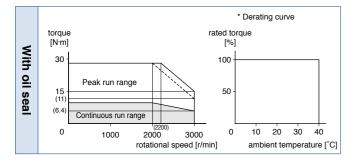
<u>⊨-</u>₩ <u>...</u> With brake/ 9.5 kg

M3 through

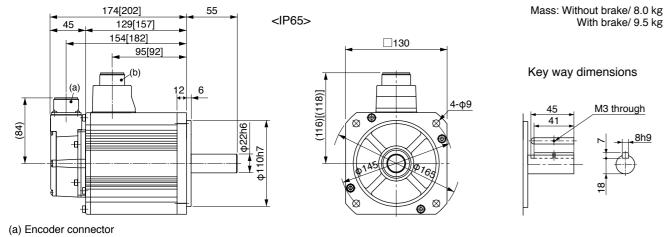
.8h9

[Unit: mm]

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



Dimensions



(b) Motor/Brake connector

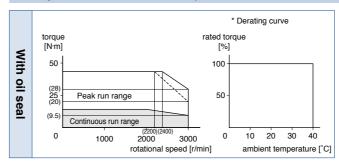
* Figures in [] represent the dimensions with brake.

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

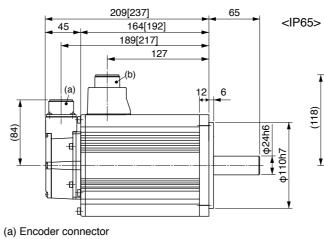
400 V MDME 3.0 kW [Middle inertia, Middle capacity]

Specifications

Specifi	Cal	lion	5					
				AC4	00 V		specifications (For details	
Motor mod			IP65	MDME304GC	MDME304SC			
	81 *1		IP67	MDME304G1	MDME304S1			16.2 or more
Annelisse	Ν	Nodel	A5II, A5 series	MFD	T5440	Engagin	g time (ms)	110 or less
Applicable driver	*2 N	No.	A5IIE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	50 or less
anver		Fr	ame symbol	F-fr	ame	Exciting	current (DC) (A)	0.90±10 %
Power supp	oly ca	apacity	/ (kVA)	4	.5	Releasir	ng voltage (DC) (V)	2 or more
Rated outp			(W)		00	Exciting voltage (DC) (V)		24±2.4
Rated torqu			(N·m)		ł.3			
Momentary		. peal	ctorque (N·m)	43.0		• Permi	ssible load (For details, refe	er to P.183)
Rated curre	ent		(A(rms))	8.7 37 No limit Note)2			Radial load P-direction (N)	980
Max. currer	nt		(A(o-p))			During	Thrust load A-direction (N)	588
Regenerativ			Without option			assembly	Thrust load B-direction (N)	686
frequency (tir	nes/min	n) Note)1	DV0PM20049×2	No limit Note)2		. .	Radial load P-direction (N)	784
Rated rotat	ional	spee	d (r/min)	2000		During		
Max. rotatio	onal s	speed	(r/min)	3000		operation	Thrust load A, B-direction (N)	343
Moment of	inerti	ia	Without brake	12.9		 For detail 	ails of Note 1 to Note 5, refer t	o P.182, P.183
of rotor (×1	0 ⁻⁴ k	g∙m²)	With brake	14.2			ions of Driver, refer to P.45.	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	*1 Motor specifications: 10 times or less *2 The product that the end of driver mod designed to a function has "E" is "Desition control			
Rotary encoder specifications Note)5			ications Note)5	20-bit Incremental	17-bit Absolute	 designation has "E" is "Position control type". Detail of model designation, refer to P.16. *3 in number of applicable driver represents the 		
[Res	solutio	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



Dimensions



(b) Motor/Brake connector

<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.

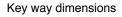
A5 Family

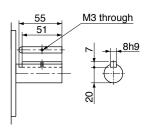
Motor Specifications

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

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

Mass: Without brake/ 11.0 kg With brake/ 12.6 kg





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* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

			AC4	00 V	
Matarimodal		IP65	MDME404GC	MDME404SC	
Motor model *1		IP67	MDME404G1	MDME404S1	
Amplicable	Model	A5II, A5 series	MFD🛇	TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	
unver	Fi	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	6	.8	
Rated output		(W)	40	00	
Rated torque		(N·m)	19	9.1	
Momentary M	ax. pea	k torque (N·m)	57	7.3	
Rated current		(A(rms))	10.6		
Max. current		(A(o-p))	45		
Regenerative	orake	Without option	No limit Note)2		
frequency (times	min) Note)1	DV0PM20049×2	No limit Note)2		
Rated rotation	nal spee	d (r/min)	2000		
Max. rotationa	al speed	(r/min)	30	00	
Moment of ine	ertia	Without brake	37	' .6	
of rotor (×10 ⁻²	kg∙m²)	With brake	42	2.9	
	Recommended moment of inertia ratio of the load and the rotor Note)3			s or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per single turn	1048576	131072	

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

1 0	,
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 During operation	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

• For details of Note 1 to Note 5, refer to P.182, P.183.

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

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

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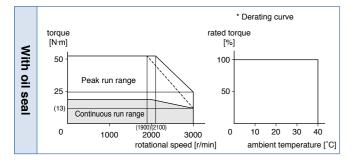
With brake/ 18.7 kg

M3 through

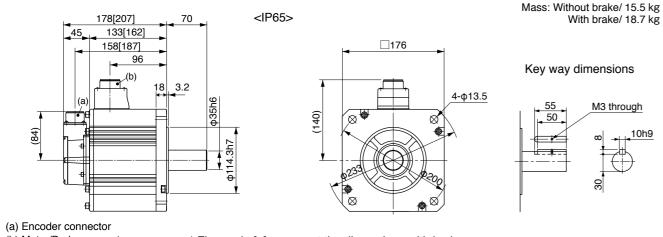
10h9

[Unit: mm]

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



Dimensions



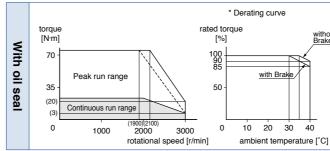
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400 V MDME 5.0 kW [Middle inertia, Middle capacity]

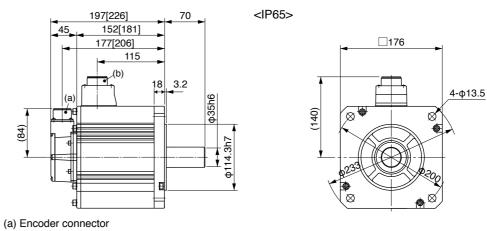
Specifications

Specin	oution							
		AC400 V		 Brake specifications (For details, refer to P.183 (This brake will be released when it is energized.) 				
IP65		MDME504GC MDME504SC			use this for braking the motor in			
Motor mode	:1	IP67	MDME504G1	MDME504S1	Static fri	ction torque (N·m)	24.5 or more	
	Mode	A5II, A5 series	MFD	TA464	Engagin	g time (ms)	80 or less	
Applicable driver	2 No.	A5IIE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	25 or less	
unver	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %	
Power supp	ly capaci	ty (kVA)	7	.5	Releasir	ng voltage (DC) (V)	2 or more	
Rated outp	ut	(W)	5000		Exciting	voltage (DC) (V)	24±2.4	
Rated torque (N·m)		23.9			0 ()()			
Momentary Max. peak torque (N·m)		71.6		• Permi	Permissible load (For details, refer to P.18			
Rated curre	nt	(A(rms))	13.0		During	Radial load P-direction (N)	1666	
Max. currer	t	(A(o-p))	5	55		Thrust load A-direction (N)	784	
Regenerativ		Without option	120		assembly	Thrust load B-direction (N)	980	
frequency (tin	es/min) Note)	¹ DV0PM20049×2	No limit Note)2					
Rated rotat	onal spee	ed (r/min)	2000		During	Radial load P-direction (N)	784	
Max. rotatio	nal spee	d (r/min)	3000		operation	Thrust load A, B-direction (N)	343	
Moment of	nertia	Without brake	48.0		 For detail 	ails of Note 1 to Note 5, refer t	o P.182, P.18	
of rotor (×1) ⁻⁴ kg·m²)	With brake	53	3.3		ions of Driver, refer to P.45.		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 time	10 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the			
Γ	Resolutio	on per single turn	1048576	131072	series	For more information about t refer to P.16.		

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>) * Derating curve torque [N·m] rated torque Brake 100 90 85 70 Peak run rang with Brake 50 35 (20) Continuous run range (3) 0 0 10 20 30 40 3000 1000 2000 rotational speed [r/min] ambient temperature [°C]



Dimensions



(b) Motor/Brake connector

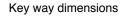
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

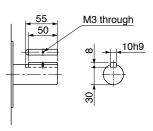
A5 Family

Motor Specifications

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

Mass: Without brake/ 18.6 kg With brake/ 21.8 kg





* Figures in [] represent the dimensions with brake.

Motor Specifications

400 V MDME 7.5 kW [Middle inertia, Middle capacity]

Specifications

			AC400 V			
Motor model		IP65		-	-	
*1		IP67		MDME754G1	MDME754S1	
Annlinghin	Model	A5II, A5	series	MGD🗘	TB4A2	
Applicable driver *2	No.	A5IIE, A	5E series	-	-	
anver	Fi	rame sym	bol	G-fr	ame	
Power supply	capacit	у	(kVA)	1	1	
Rated output			(W)	75	00	
Rated torque			(N·m)	47	7.8	
Momentary N	lax. pea	k torque	(N·m)	119		
Rated current	t	(A(rms))	22		
Max. current			(A(o-p))	83		
Regenerative	brake	Without	option	No limit Note)2		
frequency (times	/min) Note)1	DV0PM2	20049×3	No limit Note)2		
Rated rotation	nal spee	d	(r/min)	1500		
Max. rotation	al speed		(r/min)	3000		
Moment of in	ertia	Without	t brake	101		
of rotor (×10-	⁴ kg·m²)	With t	orake	1()7	
	Recommended moment of inertia ratio of the load and the rotor Note)3				s or less	
Rotary encod	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
F	Resolutio	n per sing	le turn	1048576	131072	

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

1 0	/
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
uoo	assembly	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176	
	Thrust load A, B-direction (N)	490	

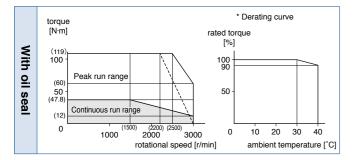
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.46.

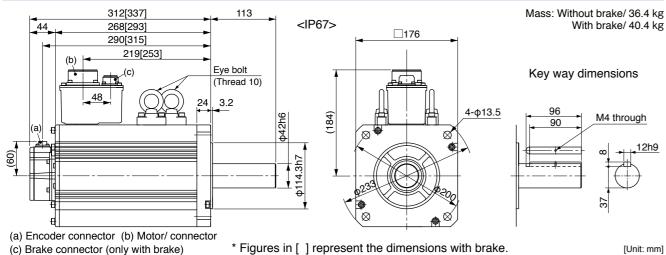
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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

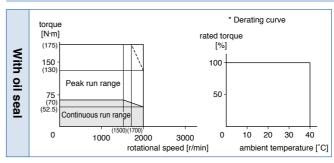


(c) Brake connector (only with brake)

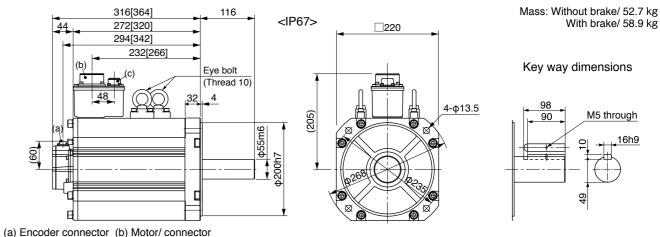
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400 V MDME 11.0 kW [Middle inertia, Middle capacity]

Creations

Specifi	cation	5						
			AC4	AC400 V Brake specifications (For details, refer to P.				
		IP65	_	-		ake will be released when it is e use this for braking the motor ir		
Motor mode	1	IP67	MDMEC14G1	MDMEC14S1	Static fri	ction torque (N·m)	100 or mor	
	Model	A5II, A5 series	мно	TB4A2	Engagin	g time (ms)	300 or less	
Applicable driver *	2 No.	A5IIE, A5E series	-	-	Releasir	ng time (ms) Note)4	140 or less	
unver	F	rame symbol	H-fr	ame	Exciting	current (DC) (A)	1.08±10 %	
Power supp	ly capacit	y (kVA)	1	7	Releasir	ng voltage (DC) (V)	2 or more	
Rated outpu	ıt	(W)	11000		Excitina	voltage (DC) (V)	24±2.4	
Rated torque (N·m)		70						
Momentary Max. peak torque (N·m)		175		 Permi 	ssible load (For details, refe	er to P.183)		
Rated curre	Rated current (A(rms))		27	7.1	_	Radial load P-direction (N)	4508	
Max. curren	t	(A(o-p))	1	01	During assembly	Thrust load A-direction (N)	1470	
Regenerativ		Without option	No lim	No limit Note)2		Thrust load B-direction (N)	1764	
frequency (tim	es/min) Note)1	DV0PM20059	No limit Note)2		. .	Radial load P-direction (N)	2254	
Rated rotati	onal spee	d (r/min)	1500		During			
Max. rotatio	nal speed	l (r/min)	2000		operation	Thrust load A, B-direction (N)	686	
Moment of i	nertia	Without brake	212			ails of Note 1 to Note 5, refer t	o P.182, P.18	
of rotor (×10) ⁻⁴ kg·m²)	With brake	2	20		ions of Driver, refer to P.46.		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 time	10 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary enco	der speci	fications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 \Diamond in number of applicable driver represents the			
Γ	Resolutio	n per single turn	1048576	131072	series	For more information about the refer to P.16.		



Dimensions



(c) Brake connector (only 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.

A5 Family

Motor Specifications

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

* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

			AC400 V			
Motor model		IP65		-	-	
		IP67		MDMEC54G1	MDMEC54S1	
Amplicable	Model	A5II, A5	series	MHD♦	TB4A2	
Applicable driver *2	No.	A5IIE, A	5E series	-	-	
diver	Fi	ame sym	bol	H-fra	ame	
Power supply	capacit	у	(kVA)	2	2	
Rated output			(W)	150	000	
Rated torque			(N·m)	95	5.5	
Momentary M	ax. pea	k torque	(N·m)	224		
Rated current		(A(rms))	33.1		
Max. current			(A(o-p))	118		
Regenerative t	orake	Without	option	No limit Note)2		
frequency (times/	min) Note)1	DV0PM	120059	No limit Note)2		
Rated rotation	al spee	d	(r/min)	1500		
Max. rotationa	l speed		(r/min)	2000		
Moment of ine	ertia	Without	t brake	302		
of rotor (×10 ⁻⁴	kg∙m²)	With t	orake	211		
	Recommended moment of inertia ratio of the load and the rotor Note)3				s or less	
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072	

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

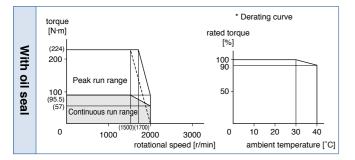
(C	,
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

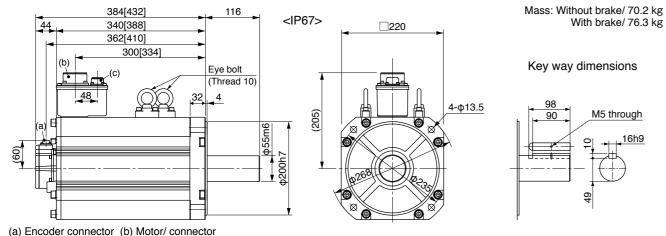
_ .	Radial load P-direction (N)	4508
During assembly During operation	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

• For details of Note 1 to Note 5, refer to P.182, P.183.

- 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.



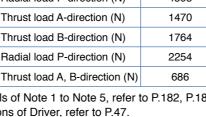
Dimensions



(c) Brake connector (only with brake)

* 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.



• Dimensions of Driver, refer to P.47.

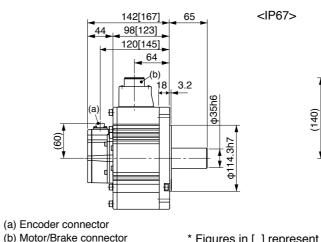
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type".

[Unit: mm]

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

torque [N·m] (21.5)⊢ With oil seal 20 100 Peak run range 50 10 Continuous run range 0 10 20 30 40 0 1000 2000 ,, 3000 rotational speed [r/min] ambient temperature [°C] Dimensions



* Derating curv

rated torque

* Figures in [] represent the dimensions with brake.

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

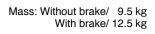
400 V MFME 1.5 kW [Middle inertia, Middle capacity]

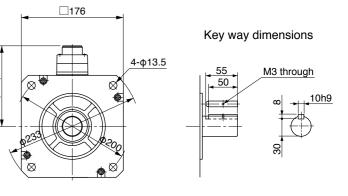
Specifi	ica	tion	S						
	AC400 V		• Brake specifications (For details, refer to P.183						
Motor model		IP65	-	-	(This brake will be released when it is energized. (Do not use this for braking the motor in motion.)				
	*1		IP67	MFME154G1	MFME154S1	Static fr	iction torque (N·m)	7.8 or more	
Annelisatela		Model	A5II, A5 series	MDD	T3420	Engagir	ng time (ms)	80 or less	
Applicable driver	*2	No.	A5IIE, A5E series	MDD \ T3420E	-	Releasi	ng time (ms) Note)4	35 or less	
anver		Fr	ame symbol	D-fr	ame	Exciting	current (DC) (A)	0.83±10 %	
Power sup	ply o	capacit	y (kVA)	2	.4	Releasi	ng voltage (DC) (V)	2 or more	
Rated output (W)		1500		Exciting	Exciting voltage (DC) (V)				
Rated torque (N·m)			. ,	7.16					
Momentary Max. peak torque (N·m)			k torque (N·m)	21.5		• Permissible load (For details, refer to P.183)			
Rated curre	ent		(A(rms))	3.8			Radial load P-direction (N)	980	
Max. currer	nt		(A(o-p))	1	6	During	Thrust load A-direction (N)	588	
Regenerativ			Without option	1(00	assembly	Thrust load B-direction (N)	686	
frequency (tir	nes/m	nin) Note)1	DV0PM20048	No lim	it Note)2	During	Radial load P-direction (N)	490	
Rated rotat	iona	al spee	d (r/min)	20	2000				
Max. rotatio	onal	speed	(r/min)	3000		operation	Thrust load A, B-direction (N)	196	
Moment of	iner	tia	Without brake	18.2		For details of Note 1 to Note 5, refer to P.182, P.1			
of rotor (×1	0-4	kg∙m²)	With brake	23	3.5		Dimensions of Driver, refer to P.44.		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	s or less	 *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 			
Rotary encoder specifications Note)5			fications Note)5	20-bit Incremental	17-bit Absolute				
[Re	esolutio	n per single turn	1048576	131072	series. For more information about the part number please refer to P.16.			

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A5 Family **Motor Specifications**

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





Motor Specifications

400 V MFME 2.5 kW [Middle inertia, Middle capacity]

Specifications

			AC4	00 V		
Motor model		IP65		-	-	
*1		IP67		MFME254G1	MFME254S1	
Annlinghia	Model	A5II, A5	series	MED	>T4430	
Applicable driver *2	No.	A5IIE, A	5E series	MED 	-	
unver	F	rame sym	nbol	E-fr	ame	
Power supply	capacit	у	(kVA)	3	.9	
Rated output			(W)	25	00	
Rated torque			(N·m)	11	.9	
Momentary N	lax. pea	k torque	(N·m)	30).4	
Rated curren	t		(A(rms))	6.7		
Max. current			(A(o-p))	29		
Regenerative	brake	Without	t option	75		
frequency (times	/min) Note)1	DV0PN	DV0PM20049 No limit Note)2		it Note)2	
Rated rotatio	nal spee	d	(r/min)	2000		
Max. rotation	al speed		(r/min)	3000		
Moment of in	ertia	Withou	t brake	35.8		
of rotor (×10	⁴ kg·m²)	With	brake	45.2		
Recommend ratio of the lo			10 time	s or less		
Rotary encod	ler speci	fications	20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	gle turn	1048576	131072	

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

	,
Static friction torque (N·m)	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)

_ .	Radial load P-direction (N)	1862
During assembly	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, P.183.

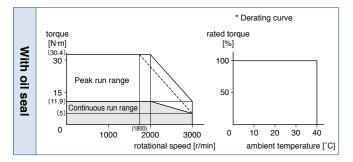
· Dimensions of Driver, refer to P.45.

*1 Motor specifications:

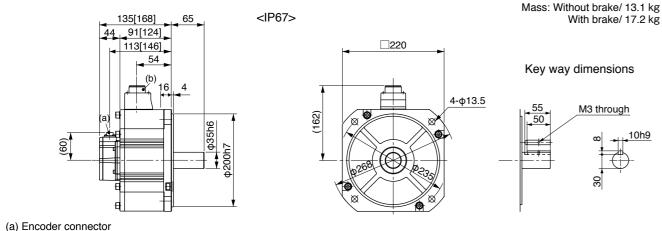
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamond in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

[Unit: mm]

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



Dimensions



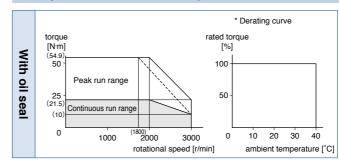
(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

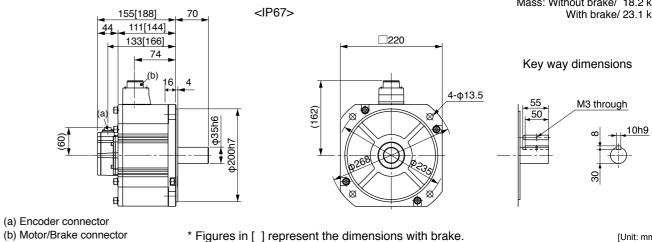
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



Specifications									
				AC400 V		• Brake specifications (For details, refer to P.183)			
Motor model			IP65	-	 – – – (This brake will be released when it is Do not use this for braking the motor it 				
			IP67	MFME454G1	MFME454S1	Static fr	Static friction torque (N·m) 31.		
Annlinghia		Model	A5II, A5 series	MFD	TA464	Engagir	ng time (ms)	150 or less	
Applicable driver	*2	No.	A5IIE, A5E series	MFD 	-	Releasi	ng time (ms) Note)4	100 or less	
divol		Fr	ame symbol	F-fr	ame	Exciting	current (DC) (A)	0.75±10 %	
Power sup	ply (capacit	y (kVA)	6	.9	Releasi	ng voltage (DC) (V)	2 or more	
Rated outp			(W)	4500		Exciting	Exciting voltage (DC) (V)		
Rated torq			(N·m)	21.5					
Momentary	y Ma	ax. peal	k torque (N·m)	54.9		• Perm	• Permissible load (For details, refer to P.183)		
Rated curr	ent		(A(rms))	12.4			Radial load P-direction (N)	1862	
Max. curre	nt		(A(o-p))	53		During	Thrust load A-direction (N)	686	
Regenerati			Without option	6	7	assembly	Thrust load B-direction (N)	686	
frequency (ti	mes/n	nin) Note)1	DV0PM20049×2	375		During	Radial load P-direction (N)	784	
Rated rota	tiona	al spee	d (r/min)	2000		During operation		294	
Max. rotati	ona	speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	294	
Moment of	ine	rtia	Without brake	63	3.1		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.45. 		
of rotor (×1	0-4	kg∙m²)	With brake	70).9				
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encoder specifications Note)5			fications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the			
	Re	esolutio	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.			



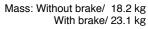
Dimensions



<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.

A5 Family **Motor Specifications**

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



Motor Specifications

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

Specifications

			AC4	00 V	
Matax madal		IP65	MGME094GC	MGME094SC	
Motor model *1		IP67	MGME094G1	MGME094S1	
A secolities a la la	Model	A5II, A5 series	MDD¢	T3420	
Applicable driver *2	No.	A5IIE, A5E series	MDD T3420E	-	
unver	Fr	ame symbol	D-fra	ame	
Power supply	capacit	y (kVA)	1	.8	
Rated output		(W)	90	00	
Rated torque		(N·m)	8.	59	
Momentary M	ax. peal	k torque (N·m)	19.3		
Rated current		(A(rms))	3.8		
Max. current		(A(o-p))	12		
Regenerative I	orake	Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0PM20048	No limit Note)2		
Rated rotation	al spee	d (r/min)	1000		
Max. rotationa	al speed	(r/min)	20	00	
Moment of ine	ertia	Without brake	6.70		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	7.9	99	
Recommender ratio of the loa			10 times	s or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per single turn	1048576	131072	

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

(0	,
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)	686
operation	Thrust load A, B-direction (N)	196

• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.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.

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

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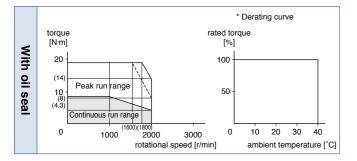
With brake/ 8.2 kg

M3 through

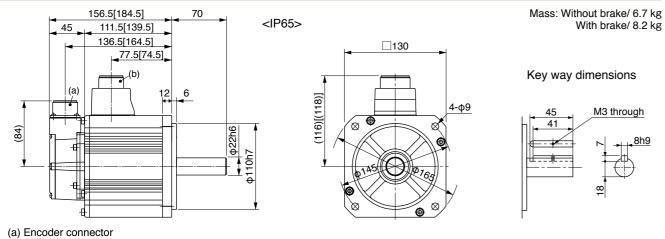
.8h9

[Unit: mm]

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



Dimensions



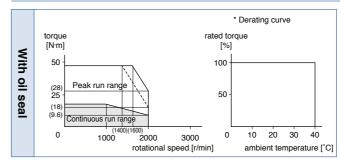
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<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.

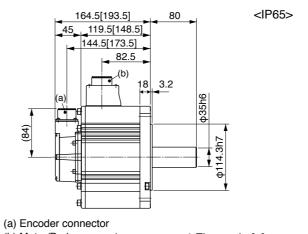


Specifications

Specifi	uai		5					
				AC4	00 V		specifications (For details	
Mataxima			IP65	MGME204GC	IGME204GC MGME204SC MGME204SC			
Motor model *1			IP67	MGME204G1	MGME204S1	HAS1 Static friction torque (N·m)		24.5 or more
Annelissable	N	/lodel	A5II, A5 series	MFD	T5440	Engagin	g time (ms)	80 or less
Applicable driver	*2 N	lo.	A5IIE, A5E series	MFD O T5440E	-	Releasir	ng time (ms) Note)4	25 or less
		Fr	ame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %
Power supp		pacity	/ (kVA)		.8	Releasir	ng voltage (DC) (V)	2 or more
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4
Rated torqu			(N·m)		19.1			
Momentary		. peal	ctorque (N·m)	47.7		• Permi	ssible load (For details, refe	er to P.183)
Rated curre	ent		(A(rms))	8.5			Radial load P-direction (N)	1666
Max. currer	nt		(A(o-p))	30		During	Thrust load A-direction (N)	784
Regenerativ			Without option	No limit Note)2		assembly	Thrust load B-direction (N)	980
frequency (tir	nes/min)) Note)1	DV0PM20049×2	No limit Note)2		During	Radial load P-direction (N)	1176
Rated rotat	ional	spee	d (r/min)	1000		During operation		
Max. rotatio	onal s	speed	(r/min)	2000		operation	Thrust load A, B-direction (N)	490
Moment of	inerti	a	Without brake	30.3			ails of Note 1 to Note 5, refer t	o P.182, P.183
of rotor (×1	0 ⁻⁴ kg	g∙m²)	With brake	35	5.6		ions of Driver, refer to P.45.	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the				
Γ	Res	olutio	n per single turn	1048576	131072	series. For more information about the part number please refer to P.16.		



Dimensions



(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.

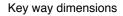
A5 Family

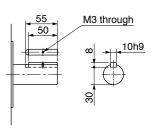
Motor Specifications

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

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

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





176 4-φ13.5 (140) øØ

Motor Specifications

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

Specifications

			AC4	00 V	
Matar		IP65	MGME304GC	MGME304SC	
Motor model *1		IP67	MGME304G1	MGME304S1	
Amplianhla	Model	A5II, A5 series	MFD🛇	TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	
unver	Fi	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 M	ax. pea	k torque (N·m)	71.7		
Rated current		(A(rms))	11.3		
Max. current		(A(o-p))	40		
Regenerative	brake	Without option	No limit Note)2		
frequency (times	/min) Note)1	DV0PM20049×2	No limit Note)2		
Rated rotation	nal spee	d (r/min)	1000		
Max. rotationa	al speed	(r/min)	2000		
Moment of ine	ertia	Without brake	48.4		
of rotor (×10-	¹ kg∙m²)	With brake	53	3.7	
Recommender ratio of the loa			10 times	s or less	
Rotary encod	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per single turn	1048576	131072	

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

(C	/
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
ľ	Looombry	Thrust load B-direction (N)	1176
1	During	Radial load P-direction (N)	1470
0	operation	Thrust load A, B-direction (N)	490

• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

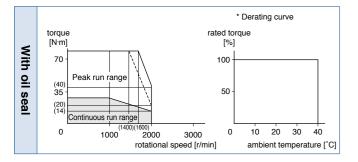
With brake/ 23.5 kg

M3 through

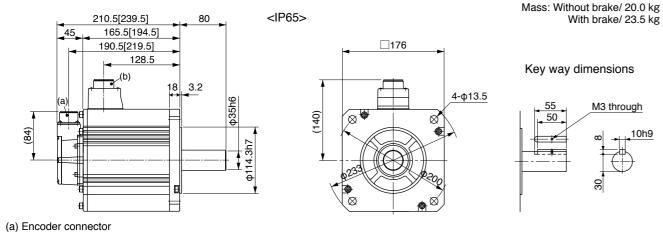
10h9

[Unit: mm]

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



Dimensions

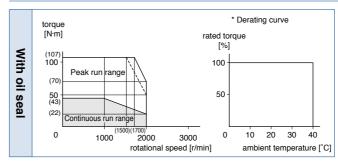


- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

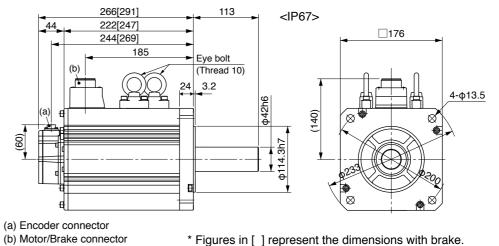
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400 V MGME 4.5 kW [Middle inertia, Middle capacity]

Creations

Specifications								
				AC4	00 V	• Brake specifications (For details, refer to P.1 /This brake will be released when it is energized.)		
Motor model			IP65	-	Do not use this for braking the motor in			
	*1		IP67	MGME454G1	MGME454S1	Static fri	ction torque (N·m)	58.8 or more
Annlinghia		Model	A5II, A5 series	MFD◇	TA464	Engagin	g time (ms)	150 or less
Applicable driver	*2	No.	A5IE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	50 or less
		Fr	rame symbol	F-fra	ame	Exciting	current (DC) (A)	1.4±10 %
Power sup	ply o	capacit	y (kVA)	7.	.5	Releasir	ng voltage (DC) (V)	2 or more
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4
Rated torq			(N·m)	43.0				
Momentar		ix. peal	,	107		• Permi	ssible load (For details, refe	er to P.183)
Rated curr			(A(rms))	14.8			Radial load P-direction (N)	2058
Max. curre	ent		(A(o-p))	55		During	Thrust load A-direction (N)	980
Regenerati			Without option	No lim	t Note)2	assembly	Thrust load B-direction (N)	1176
frequency (t	imes/m	nin) Note)1	DV0PM20049×2	No limit Note)2			Radial load P-direction (N)	1470
Rated rota	tiona	al spee	d (r/min)	1000		During		
Max. rotati	ional	speed	(r/min)	2000		operation	Thrust load A, B-direction (N)	490
Moment of	f iner	rtia	Without brake	79).1	 For detail 	ails of Note 1 to Note 5, refer t	o P.182, P.183
of rotor (×1	10-4	kg∙m²)	With brake	84	l.4		ions of Driver, refer to P.45.	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	10 times or less *2 The product		specifications: roduct that the end of driver m nation has "E" is "Position con	
Rotary encoder specifications Note)5			fications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		
Resolution per single turn				1048576	131072	series. For more information about the part number please refer to P.16.		



Dimensions



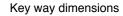
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

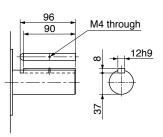
A5 Family

Motor Specifications

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

Mass: Without brake/ 29.4 kg With brake/ 33.0 kg





Motor Specifications

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

Specifications

			AC4	00 V		
Motor model		IP65		-	-	
*1		IP67		MGME604G1	MGME604S1	
	Model	A5II, A5	series	MGD�	TB4A2	
Applicable driver *2	No.	A5IIE, A5	E series	-	-	
unver	Fi	rame symt	ool	G-fr	ame	
Power supply	capacit	у	(kVA)	9	.0	
Rated output			(W)	60	00	
Rated torque			(N·m)	57	7.3	
Momentary M	lax. pea	k torque	(N·m)	143		
Rated curren	t	(/	A(rms))	19.4		
Max. current		(A(o-p))	74		
Regenerative	brake	Without option		No limit Note)2		
frequency (times	/min) Note)1	DV0PM20049×3		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	1000		
Max. rotation	al speed		(r/min)	2000		
Moment of in	ertia	Without	brake	101		
of rotor (×10 ⁻	⁴ kg·m²)	With b	rake	1()7	
	Recommended moment of inertia ratio of the load and the rotor Note)3				s or less	
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per singl	e turn	1048576	131072	

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

(C	/
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	
D	During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588	

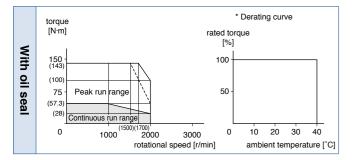
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.46.

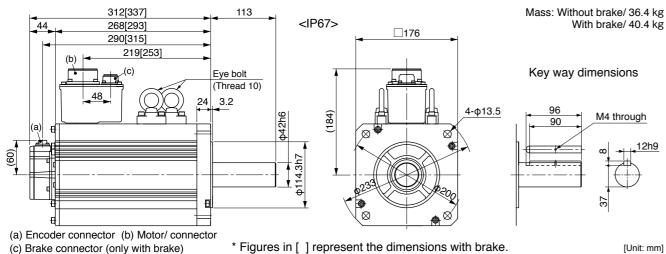
*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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

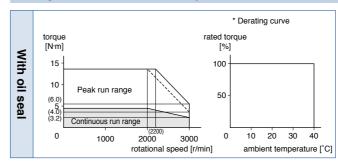


(c) Brake connector (only with brake)

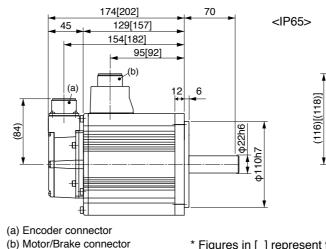
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400 V MHME 1.0 kW [High inertia, Middle capacity]

Specifications

Specifications							
		AC400 V		• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)			
Motor model		MHME104GC MHME104SC		(Do not use this for braking the motor in motion.)			
*1		IP67	MHME104G1	MHME104S1	Static fri	ction torque (N·m)	4.9 or more
Annelisse	Model	A5II, A5 series	MDD	T2412	Engagin	g time (ms)	80 or less
Applicable driver *2	No.	A5IIE, A5E series	MDD OT2412E	-	Releasir	ng time (ms) Note)4	70 or less
	F	rame symbol	D-fr	ame	Exciting	current (DC) (A)	0.59±10 %
Power suppl	y capacit	y (kVA)	1	.8	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	10	1000 Exciting voltage (DC) (V)		voltage (DC) (V)	24±2.4
Rated torque)	(N·m)	4.	4.77			
Momentary Max. peak torque (N·m)		14.3		 Permissible load (For details, refer to P.183) 			
Rated currer	ıt	(A(rms))	2.9			Radial load P-direction (N)	980
Max. current		(A(o-p))	12 83		During	Thrust load A-direction (N)	588
Regenerative		Without option			assembly	Thrust load B-direction (N)	686
frequency (time	s/min) Note)1	DV0PM20048	No limit Note)2			Radial load P-direction (N)	490
Rated rotatio	nal spee	d (r/min)	2000		During		
Max. rotation	al speed	l (r/min)	3000		operation	Thrust load A, B-direction (N)	196
Moment of ir	ertia	Without brake	24.7		For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×10	⁻⁴ kg·m²)	With brake	26	5.0	• Dimensions of Driver, refer to P.44.		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the		P.16.	
	Resolutio	on per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



Dimensions



<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.

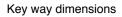
A5 Family

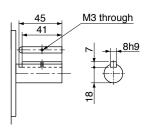
Motor Specifications

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.)

Mass: Without brake/ 6.7 kg With brake/ 8.1 kg





130 4-Φ

* Figures in [] represent the dimensions with brake.

Motor Specifications

400 V MHME 1.5 kW [High inertia, Middle capacity]

Specifications

			AC4	00 V	
Motor model		IP65	MHME154GC	MHME154SC	
		IP67	MHME154G1	MHME154S1	
Amplicable	Model	A5II, A5 series	MDD¢	T3420	
Applicable driver *2	No.	A5IIE, A5E series	MDD 	-	
unver	Fr	ame symbol	D-fra	ame	
Power supply	capacit	y (kVA)	2	.3	
Rated output		(W)	15	00	
Rated torque		(N·m)	7.	16	
Momentary M	ax. peal	k torque (N·m)	21.5		
Rated current		(A(rms))	4	.7	
Max. current		(A(o-p))	20		
Regenerative I	orake	Without option	22		
frequency (times/	min) Note)1	DV0PM20048	130		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	al speed	(r/min)	30	00	
Moment of ine	ertia	Without brake	37.1		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	38.4		
Recommender ratio of the loa			5 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per single turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

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

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

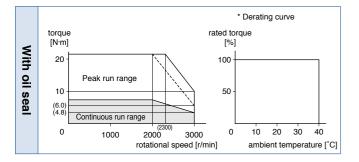
With brake/ 10.1 kg

M3 through

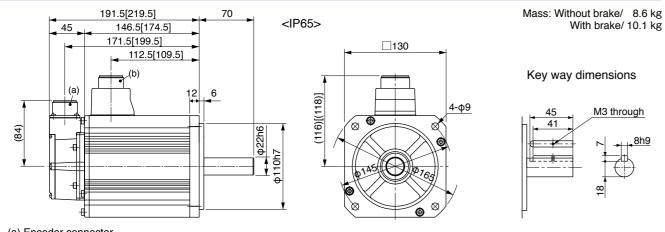
.8h9

[Unit: mm]

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



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

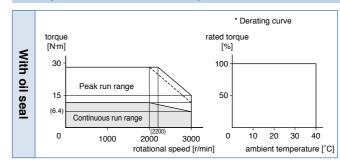
* Figures in [] represent the dimensions with brake.

<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.

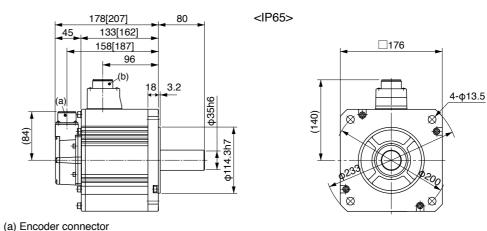


Specifications

Specif	ICa	luon	5						
		• Brake specifications (For details, refer (This brake will be released when it is energiz							
Motor mod			IP65	MHME204GC	MHME204SC		use this for braking the motor in		
*1			IP67	MHME204G1	MHME204S1	ME204S1 Static friction torque (N·m)		24.5 or more	
Annlinghis		Model	A5II, A5 series	MED	T4430	Engagin	g time (ms)	80 or less	
Applicable driver	*2	No.	A5IIE, A5E series	MED \ T4430E	-	Releasir	ng time (ms) Note)4	25 or less	
		Fr	ame symbol	E-fr	ame	Exciting	current (DC) (A)	1.3±10 %	
Power sup		capacity	, ,		.3	Releasir	ng voltage (DC) (V)	2 or more	
Rated outp			(W)			Exciting	voltage (DC) (V)	24±2.4	
Rated torq			(N·m)	9.55		L D (00)			
Momentar	, 	ix. peal	1 ()	28.6		• Permi	ssible load (For details, refe	er to P.183)	
Rated curr	ent		(A(rms))	24 45			Radial load P-direction (N)	1666	
Max. curre	nt		(A(o-p))			During	Thrust load A-direction (N)	784	
Regenerati			Without option			assembly	Thrust load B-direction (N)	980	
frequency (t	mes/m	nin) Note)1	DV0PM20048	142		During	Radial load P-direction (N)	784	
Rated rota	tiona	al spee	d (r/min)	2000 3000		During operation			
Max. rotati	onal	speed	(r/min)			· ·	Thrust load A, B-direction (N)	343	
Moment of	iner	rtia	Without brake	57	7.8	For details of Note 1 to Note 5, refer to P.182, P.18			
of rotor (×1	0-4	kg∙m²)	With brake	59	9.6	• Dimensions of Driver, refer to P.45.			
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 					
Rotary encoder specifications Note)5			fications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the			
	Resolution per single turn				131072	series. For more information about the part number, please refer to P.16.			



Dimensions



(b) Motor/Brake connector

<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.

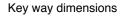
A5 Family

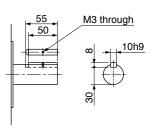
Motor Specifications

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.)

Mass: Without brake/ 12.2 kg With brake/ 15.5 kg





* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

			AC4	00 V	
Matax madal		IP65	MHME304GC	MHME304SC	
Motor model *1		IP67	MHME304G1	MHME304S1	
Amplicable	Model	A5II, A5 series	MFD🗘	T5440	
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	
unver	Fi	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 M	ax. pea	k torque (N·m)	43	3.0	
Rated current		(A(rms))	8	.0	
Max. current		(A(o-p))	34		
Regenerative I	orake	Without option	19		
frequency (times/	min) Note)1	DV0PM20049×2	142		
Rated rotation	al spee	d (r/min)	20	00	
Max. rotationa	al speed	(r/min)	30	00	
Moment of ine	ertia	Without brake	90.5		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	92.1		
Recommender ratio of the loa			5 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per single turn	1048576	131072	

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

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

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

During assembly	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, P.183.

· Dimensions of Driver, refer to P.45.

*1 Motor specifications:

- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

50

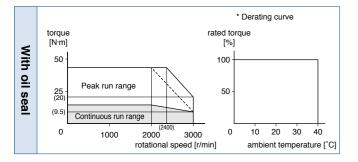
With brake/ 19.2 kg

M3 through

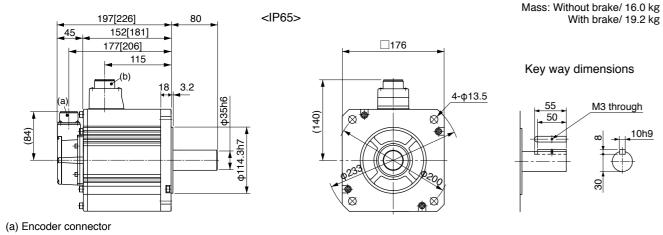
10h9

[Unit: mm]

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



Dimensions



(b) Motor/Brake connector

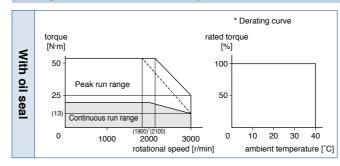
* Figures in [] represent the dimensions with brake.

<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.

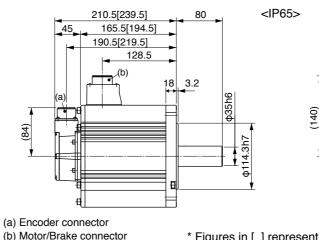


Specifications

Specifications								
		AC400 V		• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)				
Motor model		IP65	MHME404GC			(Do not use this for braking the motor in motion.)		
*1		IP67	MHME404G1	MHME404S1	Static fri	ction torque (N·m)	24.5 or more	
Annlinghia	Model	A5II, A5 series	MFD🗘	TA464	Engagin	g time (ms)	80 or less	
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	25 or less	
	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %	
Power supply	/ capacit	y (kVA)		.8	Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)) 4000		Exciting	voltage (DC) (V)	24±2.4	
Rated torque		(N·m)						
Momentary N	lax. pea	k torque (N·m)	57.3		• Permi	Permissible load (For details, refer t		
Rated curren	t	(A(rms))				Radial load P-direction (N)	1666	
Max. current		(A(o-p))			During	Thrust load A-direction (N)	784	
Regenerative		Without option	1	7	assembly	Thrust load B-direction (N)	980	
frequency (time	s/min) Note)1	DV0PM20049×2	12	25	During	()	784	
Rated rotatio	nal spee	d (r/min)	20	2000		Radial load P-direction (N)		
Max. rotation	al speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	343	
Moment of in	ertia	Without brake	112			For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×10	^₄ kg·m²)	With brake	11	14		Dimensions of Driver, refer to P.45.		
Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5		5 times or less		 *1 Motor specifications: □ *2 The product that the end of driver model designation has "E" is "Position control type". 				
		20-bit 17-bit Incremental Absolute		Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents t		P.16. presents the		
	Resolutio	n per single turn	1048576	131072	series. For more information about the part number please refer to P.16.			



Dimensions



<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.

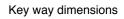
A5 Family

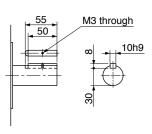
Motor Specifications

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.)

Mass: Without brake/ 18.6 kg With brake/ 21.8 kg





176 4-φ13.5 øØ

* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC400 V		
Motor model	IP65		MHME504GC	MHME504SC		
		IP67		MHME504G1	MHME504S1	
Annlinghia	Model	A5II, A5 series		MFD🛇	TA464	
Applicable driver *2	No.	A5IIE, A5E serie	s	MFD OTA464E	-	
unver	Fi	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 M	ax. pea	k torque (N·m)	71.6		
Rated current		(A(rms))	13.0		
Max. current		(A(o-p)) 55		5		
Regenerative I	orake	Without option		10		
frequency (times/	min) Note)1	te)1 DV0PM20049×2		76		
Rated rotation	nal spee	d (r/min)	2000		
Max. rotationa	al speed	(r/min)	30	00	
Moment of ine	ertia	Without brake		162		
of rotor (×10 ⁻⁴	kg∙m²)	With brake		16	64	
	Recommended moment of inertia ratio of the load and the rotor Note)3				or less	
Rotary encode	er speci	fications Note)	5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per single turn		1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

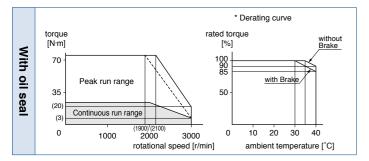
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

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

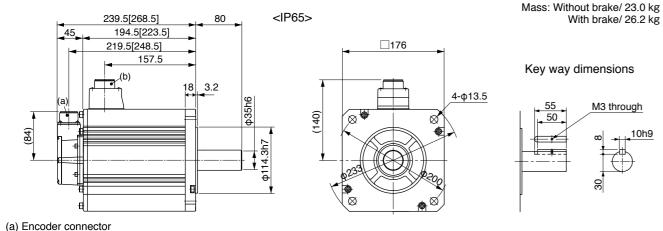
10h9

[Unit: mm]

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

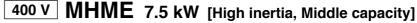


Dimensions



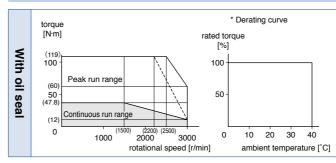
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<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.

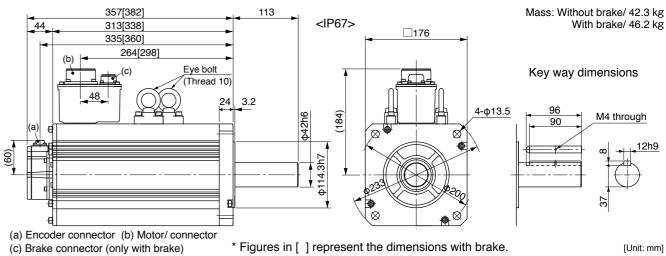


Creations

Specif	ICa	ition	S										
				AC4	00 V		e specifications (For details	-					
Motor model *1 IP65 IP67			IP65	-	-	(This brake will be released when it is energized. (Do not use this for braking the motor in motion.)							
			IP67	MHME754G1	MHME754S1	Static fr	Static friction torque (N·m)						
A		Model	A5II, A5 series	MGD�	TB4A2	Engagii	ng time (ms)	150 or less					
Applicable driver	*2	No.	A5IIE, A5E series	-	-	Releasi	ng time (ms) Note)4	50 or less					
anver		Fr	ame symbol	G-fr	ame	Exciting	current (DC) (A)	1.4±10 %					
Power sup	ply o	capacit	y (kVA)	9	.0	Releasi	ng voltage (DC) (V)	2 or more					
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4					
Rated torq			(N·m)		7.8								
Momentary Max. peak torque (N·m)					19	• Perm	issible load (For details, refe	er to P.183)					
Rated curr	ed current (A(rms))			2.0		Radial load P-direction (N)	2058						
Max. curre	current (A(o-p))		(A(o-p))	8	3	During	Thrust load A-direction (N)	980					
Regenerati			Without option	No lim	it Note)2	assembly	Thrust load B-direction (N)	1176					
frequency (t	mes/m	nin) Note)1	DV0PM20049×3	No lim	it Note)2	D .	Radial load P-direction (N)	1176					
Rated rota	tiona	al spee	d (r/min)	15	00	During							
Max. rotati	onal	speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	490					
Moment of	iner	rtia	Without brake	2	73		ails of Note 1 to Note 5, refer t	o P.182, P.183					
of rotor (×1	0-4	kg∙m²)	With brake	2	79		sions of Driver, refer to P.46.						
Recommended moment of inertia ratio of the load and the rotor Note)3				5 times	or less	 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 							
Rotary encoder specifications Note)5				20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the							
	Re	esolutio	n per single turn	1048576	131072	series. For more information about the part numbe please refer to P.16.							



Dimensions



<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.

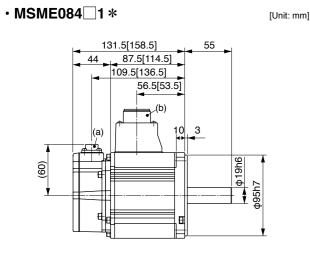
A5 Family

Motor Specifications

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

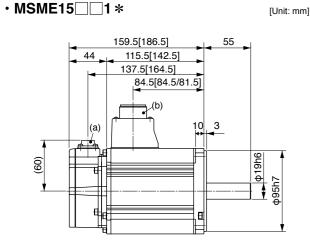
Dimensions

IP67 motor (MSME 200 V/ 400 V type)

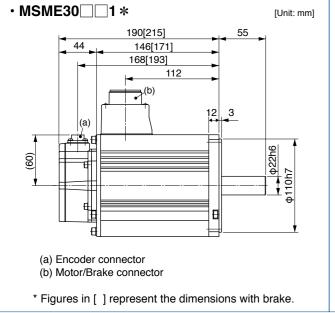


(a) Encoder connector (b) Motor/Brake connector

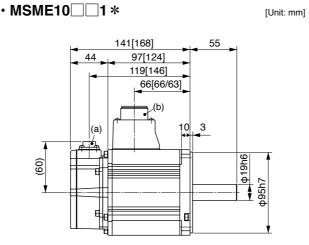
* Figures in [] represent the dimensions with brake.



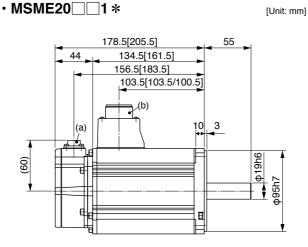
(a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.



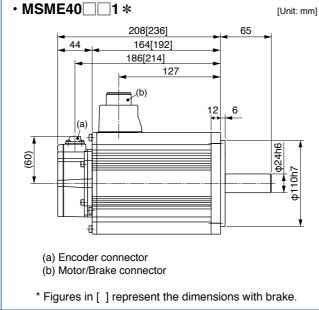
* For motor specifications, refer to IP65 motor page.



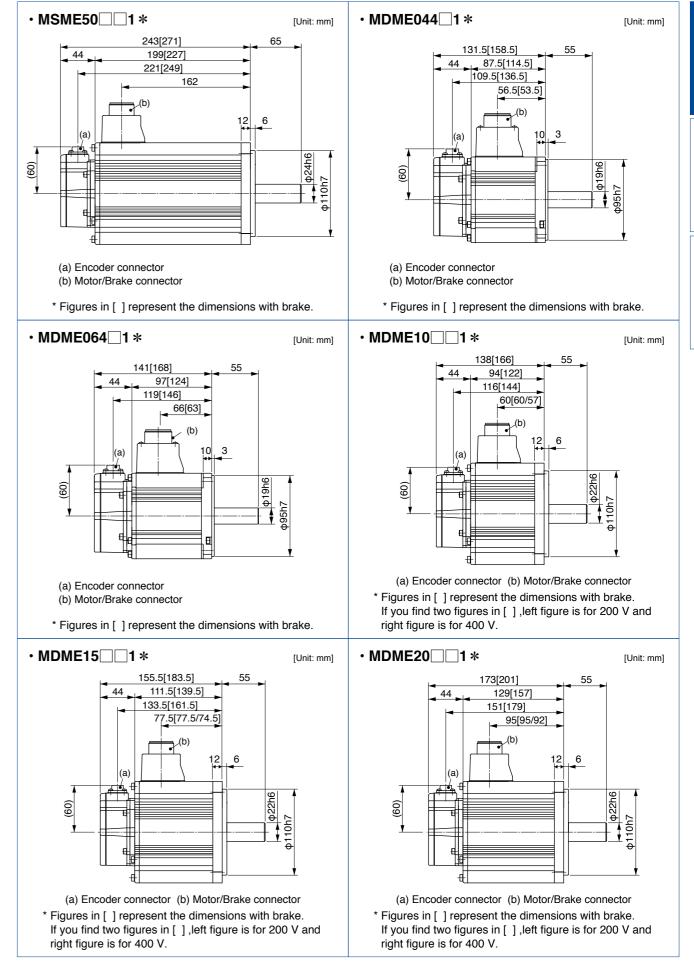
(a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.



(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.



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



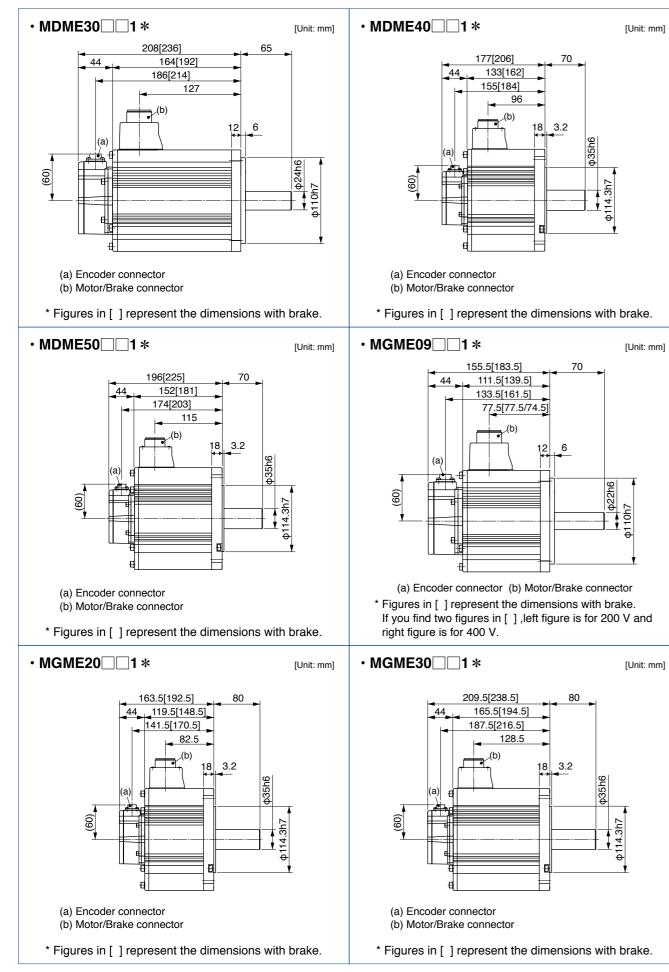
* For motor specifications, refer to IP65 motor page.

A5 Family **Dimensions**

A5 Fam

Dimensions

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



• MHME10 1 * 173[201] . 44 129[157] 151[179] 95[95/92] (b) 00 (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V. • MHME20 1 *

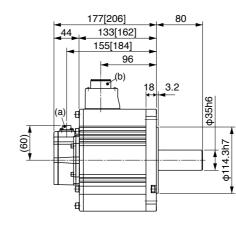


Sh6

18

70

12 6

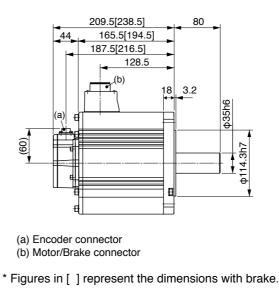


(a) Encoder connector (b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

• MHME40 1 *





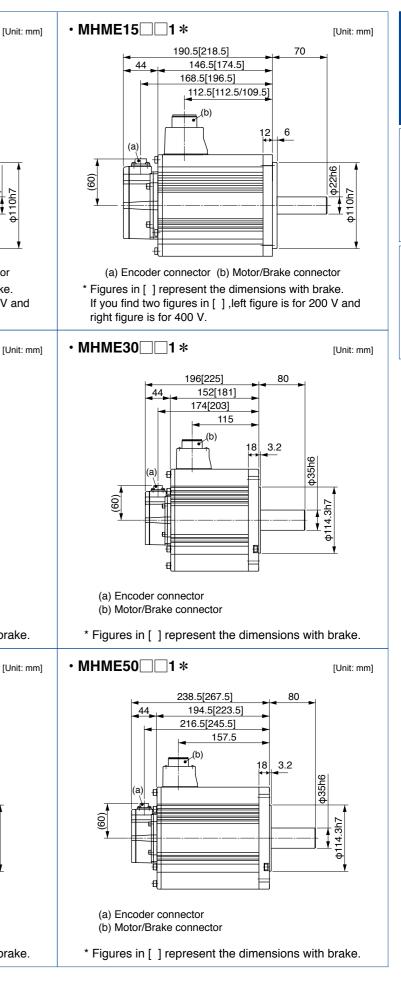
^{*} For motor specifications, refer to IP65 motor page

* For motor specifications, refer to IP65 motor page.

IP67 motor (MHME 200 V/ 400 V type)

A5 Family **Dimensions**

A5 Family

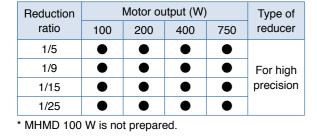


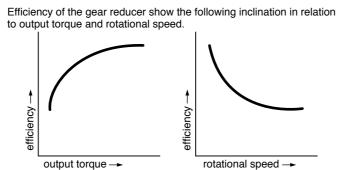
140

Motors with Gear Reducer Type and Specifications

Motor Types with Gear Reducer







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 %					
	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 mot					
	Protective structure	IP44 (at gear reducer)					
	Ambient temperature	0 °C to 40 °C (free from condensation)					
Environment	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					

Мос The

MSME O 1 G 3 1 N Vmbol Type Motor rated output Motor rated output Motor rated output Motor rated output Vmbol Low inertia 01 100 W 59ecifications 02 200 W 100 W to 750 W Motor to 750 W Motor to 750 W Motor to 750 W Motor to 750 W Specifications VIHMD High inertia Oltage specifications Motor to 750 W Motor to 750 W Motor to 750 W Voltage specifications Motor to 750 W Motor to 750 W Motor to 750 W For high precision Xindige specifications Motor to 750 W Motor to 750 W Motor to 750 W Motor to 750 W Reduction Motor to 750 W Motor to 750 W Motor to 750 W Motor to 750 W Reduction Motor to 750 W Motor to 750 W Motor to 750 W For high precision Motor structure Motor structure Motor structure Motor structure Symbol Shaft Holding brake Key way without with Motor to 70 W			esigi					ri		20	4	łh	- N	1~1		M	loto			Fa		-	ducer
M S M E O 1 I G 3 1 N Image: Model Designation Motor rated output Image: Motor rated output Image: Motor rated output Motor rated output Motor rated output Motor rated output Image: Motor rated output Image: Motor rated output Image: Motor rated output Motor rated output Image: Motor rated output		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	JIIId	lion	U			11	ver		u												
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SMD Low inertia 100 W to 750 W SME Low inertia 100 W to 750 W SME Low inertia 100 W to 750 W HMD High inertia 200 W to 750 W Voltage specifications Symbol Rated output 1 100 V 1 100 V 2 200 V Symbol Rated output 1 100 V Symbol Rated output 2 100 V 3 Shaft Holding brake Key way without	mbol		Туре			Symbol	Sp	ecifi	cations		Mo												
100 W to 750 W 02 200 W SME Low inertia 04 400 W 04 400 W 08 750 W MMD High inertia 200 W to 750 W 08 750 W Voltage specifications Symbol Rated output 1 100 V 1 100 V 2 200 V	SMD	_				01	100 W								Syn	nbol					• •	·	
SME 100 W to 750 W HMD High inertia 200 W to 750 W Voltage specifications Symbol Rated output 1 100 V 2 200 V Rotary encoder specifications Rotary encoder specifications						02								1	N		-	•	200	400	130		
HMD High inertia 200 W to 750 W Voltage specifications Symbol Rated output 1 100 V 2 200 V Rotary encoder specifications Symbol Shaft Holding brake Key way without 3 Shaft Holding brake Symbol	SME	_				• ·									2	N	1/9	,	•	•	•	•	For high
200 W to 750 W Voltage specifications Symbol Rated output 1 100 V 2 200 V	ЧМГ	Н	ligh inert	tia		08 750 W							3	N	1/1	5	•	•	٠	•			
Symbol Rated output 1 100 V 2 200 V Rotary encoder specifications 3 Image: Content of the symbol of the sy	IND	200	W to 75	50 W	,	Voltage					4N			1/2	5	•	•	•					
I 100 V 2 200 V Motor structure Symbol Shaft Holding brake Key way with 3 •							· ·								* MH	IMD	100 W	is no	t pre	pared			
2 200 V Rotary encoder specifications Symbol 3 Image: Symbol									•							Moto	or etri	icture					
Rotary encoder specifications 3											Ī	more						e					
Rotary encoder specifications													Symbol -			_		-	_				
											3	_	•		•								
					Pu						e	-			4		•			•			
G Incremental 20-bit 1048576 5 C Absolute 17 bit 121070 7		-					+			-	-												
S Absolute 17-bit 131072 7 * S: can be used in incremental.		-			<u> </u>				1310/2		1												

A5 Family

ode	el De	esia	natio	on/									A 5	5 Fa	mil	у	
		•		of the	Dr	iver a	and	l th	e N	loi	tor M	lotors	wi	th G	ear	Re	ducer
* For combination of elements of model number, refer to Index.																	
loud		ignat															
	Μ	S	Μ	Ε	0	1	1	G	ì	3	1	Ν					
				Motor ra	nted o	output											
Symb	ol	Туре				ifications					Motor ty	pes with	Ŭ				
MSMI		_ow inert	ia	01	100 W						Symbol	Reduction	<u> </u>	lotor ou	• •	·	Type of reducer
	100) W to 75	50 W	02	20	00 W						ratio	100	200	400	750	reducer
MSM		Low inert		04	400 W						1N	1/5	•	•	•	•	
				08	750 W						2N	1/9	•		•	•	For high precision
MHM		High iner W to 75									3N 4N	1/15		•			precision
				Voltage	speci	ifications						HMD 100 W is not prepared.					
				Symbol	Rate	ed output						100 10 15 1	not pr	epareu			
				1	1	00 V					— Moto	or structu	ire				
				2	2	00 V						Sha	aft	Holding	g brak	е	
											Sym	bol Key v	vay v	vithout	with	ı	
	Rotary er		•		ons						3			•			
	Symbol			Pulse count	Pulse counts Resolution		N	/ire			4		,	-	•	_	
	G	Incremental		20-bit	20-bit 1048576			5							•]	
S Absolute 17-bit 131072								7									
*	S: can b	e used ir	n increm	ental.													

The Combination of the Driver and the Motor with gear reducer

	100	v	200 V					
Motor output	Part No. of motor	Single phase, 100 V	Part No. of motor	Single/3-phase, 200 V				
· ·	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver				
100 W	MSME011	MADHT1107 MADKT1107	MSME012	MADHT1505 MADKT1505				
100 W	MSMD011	MADHT1107E MADKT1107E	MSMD012	MADHT1505E MADKT1505E				
200 W	MSME021	MBDHT2110 MBDKT2110	MSME022	MADHT1507 MADKT1507				
200 W		MBDHT2110E MBDKT2110E		MADHT1507E MADKT1507E				
400 W		MCDHT3120 MCDKT3120	MSME042	MBDHT2510 MBDKT2510				
400 W	MSMD041N MHMD041N	MCDHT3120E MCDKT3120E		MBDHT2510E MBDKT2510E				
750 W			MSME082 N MSMD082 N	MCDHT3520 MCDKT3520				
750 W				MCDHT3520E MCDKT3520E				

* Motor specifications enter to of the motor model number. Refer to "Model designation".

Motors with Gear Reducer

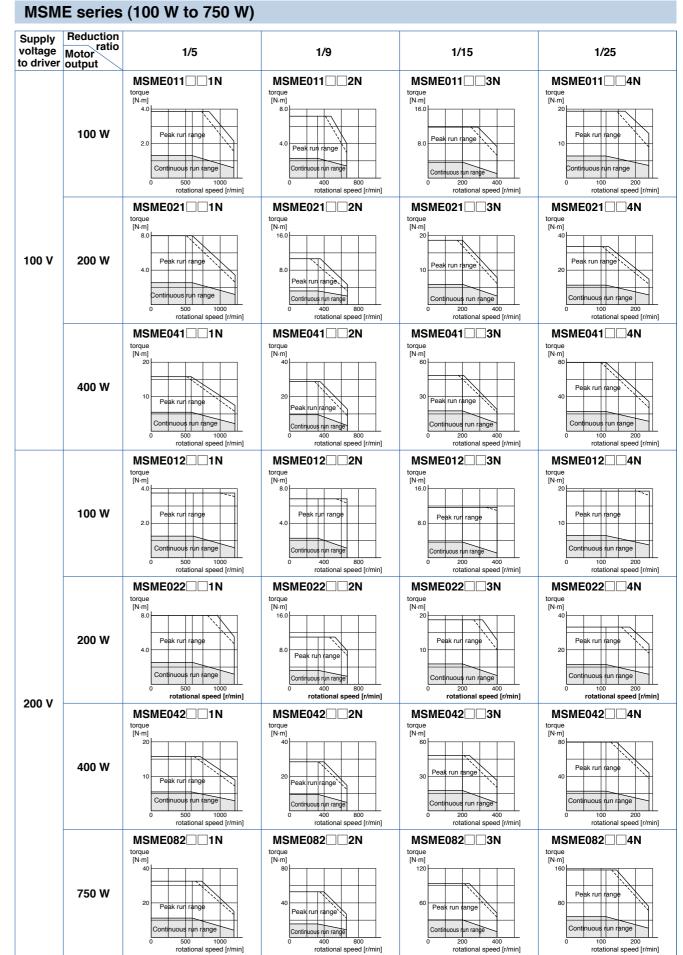
Table of Motor Specifications

Table of Motor Specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque	(motor + conv to moto	or shaft)		ISS	Permissible radial load	Permissible thrust load
		(W)		(W)	(r/min)	(r/min)	(N∙m)	(N.m)	w/o brake J(x10 ^{-,}		w/o brake (k		(N)	(N)
	MSME01 1N	(W)	1/5	(W) 75	600	1200	1.18	3.72	0.091	0.094	1.0	s) 1.2	490	245
		-	1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
		100	1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
			1/25	80	120	240	6.27	19.0	0.0885	0.0915	2.15	2.35	1670	833
			1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
2			1/9	132	333	666	3.72	11.3	0.408	0.428	2.48	2.9	1180	588
MSME		200	1/15	132	200	400	6.27	18.8	0.44	0.46	2.88	3.3	1470	735
		-	1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
No No			1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia			1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
rtia		400	1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
		-	1/25	332	120	240	26.4	79.2	0.56	0.58	4.4	4.8	2060	1030
	MSME082		1/5	672	600	1200	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSME082		1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 SN	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 0 1N		1/5	75	600	1000	1.18	3.72	0.091	0.094	1.02	1.23	490	245
	MSMD01 2N	-	1/9	80	333	555	2.25	6.86	0.0853	0.0883	1.02	1.23	588	294
	MSMD01 0 3N	100	1/15	80	200	333	3.72	11.4	0.086	0.089	1.17	1.38	784	392
	MSMD01 0 4N		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
	MSMD02 0 1N		1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
Ξ	MSMD02 2N		1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02 3N	200	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
	MSMD02		1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low inert	MSMD04		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
ine	MSMD04 2N		1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
tia	MSMD04 🗌 🗌 3N	400	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04	1	1/25	332	120	200	26.4	79.2	0.56	0.58	4.4	4.9	2060	1030
	MSMD082		1/5	672	600	900	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSMD082	750	1/9	635	333	500	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSMD082 🗌 3N	750	1/15	635	200	300	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSMD082 🗌 4N		1/25	635	120	180	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02		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	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
ş	MHMD02		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04 🗌 🗌 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
	MHMD04 🗌 🗌 2N	400	1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
gh i	MHMD04 🗌 🗌 3N	400	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
High inertia	MHMD04 🗌 🗌 4N		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
tia	MHMD082 🗌 🗌 1N		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
	MHMD082 🗌 🗌 2N	750	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
	MHMD082 🗌 🗌 3N	130	1/15	635	200	300	30.4	91.2	2.21	2.31	6.3	7.1	1760	882
	MHMD082 🗌 🗌 4N		1/25	635	120	180	50.7	152	2.16	2.26	6.3	7.1	2650	1320

* Motor specifications enter to ____ of the motor model number. Refer to "Model designation".

Torque Characteristics of Motor



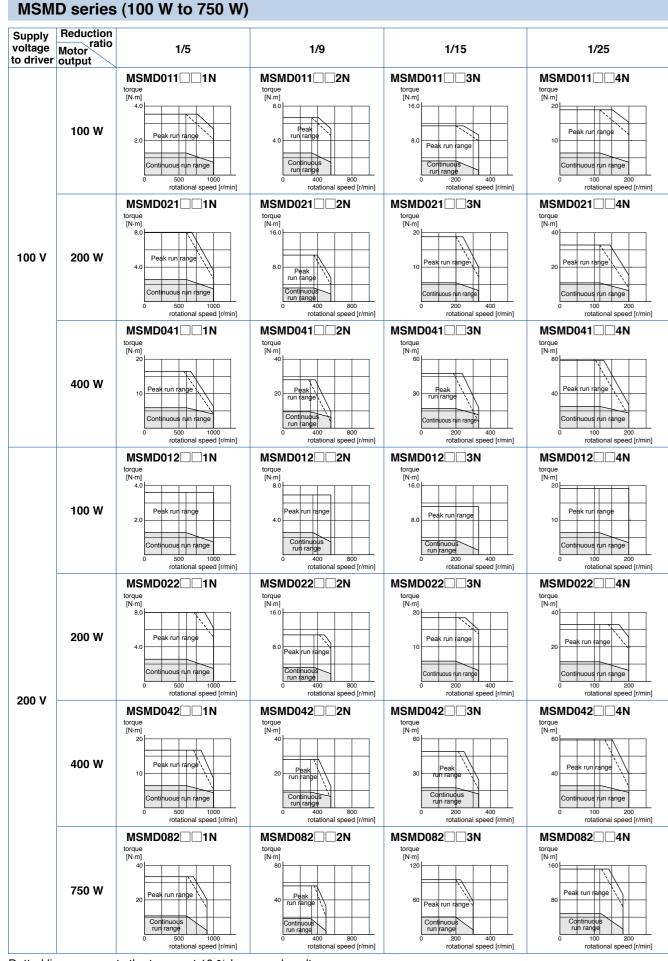
Dotted line represents the torque at 10 % less supply voltage.

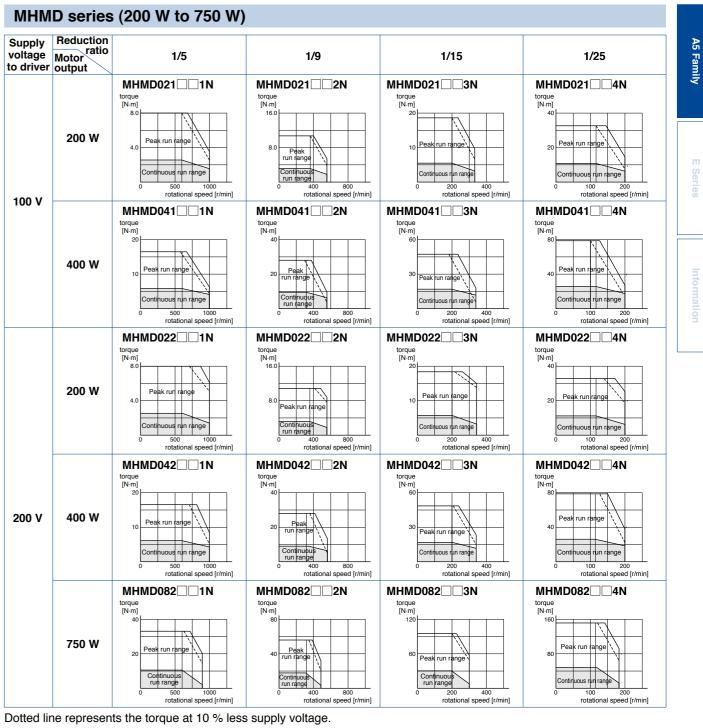
A5 Family Motors with Gear Reducer

A5 Family

Motors with Gear Reducer

Torque Characteristics of Motor

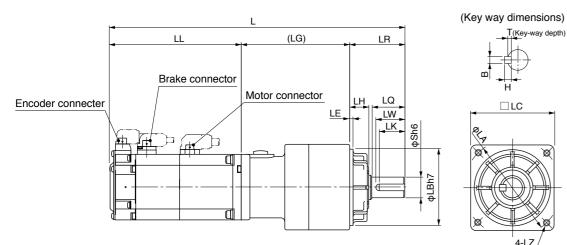




Dotted line represents the torque at 10 % less supply voltage.

Dimensions of Motor Motors with Gear Reducer

MSME series

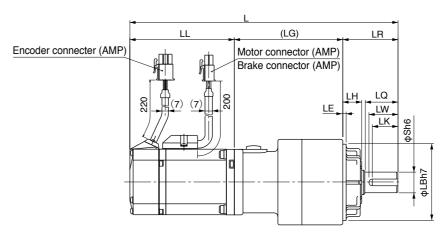


* The figure represents the dimensions with brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т
MSME01		1/5	191.5	92													
		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
	100		221.5	122	02	20	02	00	00		10	12	10			ix ix io	2.0
MSME01		1/15	202	92										78			
	-		232	122								140					
MSME01		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5
			264	122								20					
MSME02		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5
	-		220.5	116								12					
MSME02		1/9	219	79.5										89.5	3		
	200		255.5	116													
MSME02		1/15	229.5	79.5													
	-		266 229.5	116 79.5										100			
MSME02		1/25	229.5	79.5 116								M6					
			238.5	99	50	30	78	70	90	19	17	Depth 20	26			6×6×22	3.5
MSME04		1/5	275	135.5								20					
			238.5	99										89.5			
MSME04 2N		1/9	275	135.5													
	400		249	99													
MSME04		1/15	285.5	135.5										100			
			264	99								M8			_		
MSME04		1/25	300.5	135.5	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4
			255.7	112.2								M6			•		
MSME082		1/5	291.7	148.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5
		1/0	270.7	112.2										07.5			
MSME082 2N	750	1/9	306.7	148.2										97.5			
MSME082	130	1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4
		1/13	319.2	148.2	01	40	90	90	113	24	10	20	35	110	5	027230	4
MSME082		1/25	283.2	112.2										110			
		1/20	319.2	148.2													

[Unit: mm]

MSMD series



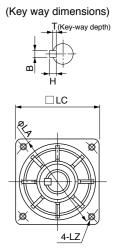
* The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т
MSMD01		1/5	191.5	92													
		1/5	221.5	122										67.5			
MSMD01		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.0		4×4×16	2.5
	100		221.5	122								12					
MSMD01		1/15	202	92										78			
			232	122								M6					
MSMD01		1/25	234	92	50	30	78	70	90	19	17	Depth	26	92		6×6×22	3.5
			264	122								20 M5					
MSMD02		1/5	184	79.5	32	20	52	50	60	12	10	Depth	18	72.5		4×4×16	2.5
			220.5	116								12					
MSMD02		1/9	219 255.5	79.5 116										89.5	3		
	200		235.5	79.5													
MSMD02		1/15	266	116													
			229.5	79.5										100			
MSMD02		1/25	266	116								M6					
			238.5	99	50	30	78	70	90	19	17	Depth 20	26			6×6×22	3.5
MSMD04		1/5	275	135.5													
			238.5	99										89.5			
MSMD04	400	1/9	275	135.5													
MSMD04	400	1/15	249	99										100			
		1/15	285.5	135.5										100			
MSMD04		1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8x7x30	4
		1/25	300.5	135.5	01	40	30	30	115	24	10	20	00	104	3	0.7.00	-
MSMD082		1/5	255.7	112.2	50	30	78	70	90	19	17	M6 Depth	26	93.5	3	6×6×22	3.5
		1/5	292.7	149.2	50	00	70	70	30	15	17	20	20	30.5	Ŭ	0.0.22	0.0
MSMD082 2N		1/9	270.7	112.2										97.5			
	750		307.7	149.2										01.0			
MSMD082		1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4
			320.2	149.2								20		110			
MSMD082		1/25	283.2	112.2													
			320.2	149.2													

Upper column: without brake Lower column: with brake

Upper column: without brake Lower column: with brake

[Unit: mm]



Information

A5 Family

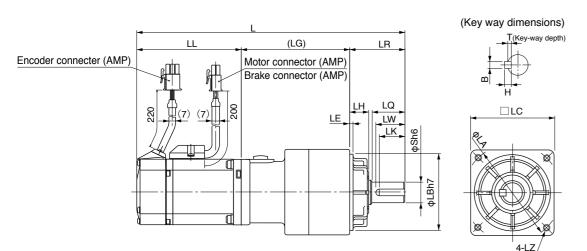
m

Series

148

Motors with Gear Reducer Dimensions of Motor

MHMD series



* The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т
			203.5	99								M5					
MHMD02		1/5	240	135.5	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5
		1/0	238.5	99										89.5	1		
MHMD02	200	1/9	275	135.5										89.5			
	200	1/15	249	99]		
MHMD02		1/15	285.5	135.5										100			
MHMD02		1/25	249	99										100	3		
		1/25	285.5	135.5	50	30	78	70	90	19	17	M6 Depth	26		Ŭ	6×6×22	3.5
MHMD04		1/5	258	118.5	50	30	/0	70	90	19	17	20	20			0x0x22	3.5
		1/5	294.5	155										89.5			
MHMD04		1/9	258	118.5										09.5			
	400	1/3	294.5	155													
MHMD04	400	1/15	268.5	118.5										100			
		1/13	305	155										100			
		4/05	283.5	118.5		40	00	00	44.5		40	M8	05	404	-	0 7 00	
MHMD04		1/25	320	155	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4
			270.7	127.2								M6					
MHMD082		1/5	307.7	164.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5
			285.7	127.2													
MHMD082 2N	750	1/9	322.7	164.2										97.5			
	750		298.2	127.2								M8					
MHMD082 3N		1/15	335.2	164.2	61	40	98	90	115	24	18	Depth 20	35		5	8×7×30	4
			298.2	127.2										110			
MHMD082 4N		1/25	335.2	164.2													

Upper column: without brake Lower column: with brake

[Unit: mm]

MEMO

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Special Order Product Features/ Lineup

Features

- Line-up IP65 motor: 200 W to 5.0 kW
- Max speed: 5000 r/min (MSMJ, MHMJ)
- · Low inertia (MSME) to High inertia (MHME).
- · 20-bit incremental encoder (1048576 pulse)
- 17-bit absolute encoder (131072 pulse).

[Please note]

Motors displayed at P.151 to P.181 are Special Order Product. Please contact us for more information.

Motor Lineup Special Order Product Motor Contents MSMJ (200 V) 200 W to 750 W ... Small capacity MSME (200 V) 1.0 kW to 5.0 kW P.158 MSMJ MHMJ Low inertia High inertia MDME (200 V) Max. speed : 5000 r/min Max. speed : 5000 r/min 1.0 kW to 5.0 kW P.164 : 4500 r/min (750 W) : 4500 r/min (750 W) Rated speed : 3000 r/min Rated speed : 3000 r/min Rated output: 200 W to 750 W Rated output: 200 W to 750 W MGME (200 V) Enclosure : IP65 Enclosure : IP65 0.9 kW to 3.0 kW P.170 MHMJ (200 V) 200 W to 750 W MHME (200 V) 1.0 kW to 5.0 kW P.176 MDMF MSMF Middle inertia Low inertia Max. speed : 5000 r/min Max. speed : 3000 r/min : 4500 r/min Rated speed : 2000 r/min (from 4.0 kW) Rated output: IP65 1.0 kW to 5.0 kW Rated speed : 3000 r/min Enclosure : IP65 Middle capacity Rated output: 1.0 kW to 5.0 kW Enclosure : IP65 MGMF МНМЕ (Low speed/ High torque type) High inertia High inertia Max. speed : 3000 r/min Max. speed : 2000 r/min Rated speed: 1000 r/min Rated speed : 2000 r/min Rated output: IP65 0.9 kW to 3.0 kW Rated output: IP65 1.0 kW to 5.0 kW Enclosure : IP65 Enclosure : IP65

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

. P.155 .. P.173

Model Designation

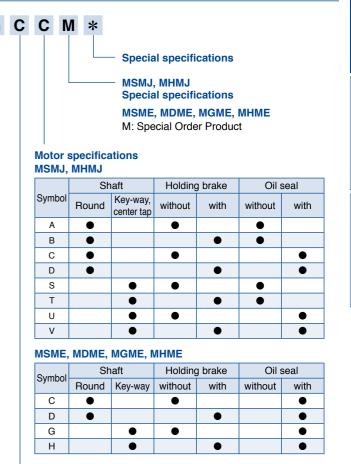
Servo Motor

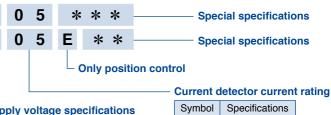
		М	S	ME	5	0	2	G	С	CI	M *					
												 Specia 	al specif	ication	S	
Symbol		Туре											, MHMJ			
MSMJ	Low inertia			ו Wו									al specifi			
MSME	Low inertia														E, MHME	
MDME	Middle ine											M: Spe	ecial Orde	er Prod	uct	
MGME	High inerti			,	-					Motor	anaaifia	ationa				
MHMJ	High inerti										specifica , MHMJ	auons				
MHME	High inerti											naft	Holdin	g brake	Oils	seal
Motor rat	ted output									Symbo		Key-way, center tap	without	with	without	wi
Symbol	Rated out	out		Volt	age sp	ocific	ation			Α	•		•		•	
02	200 W				00 V	conne	Junior			В	•				•	
04	400 W									С	•		•			(
08	750 W									D						
09	0.9 kW									S		•	•		•	
10	1.0 kW									Т		•				
15	1.5 kW									U		•	•			
20	2.0 kW									V						
30	3.0 kW									MSME	MDME.	MGME, I	ИНМЕ			
40	4.0 kW											naft		g brake	Oil	seal
50	5.0 kW									Symbo	Round	Key-way	without	with	without	wi
										С		itey-way		WILII	without	VVI
Rotary er	ncoder spe	cificati	ons –							D			•	•		
Symbol	Format	Pul	se cour	nts Res	solution	Wi	ires			G	-	•	•			
G	Increment	al	20-bit	10	48576		5			H		•				
S	Absolute		17-bit	1	31072		7					•		•		
* S: can b <cautio< p=""></cautio<>	be used in ir	ncremer	ntal.							gn orden nbol	er	Spe	cification	S		
Please a	avoid the m	otor, or	equip	ment c	ontainii	ng			(C	P65 motor	(MSME, N	IDME, MG	ME, MH	ME)	
regions t	or to be dist through Ja		l to Jap	pan, or	other					1	P65 motor	(MSMJ, M	HMJ)			
Servo D																
Full-clos	Position, To sed type	Jique,	M	A D) K	Т	1	5	0	5	* *	*		Speci	al specifica	ation
Position	n control ty	ре	Μ	A D	K	Т	1	5	0	5	E *	*		Speci	al specifica	ation
Fromo	oumbol *											osition o	control			
	symbol * -												•			
Symbo															tector curr	_
MAD								Sup	oply v	oltage	specifica	tions			Specification	าร
MBD MCD	Fram							Sy	mbol	Sp	pecification	ns)7	7.5 A	
	、								3	2 pho	se, 200 V		-	10	10 A	
									5	s-pria	se, 200 v					
MDD) Fram	e D							5	· ·	se, 200 v e/3-phase,	200 V		20	20 A	
MDD MED) Fram) Fram	e D le E								· ·		200 V		20 30	30 A	
MDD) Fram) Fram	e D le E						Pov	5	Single	e/3-phase,	200 V	;			
MDD MED) Fram) Fram) Fram	e D le E							5	Single	e/3-phase,			30	30 A 40 A 64 A	
MDD MED) Fram) Fram	e D le E le F						Sy	5 ver de	Single evice M Curre	a/3-phase,			30 40	30 A 40 A	
MDD MED	D Fram D Fram D Fram Series	e D le E le F Velocity		on, Pos	sition con	ntrol		Sy	5 ver de mbol	Single evice M Curren	e/3-phase, ax. current nt rating			30 40 64	30 A 40 A 64 A	
MDD MED) Fram) Fram) Fram	e D le E le F Velocity Tor	, Positio que, osed typ	POS	sition con type	itrol		Sy	5 ver de mbol T1	Single evice M Curren	e/3-phase, ax. current nt rating 10 A			30 40 54 90	30 A 40 A 64 A 90 A	
MDD MED	D Fram D Fram D Fram Series	e D le E le F Velocity Tor Full-Clo	rque,	e Pos				Sy	5 ver de mbol T1 T2	Single evice M Curren	e/3-phase, ax. current rating 10 A 15 A			30 40 54 90	30 A 40 A 64 A 90 A	
MDD MED	D Fram D Fram D Fram Series Symbol	e D le E le F Velocity Tor Full-Clo	rque, osed typ	e Pos	type			Sy	5 wer de mbol T1 T2 T3	Single evice M Curren	a/3-phase, ax. current nt rating 10 A 15 A 30 A			30 40 54 90	30 A 40 A 64 A 90 A	
MDD MED	D Fram D Fram D Fram Series Symbol	e D le E le F Velocity Tor Full-Clo	rque, osed typ	e Pos	type			Sy	5 wer de mbol T1 T2 T3 T5	Single evice M Curren	ax. current ax. current nt rating 10 A 15 A 30 A 50 A			30 40 54 90	30 A 40 A 64 A 90 A	

A5 Family **Special Order Product**

A5 Family

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





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

			Motor				Driver		Power			Opti	tional par	6				Options			
						A5I series	A5IIE series		capacity	Encode	er Cable	Mot	otor Cable	Brake	_				Title	Part No.	Page
Motor serie	Pow		Output	Part No.	Rating/ Spec.	Part No. /Speed, Position,	Part No. (Position control)	Frame	(at rated)	20-bit	17-bit	without	ut wit	Cable	External Regenerative	Reactor	Noise Filter	Interface Cable		DV0P4360 DV0P4120	_ !
wotor serie	supp	oly	(W)	Note) 1	(page)	Torque, Full-Closed type	(type)	Traine	load /	Incremental		without		e l	Resistor	Single phase 3-phase	Single phase 3-phase			DV0P4120 DV0P4121	_ /
						1	Note) 2		(kVA)	Note) 3	Note) 2,3,7	Note) 3	3 Note	Note) 3		(o phase /	(o phase)	Interface Conve	rsion Cable	DV0P4130	197
MSM			200	MSMJ022 🗌 1 ∗	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5							DV0P227	DV0P4170			DV0P4131	
(Leadwi	e)	-								MFECA	MFECA		MFMCA	MFMCE	111/102/283	DV0P220	DV0PM20042		1	DV0P4132	
\ type 3000 r/r	/ in Sing	ale -	400	MSMJ042 🗌 1 ∗	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	0**0EAE	0*	**0EED	0**0GE1		DV0P228		Connector Kit	A-frame Single row type	DV0PM20032	
3000 1/1	" phas	se/	750	MSMJ082 🗌 1 ∗	157	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042	for Power Supply Input	D-frame Double row	DV0PM20033	200
_			1000	MSME102 🗌 C * M	158	MDDKT5540	MDDKT5540E		Approx. 1.8							DV0P228		Connection	E-frame	DV0PM20044	
Low			1000		100			D-frame		_				~	DV0P4284	DV0P222	DV0P4220	Connector Kit	A-frame to D-frame	DV0PM20034	
inertia			1500	MSME152 🗌 C * M	159	MDDKT5540	MDDKT5540E		Approx. 2.3			MFMCE 0**2ECI				DV0PM20047		for Motor Connection	E-frame	DV0PM20046	
MSME										_					DV0P4285	DV0P222		Connector Kit			201
3000 r/n	in		2000	MSME202 C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	_					Note) 5	DV0P223	DV0PM20043	for Regenerative Resistor	E-frame	DV0PM20045	
	3-pha	ase	3000	MSME302 🗌 C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5							DV0P224				DV0P4290	202
	200	V	4000	MSME402 🗌 C * M	162	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA			DV0P4285 ×2 in parallel	DV0P225	DV0P3410			DV0P4310	204
		F	5000	MSME502 C * M	163	MFDKTB3A2	MFDKTB3A2E	-	Approx. 7.5	_		0**3EC		61	x2 in paraller		-	Connector Kit fo Motor/Encoder		DV0P4320	
					100		INI DICIDO/ LEE		7.ppiox. 7.0	_						Note) 6 DV0P228		Moton Encoder	Johneedon	DV0P4330 DV0P4340	205
	Sing phas		1000	MDME102 🗌 C * M	164	MDDKT3530	MDDKT3530E		Approx. 1.8							DV0P222				DV0P4380	202
	3-pha	ase	1500		105			D-frame		MFECA	MFECA	MFMC			DV0P4284	DV0PM20047	DV0P4220		RS485, RS232	DV0PM20024	
Middle MDM	200	V	1500	MDME152 🗌 C * M	165	MDDKT5540	MDDKT5540E		Approx. 2.3	0**0ESD	0**0ESE	0**2ECI	D 0**2F	CD		DV0P222			Safety	DV0PM20025	198
			2000	MDME202 C * M	166	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3						DV0P4285 Note) 5	DV0P223	DV0PM20043	Connector Kit	Interface External Scale	DV0P4350 DV0PM20026	
inertia 2000 r/n	in	-	3000	MDME302 C * M	167	MFDKTA390	MFDKTA390E		Approx. 4.5	-						DV0P224			Encoder	DV0PM20010	
<u>a</u> :	3-pha 200	ase -		MDME402 C * M		MFDKTB3A2	MFDKTB3A2E	F .		_		MFMCA		CA	DV0P4285	DV0P225	DV0P3410		Analog Monitor Signal	DV0PM20031	
	200	-			168			r-trame		_		0**3EC	CT 0**3F	ст –	×2 in parallel	DV0F225	DV0F3410	Battery For Abs		DV0P2990	207
			5000	MDME502 🗌 C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5	_						Note) 6		Battery Box No	,	DV0P4430 DV0PM20027	
MGM	Sing phas							_				MFMC		СА		DV0P228		Mounting	B-frame	DV0PM20028	;
/Low spe	d/\ 3-pha	ase	900	MGME092 🗌 C * M	170	MDDKT5540	MDDKT5540E	D-frame	Approx. 1.8			0**2ECI			DV0P4284	DV0P221	DV0P4220	Bracket	C-frame	DV0PM20029	208
High tore	ue 200		2000	MGME202 🗌 C * M	171	MFDKTA390	MFDKTA390E		A	_						DV0P223			D-frame	DV0PM20030	
1000 r/n	3-pha in 200							F-frame		_		MFMCA 0**3EC			DV0P4285 ×2 in parallel		DV0P3410		without Battery Box	MFECA0**0EAD MFECA0**0EAM	188
	200	•	3000	MGME302 C * M	172	MFDKTB3A2	MFDKTB3A2E		Approx. 4.5			0 020				DV0P224		Encoder Cable	without battery box	MFECA0 0EAN	
мнм			200	MHMJ022 🗌 1 ∗	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5							DV0P227	DV0P4170		with Battery Box	MFECA0**0EAE	
(Leadwi	e)	+	400		174			D .		MFECA	MFECA		MFMCA	MFMCE	111/112/28/3	DV0P220	DV0PM20042		Note) 7	MFECA0**0ESE	
표 \ type 즉 3000 r/r	/ in Sing	gle	400	MHMJ042 🗌 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	0**0EAE Note) 4	0*	**0EED	0**0GE1		DV0P228				MFMCA0**0EED	
	phas 3-pha	se/	750	MHMJ082 🗌 1 *	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		1010) 4					DV0P220	DV0PM20042		without Brake	MFMCD0**2ECD MFMCE0**2ECD	- 192
	200	V	1000	MHME102 🗌 C * M	176	MDDKT3530	MDDKT3530E		Approx. 1.8							DV0P228		Motor Cable		MFMCA0**3ECT	
-			1000				IND DICTOCOCCL	D-frame		_		MFMCE			DV0P4284	DV0P222	DV0P4220		with Brake	MFMCA0**2FCD	;D 194
			1500	MHME152 🗌 C * M	177	MDDKT5540	MDDKT5540E		Approx. 2.3			0**2ECI	CD 0**2F	UD		DV0PM20047		Dueles Oable		MFMCA0**3FCT	
МНМЕ		\rightarrow						_	_	MFECA	MFECA	MFMCE	E MFM	CE	DV0P4285	DV0P222	DVODUCE	Brake Cable	A-frame	MFMCB0**0GET	1 196
2000 r/n			2000	MHME202 C * M	178	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	0**0ESD		0**2ECI			Note) 5	DV0P223	DV0PM20043		B-frame	DV0P4283	
	3-pha	200	3000	MHME302 🗌 C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5							DV0P224		External Regenerative	C-frame		210
	200		4000	MHME402 🗆 C * M	180	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA			DV0P4285 ×2 in parallel	DV0P225	DV0P3410	Resistor	D-frame	DV0P4284	
		ŀ	5000	MHME502 C * M	181	MEDKTB3A2	MFDKTB3A2E		Approx. 7.5	-		0**3EC			x2 in paraller		-		E-frame F-frame	DV0P4285	
									r appioxi i i io				- 51			Note) 6	· ··· · · · · · ·		DV0P220, DV0P221,	DV0P222,	
,	•			ions: Motor specif vers (dedicated for p		•	,	bit ob	neoluto en	ocification		Note) 7			battery is not s ble (with battery	•••	her with 17-bit	Reactor	DV0P223, DV0P224, DV0P227, DV0P228,	DV0P225,	209
,				ype can be used in c					solute sp	ecincation,	3				y part number "	,	parately		DV0P4170, DV0PM2		250
-				05: 5 m, 10: 10 m, 20			m: MFECA0030	EAM)						,			· · ···· / ·	Noise Filter	DV0P4220, DV0PM2	0043	
		e a 17	7-bit ab	solute encoder as an	increm	nental encoder,	please use the e	encode	er cable M	FECA0**0E	EAD.								DV0P3410		251
lote) 4 Whe				and soft in Present															Single phase	DV0P4190	
lote) 4 Whe lote) 5 Othe	r combina	ations		and refer to P.210 for ed by the user.	details	S.												Surge Absorber	Single phase 3-phase	DV0P4190 DV0P1450	253

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

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

Information

E Series

A5 Family

Special Order Product

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

Motor Specifications

Specifications

				AC2	00 V		
Motor model		IP65		MSMJ022G1	MSMJ022S1		
*1		IP67		-	-		
Annlinghle	Model	A5I series	5	MADK	T1507		
Applicable driver *2	No.	A5IIE ser	ies	MADKT1507E	_		
diver	Fr	ame sym	bol	A-fra	ame		
Power supply	capacity	у	(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 b	rake	Without	option	No limi	t Note)2		
frequency (times/n	nin) Note)1	DV0P	4283	No limi	t Note)2		
Rated rotation	al spee	d	(r/min)	30	00		
Max. rotationa	l speed		(r/min)	50	00		
Moment of ine	rtia	Without	brake	0.	14		
of rotor ($\times 10^{-4}$	kg∙m²)	With b	orake	0.	16		
Recommended ratio of the load			tia Note)3	30 times or less			
Rotary encode	er specit	fications	Note)5	20-bit 17-bit Incremental Absolute			
Re	esolutio	n per sing	le turn	1048576 131072			

Please contact us for more information.

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

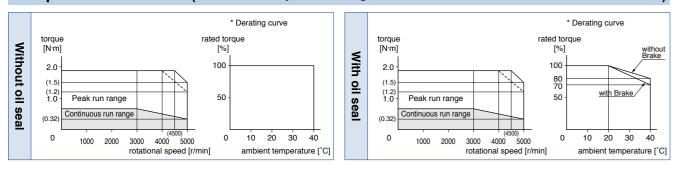
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.42.

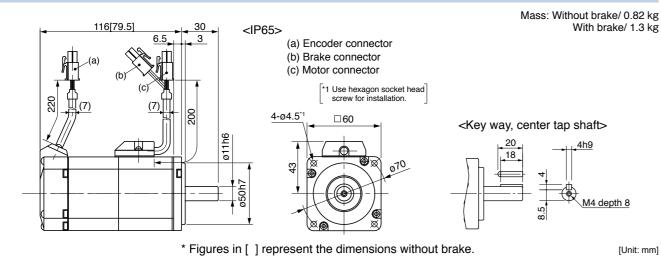
*1 Motor specifications:

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

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



Dimensions



<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.

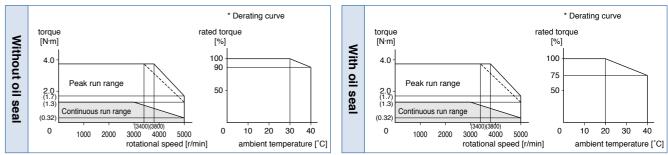
Special Order Product

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

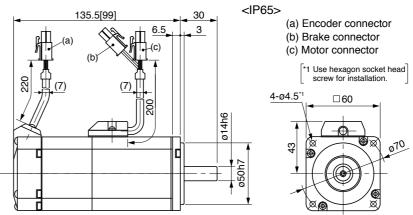
Specifications

		AC2	00 V		•			
	IP65	MSMJ042G1	MSMJ042S1					
	IP67	-	-	Static fri	ction torque (N·m)	1.27 or more		
Model	A5I series	MBDK	T2510	Engagin	g time (ms)	50 or less		
No.	A5IIE series	MBDKT2510E	_	Releasir	ng time (ms) Note)4	15 or less		
Fr	ame symbol	B-fra	ame	Exciting	current (DC) (A)	0.36		
capacity	/ (kVA)	0.	.9	Releasir	ng voltage (DC) (V)	1 or more		
	(W)			Exciting	voltage (DC) (V)	24±1.2		
	(N·m)				0 () ()			
ix. peal	ctorque (N·m)	3.	.8	 Permi 	ssible load (For details, refe	er to P.183)		
	(A(rms))	2.	.6		Radial load P-direction (N)	392		
	(A(o-p))	11	.0	Ŭ	Thrust load A-direction (N)	147		
rake	Without option	No limi	t Note)2	assembly	Thrust load B-direction (N)	196		
nin) Note)1	DV0P4283	No limi	t Note)2	During	()	245		
al spee	d (r/min)	30	00	Ŭ	()	98		
speed	(r/min)	50	00	operation	Thrust load A, B-direction (N)	96		
rtia	Without brake	0.2	26		,	o P.182, P.183.		
kg∙m²)	With brake	0.2	28	,				
Recommended moment of inertia ratio of the load and the rotor Note:			s or less	 *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. 				
Rotary encoder specifications Note)5		⁵ 20-bit 17-bit Incremental Absolute						
Resolution per single turn			131072					
	No. Fr capacity x. peak rake inin) Note)1 al speed tia kg·m²) d mome d and th r specif	IP67 Model No. A5I series A5IE series Frame symbol capacity (kVA) capacity (A(rms)) capacity DV0P4283 al speed (r/min) speed (r/min) speed (r/min) tia Without brake d and the rotor Note)3 r specifications Note)5	IP65 MSMJ042G1 IP67 - Model A5II series MBDK No. A5IE series MBDKT2510E Frame symbol B-fra capacity (kVA) 0.0 (W) 440 capacity (kVA) 0.0 (N·m) 11 ix. peak torque (N·m) 3.1 (A(rms)) 2.2 (A(o-p)) 111 rake Without option No limi al speed (r/min) 30 speed (r/min) 50 tia Without brake 0.1 d mom=nt of inertia d and the rotor 30 times r specifications Note)5 20-bit Incremental	$ \begin{array}{ c c c } \hline IP67 & - & - \\ \hline Model \\ No. \\ \hline A5II series \\ \hline A5II series \\ \hline A5IE series \\ \hline MBDKT2510E \\ - \\ \hline \\ Frame symbol \\ \hline B-frame \\ \hline \\ Sapacity \\ (kVA) \\ \hline 0.9 \\ \hline (WV) \\ \hline 400 \\ \hline (N'm) \\ 1.3 \\ \hline (N'm) \\ \hline (N'm) \\ 1.3 \\ \hline (N'm) \\ \hline (N'm) \\ 1.3 \\ \hline (N'm) \\ \hline (N'm) \\ \hline (N'm) \\ 1.3 \\ \hline (N'm) \\ \hline (N'm) \\ 1.3 \\ \hline (N'm) \\ \hline (N'm) \\ \hline (N'm) \\ 1.3 \\ \hline (N'm) \\ \hline (N'$	NOUNDER COLOUNIP65MSMJ042G1MSMJ042S1This br Do notIP67ModelA5II seriesMBDKT2510E-Ko.A5IE seriesMBDKT2510E-Frame symbolB-frameExcitingcapacity(kVA)0.9capacity(kVA)0.9(M)400(Mrm)1.3 $(A(rms))$ 2.6(A(rms))2.6(A(o-p))11.0rakeWithout optionNo limit Note)2(A(o-p))11.0prake(r/min)3000speedspeed(r/min)Speed(r/min)Mothout brake0.26Without brake0.26Without brake0.28Momment of inertia d and the rotor30 times or lessr specificationsNote)520-bit IncrementalYithoutNote)520-bit Absolute	IP65 MSMJ042G1□ MSMJ042S1□ IP67 - - Model No. A5II series MBDKT2510 - Frame symbol B-frame Engaging time (ms) Releasing time (ms) capacity (kVA) 0.9 Releasing totage (DC) (V) (KVM) 400 Exciting current (DC) (A) Releasing voltage (DC) (V) (A(rms)) 2.6 0.11.0 Permissible load (For details, refered (A(rms))) (A(o-p)) 11.0 Thrust load A-direction (N) rake (A(rms)) 2.6 0.01 Thrust load A-direction (N) DVOP4283 No limit Note)2 No limit Note)2 Radial load P-direction (N) During seed (r/min) 3000 For details of Note 1 to Note 5, referered to the context of inertia d and the rotor Note)3 30 times or less *1 Motor specifications: □ *2 The product that the end of driver rm designation has "E" is "Position con Detail of model designation, refer to P.42.		

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



Dimensions



<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.

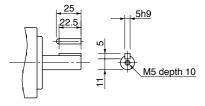
A5 Family **Motor Specifications**

Please contact us for more information

Mass: Without brake/ 1.2 kg With brake/ 1.7 kg

[Unit: mm]

<Key way, center tap shaft>



* Figures in [] represent the dimensions without brake.

Motor Specifications

Special Order Product

200 V MSMJ 750 W [Low inertia, Small capacity]

Specifications

			AC2	00 V				
Motor model		IP65	MSMJ082G1	MSMJ082S1				
*1		IP67	-	-				
Annlinghle	Model	A5I series	MCDK	T3520				
Applicable driver *2	No.	A5IE series	MCDKT3520E	-				
anver	Fr	ame symbol	C-frame					
Power supply	capacit	y (kVA)	1	.3				
Rated output		(W)	75	50				
Rated torque		(N·m)	2	.4				
Momentary N	lax. peal	k torque (N·m)	7.	.1				
Rated curren	t	(A(rms))	4	.0				
Max. current		(A(o-p))	(A(o-p)) 17.0					
Regenerative	brake	Without option	No limi	t Note)2				
frequency (times	/min) Note)1	DV0P4283	No limi	t Note)2				
Rated rotatio	nal spee	d (r/min)	30	00				
Max. rotation	al speed	(r/min)	45	00				
Moment of in	ertia	Without brake	0.8	87				
of rotor (×10-	⁴ kg·m²)	With brake	0.9	97				
Recommender ratio of the lo			20 times or less					
Rotary encoc	ler speci	fications Note)5	⁵ 20-bit 17-bit Incremental Absolute					
F	Resolutio	n per single turn	1048576 131072					

- Please contact us for more information.
- 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	
	Thrust load B-direction (N)	392	
	During operation	Radial load P-direction (N)	392
		Thrust load A, B-direction (N)	147

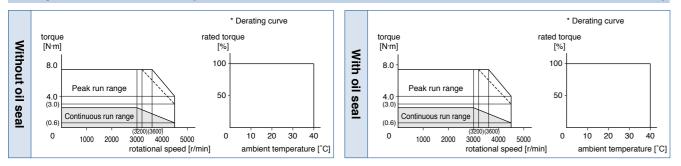
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

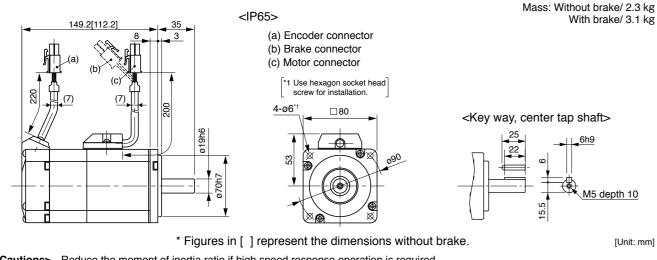
*1 Motor specifications:

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

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



Dimensions



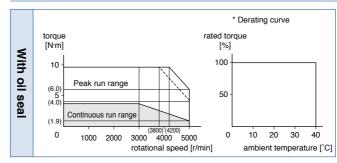
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

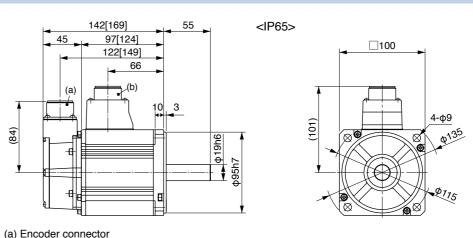
200 V MSME 1.0 kW [Low inertia, Middle capacity]

Specifications

-							
			AC200 V Brake specifications (For a // This brake will be released when		specifications (For details ake will be released when it is e		
Motor model		IP65	MSME102GC	MSME102SC M	Do not use this for braking the motor in motion.		
*1		IP67	-	_ Static friction torque (ction torque (N·m)	7.8 or more
Annlinghia	Model	A5I series	MDDK	T5540	Engagin	g time (ms)	50 or less
Applicable driver *2	No.	A5IIE series	MDDKT5540E	-	Releasir	ng time (ms) Note)4	15 or less
	Fr	ame symbol	D-fra	ame	Exciting	current (DC) (A)	0.81±10 %
Power supply	capacity	y (kVA)	1.	.8	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	10	1000 Exciting voltage (DC) (V)		voltage (DC) (V)	24±2.4
Rated torque	Rated torque (N·m)		3.	18			
Momentary Max. peak torque (N·m)		9.55		 Permissible load (For details, refer to P.183) 		er to P.183)	
Rated current		(A(rms))	6.6			Radial load P-direction (N)	980
Max. current		(A(o-p))	2	8	During	Thrust load A-direction (N)	588
Regenerative b		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (times/r	nin) Note)1	DV0P4284	No limit Note)2		. .	Radial load P-direction (N)	490
Rated rotation	al spee	d (r/min)	3000		During		
Max. rotationa	l speed	(r/min)	50	00	operation	Thrust load A, B-direction (N)	196
Moment of ine		Without brake	2.03		For details of Note 1 to Note 5, refer to P.182, P.183 Dimensions of Driver, refer to P.43.		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	2.35				
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		*1 Motor specifications: *2 The product that the end of driver model			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	 designation has "E" is "Position control type" Detail of model designation, refer to P.152. 		• •	
R	esolutio	n per single turn	1048576	131072			



Dimensions



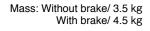
(b) Motor/Brake connector

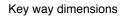
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

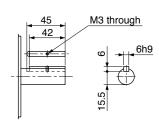
A5 Family **Motor Specifications**

Please contact us for more information

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







* Figures in [] represent the dimensions with brake.

Motor Specifications

Special Order Product

200 V MSME 1.5 kW [Low inertia, Middle capacity]

Specifications

			AC2	00 V		
	IP65		MSME152GC	MSME152SC M		
Motor model *1		IP67		-	-	
Annelisse	Model	A5I series		MDDK	T5540	
Applicable driver *2	No.	A5IIE series		MDDKT5540E	-	
anver	Fr	ame symbol		D-fra	ame	
Power supply	capacit	y (k	VA)	2	.3	
Rated output			(W)	15	00	
Rated torque		(N	ŀm)	4.	77	
Momentary Ma	ax. peal	k torque (N	ŀm)	14.3		
Rated current		(A(rn	ns))	8.2		
Max. current		(A(o	-p))	35		
Regenerative b	orake	Without opti	on No limit Note)2		t Note)2	
frequency (times/	min) Note)1	DV0P4284		No limit Note)2		
Rated rotation	al spee	d (r/n	nin)	3000		
Max. rotationa	l speed	(r/n	nin)	5000		
Moment of ine	rtia	Without bra	ke	2.84		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	Э	3.17		
Recommended moment of inertia ratio of the load and the rotor Note)3			ote)3	15 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
R	Resolution pe			1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

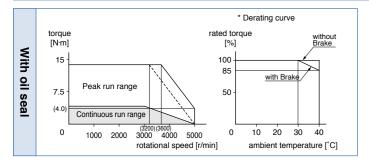
[Unit: mm]

· Dimensions of Driver, refer to P.43.

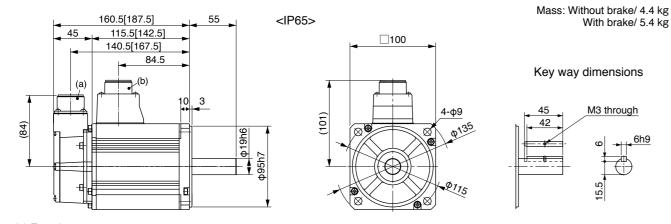
*1 Motor specifications:

*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

* Figures in [] represent the dimensions with brake.

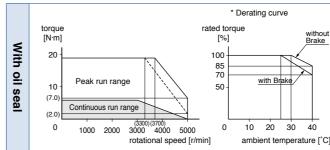
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

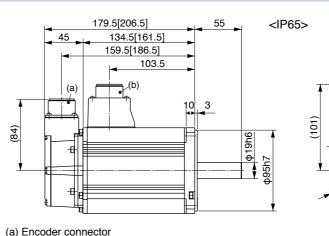
200 V MSME 2.0 kW [Low inertia, Middle capacity]

Specifications

		AC2	00 V	• Brake specifications (For details, refer to P. (This brake will be released when it is energized.)			
Motor model	IP65		MSME202GC M	MSME202SC M	(Do not use this for braking the motor in motion.)		
WOTOL THOOLEI *1	IP67		_	_ Static friction torque (N·m)		ction torque (N·m)	7.8 or more
Annlinghla	Model	A5I series	MEDK	T7364	Engagin	g time (ms)	50 or less
Applicable driver *2	No.	A5IE series	MEDKT7364E	-	Releasir	ng time (ms) Note)4	15 or less
	Fr	ame symbol	E-fra	E-frame		current (DC) (A)	0.81±10 %
Power supply	capacit	y (kVA)	3	.3	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	20	2000 Exciting voltage (DC) (V)		voltage (DC) (V)	24±2.4
Rated torque	Rated torque (N·m)			6.37		0 ()()	
Momentary Max. peak torque (N·m)		19.1		Permissible load (For details, refer to P.18)		er to P.183)	
Rated current		(A(rms))	11.3			Radial load P-direction (N)	980
Max. current		(A(o-p))	48		During	Thrust load A-direction (N)	588
Regenerative b			No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (times/r			No limit Note)2				
Rated rotation	al spee	d (r/min)	3000		During	Radial load P-direction (N)	490
Max. rotationa	l speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	196
Moment of ine	rtia	Without brake	3.68		For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	4.	01	• Dimensions of Driver, refer to P.44.		
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		*1 Motor specifications: *2 The product that the end of driver model			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	designation has "E" is "Position control type". Detail of model designation, refer to P.152.			
R	esolutio	n per single turn	1048576	131072			



Dimensions



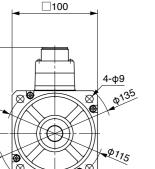
(b) Motor/Brake connector

<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. 160

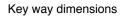
A5 Family **Motor Specifications**

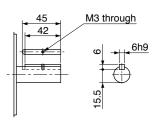
Please contact us for more information

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



Mass: Without brake/ 5.3 kg With brake/ 6.3 kg





* Figures in [] represent the dimensions with brake.

⁽b) Motor/Brake connector

Motor Specifications

Special Order Product

200 V MSME 3.0 kW [Low inertia, Middle capacity]

Specifications

			AC2	00 V	
Motor mode		IP65	MSME302GC	MSME302SC M	
	1	IP67	-	-	
Annlinghia	Model	A5I series	MFDK	TA390	
Applicable driver *	2 No.	A5IE series	MFDKTA390E	-	
	Fr	ame symbol	F-fra	ame	
Power supp	ly capacity	y (kVA)	4	.5	
Rated outpu	ıt	(W)	30	00	
Rated torqu	е	(N·m)	9.	55	
Momentary	Max. peal	k torque (N·m)	28.6		
Rated curre	nt	(A(rms))	18.1		
Max. curren	t	(A(o-p))	77		
Regenerative	e brake	Without option	No limi	t Note)2	
frequency (tim	es/min) Note)1	DV0P4285×2	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	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			s or less	
Rotary enco	Rotary encoder specifications Note)5			17-bit Absolute	
Resolution		n per single turn	1048576	131072	

- Please contact us for more information.
- 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)

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

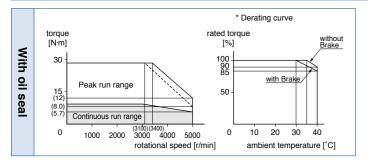
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

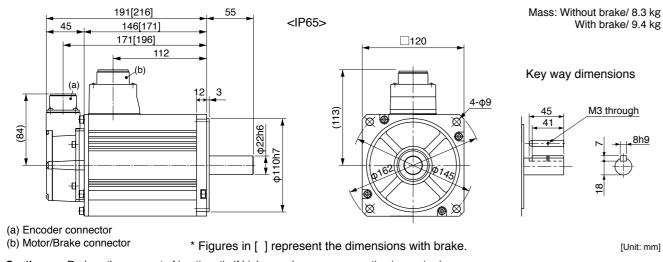
*1 Motor specifications:

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

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



Dimensions



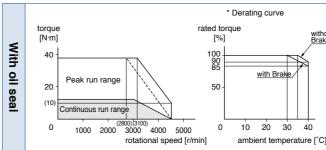
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

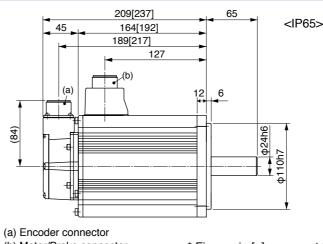
200 V MSME 4.0 kW [Low inertia, Middle capacity]

Specifications

					. Dualas			
			AC2	00 V	Brake specifications (For details, refer to (This brake will be released when it is energize		. ,	
Motor model	IP65		MSME402GC M	MSME402SC M	(Do not use this for braking the motor in motion.)			
*1		IP67	_	_	Static friction torque (N·m)		16.2 or more	
Annlinghis	Model	A5I series	MFDK	TB3A2	Engagin	g time (ms)	110 or less	
Applicable driver *2	No.	A5IE series	MFDKTB3A2E	-	Releasir	ng time (ms) Note)4	50 or less	
	Fr	ame symbol	F-fra	ame	Exciting	current (DC) (A)	0.90±10 %	
Power supply	capacit	y (kVA)	6	.0	Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)	40	00	Exciting voltage (DC) (V) 2		24±2.4	
Rated torque	Rated torque (N·m)		12	12.7		0 ()()		
Momentary Max. peak torque (N·m)		38.2		Permissible load (For details, refer to P.183		er to P.183)		
Rated current		(A(rms))	19.6			Radial load P-direction (N)	980	
Max. current		(A(o-p))	8	83		Thrust load A-direction (N)	588	
Regenerative b	rake Without option		No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (times/	nin) Note)1	DV0P4285×2	No limit Note)2			()		
Rated rotation	al spee	d (r/min)	3000		During	Radial load P-direction (N)	784	
Max. rotationa	l speed	(r/min)	4500		operation	Thrust load A, B-direction (N)	343	
Moment of ine	rtia	Without brake	12.9		 For details of Note 1 to Note 5, refer to P.182, P.183 Dimensions of Driver, refer to P.45. 			
of rotor (×10 ⁻⁴	kg∙m²)	With brake	14.2					
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		*1 Motor specifications: *2 The product that the end of driver model				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	designation has "E" is "Position control type". Detail of model designation, refer to P.152.		••		
R	Resolution per single turn			131072				



Dimensions



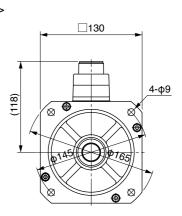
(b) Motor/Brake connector

<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.

A5 Family Motor Specifications

· Please contact us for more information

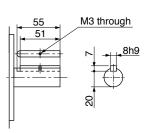
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



* Figures in [] represent the dimensions with brake.

Mass: Without brake/ 11.0 kg With brake/ 12.6 kg

Key way dimensions



Motor Specifications

Special Order Product

200 V MSME 5.0 kW [Low inertia, Middle capacity]

Specifications

			AC2	00 V	
Motor model		IP65	MSME502GC	MSME502SC M	
		IP67	-	-	
Applicable	Model	A5I series	MFDK	TB3A2	
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	-	
diver	Fr	ame symbol	F-fra	ame	
Power supply	/ capacit	y (kVA)	7.	.5	
Rated output		(W)	50	00	
Rated torque		(N·m)	15	5.9	
Momentary N	/lax. peal	k torque (N·m)	47.7		
Rated curren	t	(A(rms))	24.0		
Max. current		(A(o-p))	102		
Regenerative	brake	Without option	357		
frequency (times	s/min) Note)1	DV0P4285×2	No limi	t Note)2	
Rated rotatio	nal spee	d (r/min)	3000		
Max. rotation	al speed	(r/min)	4500		
Moment of in	ertia	Without brake	17	′.4	
of rotor (×10 ⁻	^₄ kg·m²)	With brake	18.6		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary encod	Rotary encoder specifications Note)5			17-bit Absolute	
I	Resolutio	n per single turn	1048576	131072	

- Please contact us for more information.
- 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 During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

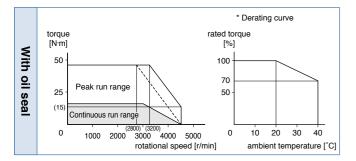
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

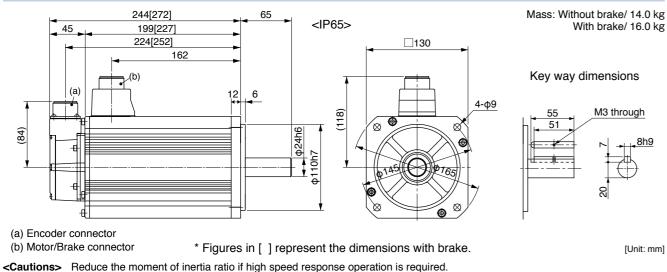
*1 Motor specifications:

*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



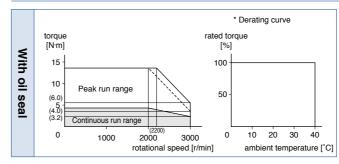
Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

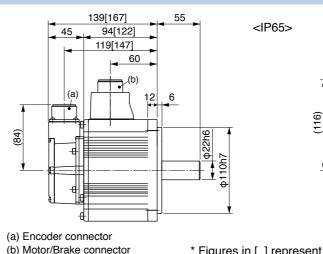
200 V MDME 1.0 kW [Middle inertia, Middle capacity]

Specifications

				AC2	00 V
Motor model		IP65		MDME102GC	MDME102
ei *1		IP67		-	-
	Model	A5I series		MDDKT3530	
*2	No.	A5IIE series		MDDKT3530E	-
	Fr	ame symb	ol	D-frame	
ply	capacity	y	(kVA)	1	.8
out			(W)	10	00
ue			(N·m)	4.77	
/ Ma	ax. peal	< torque	(N·m)	14.3	
ent		(A	(rms))	5.7	
Max. current (A(o-p))			2	4	
Regenerative brake		Without option		No lim	t Note)2
mes/r	nin) Note)1	te)1 DV0P4284		No limit Note)2	
tion	al spee	d	(r/min)	2000	
ona	l speed		(r/min)	3000	
ine	rtia	Without brake		4.60	
0-4	kg∙m²)	With brake		5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times	s or less
Rotary encoder specifications		fications	Note)5	20-bit Incremental	17-t Absol
Resolution per single turn					1310
	*1 *2 ply of ut ue of Ma ent of Ma ent ine 0 ⁻⁴ indeo loa ode	*1 Model No. Fr ply capacity ut ue r Max. peal ent r Max. peal ent r Max. peal ent tional speed inertia 0 ⁻⁴ kg·m ²) nded mome load and th oder specif	el IP67 Model A5II series No. A5II series A5IE serie Frame symb ply capacity ut ut Max. peak torque ent (A mes/min) Note)1 DV0P4 ional speed inertia 0 ⁻⁴ kg·m ² Without load and the rotor oder specifications	el *1 IP67 A5II series A5IE series Frame symbol ply capacity (kVA) ut (W) ue (N·m) r Max. peak torque (N·m) r Max. peak	el IP67 - *1 IP67 - No. A5I series MDDKT3530E Frame symbol D-fr. ply capacity (kVA) 1 ut (W) 10 ut (W) 10 v Max. peak torque (N·m) 4.5 r Max. peak torque (N·m) 14 ent (A(rms))) 5 nt (A(o-p))) 2 ve brake Without option No limitional speed ional speed (r/min) 30 inertia Without brake 4.1 0 ⁻⁴ kg·m ²) With brake 5.1 oded moment of inertia 10 times load and the rotor Note)3 20-bit oder specifications Note)5 20-bit



Dimensions



<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.

A5 Family **Motor Specifications**

Please contact us for more information

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(This br	• 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 fri	ction torque (N·m)	4.9 or more				
Engagin	g time (ms)	80 or less				
Releasir	Releasing time (ms) Note)4					
Exciting	Exciting current (DC) (A) 0.59±					
Releasir	Releasing voltage (DC) (V)					
Exciting	Exciting voltage (DC) (V)					
Permissible load (For details, refer to P.183)						
	Radial load P-direction (N)	980				
During assembly	Thrust load A-direction (N)	588				
assembly	Thursday and Duding sting (NI)	000				

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

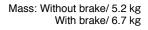
• For details of Note 1 to Note 5, refer to P.182, P.183.

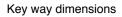
· Dimensions of Driver, refer to P.43.

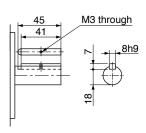
*1 Motor specifications:

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

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







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* Figures in [] represent the dimensions with brake.

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Motor Specifications

Special Order Product

200 V MDME 1.5 kW [Middle inertia, Middle capacity]

Specifications

			AC2	00 V	
		IP65		MDME152GC	MDME152SC M
Motor model *1		IP67		-	-
Angliaghte	Model	A5I series	;	MDDK	T5540
Applicable driver *2	No.	A5IIE seri	es	MDDKT5540E	-
anver	Fr	ame syml	ool	D-fra	ame
Power supply	capacit	у	(kVA)	2	.3
Rated output			(W)	15	00
Rated torque			(N·m)	7.	16
Momentary M	ax. peal	k torque	(N·m)	21.5	
Rated current		(/	A(rms))	9.4	
Max. current	Max. current (A(o-p))		A(o-p))	40	
Regenerative t	orake	Without	Without option No limit Note)2		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	ertia	Without brake		6.70	
of rotor (×10 ⁻⁴	kg∙m²)	With b	rake	7.9	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 s		e turn	1048576	131072

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

Please contact us for more information.

1 0	/
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

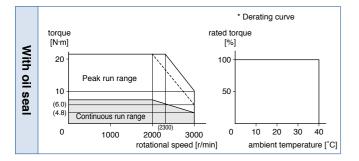
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

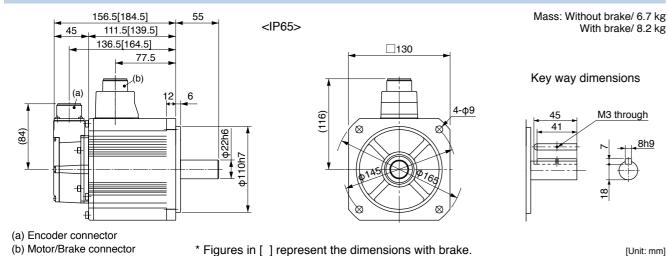
*1 Motor specifications:

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

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



Dimensions



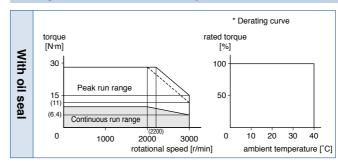
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

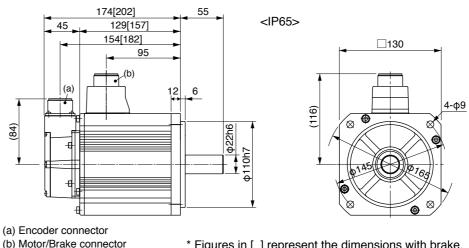
200 V MDME 2.0 kW [Middle inertia, Middle capacity]

Specifications

					AC2	00 V
			IP65		MDME202GC M	MDME202
Motor mod	101 *1		IP67		_	-
		Model	A5I series		MEDKT7364	
Applicable driver	*2	No.	A5IIE series		MEDKT7364E	-
unver		Fr	ame syml	bol	E-frame	
Power sup	ply	capacit	у	(kVA)	3	.3
Rated outp	out			(W)	20	00
Rated torq	ue			(N·m)	9.55	
Momentar	y Ma	ax. peal	k torque	(N·m)	28.6	
Rated current		(/	A(rms))	11.5		
Max. current (A(o-p))		4	.9			
Regenerative brake		Without option		No limit Note)2		
frequency (t	imes/r	nin) Note)1	DV0P4285		No limit Note)2	
Rated rota	tion	al spee	d	(r/min)	2000	
Max. rotati	iona	l speed		(r/min)	3000	
Moment of	f ine	rtia	Without brake		8.72	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		10.0		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less				
Rotary end	code	er specit	ifications Note)5		20-bit Incremental	17-ł Abso
Resolution per single turn					1048576	1310



Dimensions



<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.

A5 Family **Motor Specifications**

Please contact us for more information

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lute	
72	

• 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 fri	ction torque (N·m)	13.7 or more			
Engagin	g time (ms)	100 or less			
Releasir	ng 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					
• Permi	ssible load (For details, refe	er to P.183)			
	Radial load P-direction (N)	980			
During assembly	Thrust load A-direction (N)	588			
Thrust load B-direction (N) 686					
During	Radial load P-direction (N)	490			
operation Thrust load A, B-direction (N) 196					

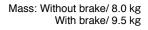
• For details of Note 1 to Note 5, refer to P.182, P.183.

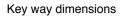
· Dimensions of Driver, refer to P.43.

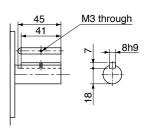
*1 Motor specifications:

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

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







* Figures in [] represent the dimensions with brake.

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Motor Specifications

Special Order Product

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

Specifications

			AC2	00 V	
		IP65	MDME302GC M	MDME302SC M	
Motor model *1		IP67	-	-	
A	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 M	ax. peal	k torque (N·m)	43.0		
Rated current		(A(rms))	17.4		
Max. current		(A(o-p))	7	74	
Regenerative t	Regenerative brake		No limit Note)2		
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	ertia	Without brake	12.9		
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m ²)		14.2		
	Recommended moment of inertia ratio of the load and the rotor Note)3			s or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131072	

- Please contact us for more information.
- 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 During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

• For details of Note 1 to Note 5, refer to P.182, P.183.

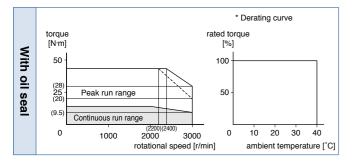
8h9

· Dimensions of Driver, refer to P.45.

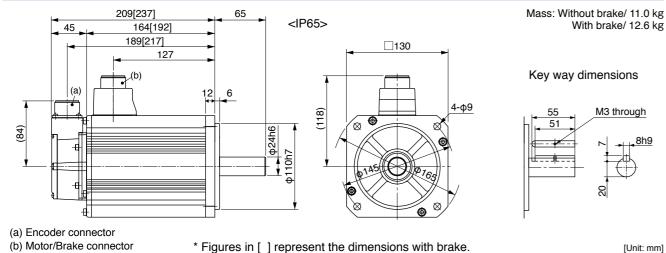
*1 Motor specifications:

*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



^{*} Figures in [] represent the dimensions with brake.

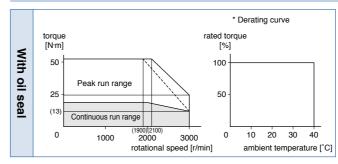
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

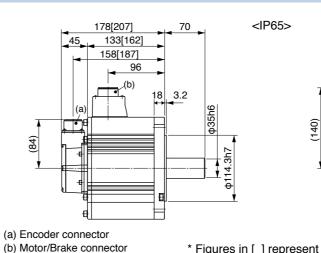
200 V MDME 4.0 kW [Middle inertia, Middle capacity]

Specifications

					Durles		() D (00)
		AC2	00 V	 Brake specifications (For details, refe (This brake will be released when it is energi 		,	
Motor model			MDME402GC M	MDME402SC M	(Do not use this for braking the motor in motion.)		
*1		IP67			Static fri	Static friction torque (N·m)	
Applicable	Model	A5I series	MFDK	TB3A2	Engagin	Engaging time (ms)	
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	-	Releasir	ng time (ms) Note)4	25 or less
	Fr	ame symbol	F-fra	ame	Exciting	current (DC) (A)	1.3±10 %
Power supply	capacity	,	6		Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	40	00	Exciting	voltage (DC) (V)	24±2.4
Rated torque		(N·m)	19	0.1		0 ()()	
Momentary Ma	Momentary Max. peak torque (N·m)		57.3		• Permissible load (For details, refer to P.183)		er to P.183)
Rated current		(A(rms))	21	21.0		Radial load P-direction (N)	1666
Max. current		(A(o-p))	89		During	Thrust load A-direction (N)	784
Regenerative b	brake Without option No limit Note)2		t Note)2	assembly	Thrust load B-direction (N)	980	
frequency (times/r	nin) Note)1	DV0P4285×2	No limi	t Note)2		Radial load P-direction (N)	784
Rated rotation	al spee	d (r/min)	20	00	During	· · · · · · · · · · · · · · · · · · ·	
Max. rotationa	l speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	343
Moment of ine	rtia	Without brake	37.6		For details of Note 1 to Note 5, refer to P.182, P.183		
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m ²) With brake		38.6		Dimensions of Driver, refer to P.45.		
Recommended moment of inertia ratio of the load and the rotor Note)3		*1 Motor specifications: 10 times or less *2 The product that the end of		oduct that the end of driver m			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	designation has "E" is "Position control type". Detail of model designation, refer to P.152.		• •	
Resolution per single turn			1048576	131072			



Dimensions

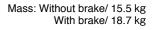


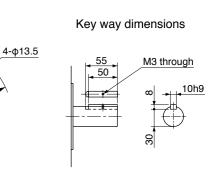
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

A5 Family **Motor Specifications**

Please contact us for more information

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





* Figures in [] represent the dimensions with brake.

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Motor Specifications

Special Order Product

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

Specifications

			AC2	00 V		
Motor model		IP65		MDME502GC	MDME502SC M	
		IP67		-	-	
Amplicable	Model	A5I series	;	MFDKTB3A2		
Applicable driver *2	No.	A5IIE seri	es	MFDKTB3A2E	-	
unver	Fr	ame syml	ool	F-fra	ame	
Power supply	capacit	у	(kVA)	7.	.5	
Rated output			(W)	50	00	
Rated torque			(N·m)	23	3.9	
Momentary M	ax. peal	k torque	(N·m)	71.6		
Rated current		(/	A(rms))	25.9		
Max. current		(A(o-p))	110		
Regenerative I	orake	Without option		120		
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	3000		
Moment of ine	ertia	Without	brake	48	3.0	
of rotor (×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 encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			e turn	1048576	131072	

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

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

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

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

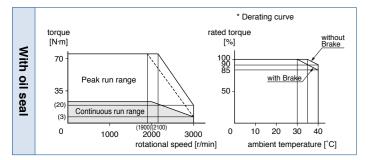
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

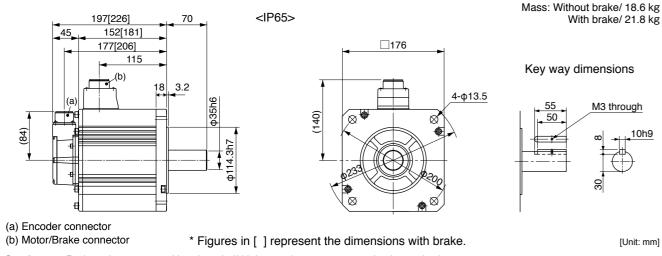
*1 Motor specifications:

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

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



Dimensions



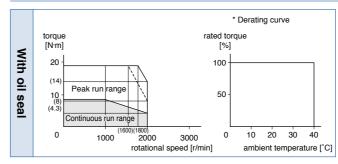
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

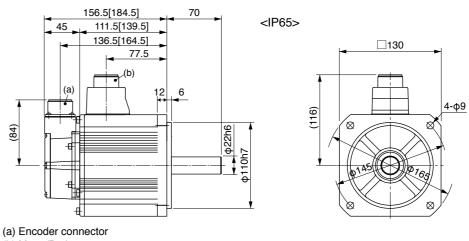
200 V MGME 0.9 kW [Middle inertia, Middle capacity]

Specifications

-						
			AC2	200 V		
			IP65	MGME092GC	MGME092	
Motor mod	101 *1		IP67	-	-	
		Model	A5I series	MDDK	CT5540	
Applicable driver	*2	No.	A5IE series	MDDKT5540E	-	
unver		Fr	ame symbol	D-fr	ame	
Power sup	ply	capacit	y (kVA) 1	.8	
Rated outp	out		(W) 9	00	
Rated toro	lne		(N·m) 8.	8.59	
Momentar	y Ma	ax. peal	k torque (N·m	19.3		
Rated curr	rent		(A(rms)	7.6		
Max. current (A(o-p))) 2	24		
Regenerat	ive b	orake	Without option	No lim	No limit Note)2	
frequency (i	imes/r	nin) Note)1	DV0P4284	No limit Note)2		
Rated rota	tion	al spee	d (r/min) 10	1000	
Max. rotat	iona	l speed	(r/min	2000		
Moment of	f ine	rtia	Without brake 6.70		70	
of rotor (×10 ⁻⁴ kg·m ²)		With brake	7.99			
Recommended moment of inertia ratio of the load and the rotor Note)3				s or less		
Rotary encoder specification		fications Note)	20-bit Incremental	17-t Abso		
Resolution per single turn				1048576	1310	



Dimensions



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

A5 Family **Motor Specifications**

Please contact us for more information

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/This b	e specifications (For details rake will be released when it is use this for braking the motor in	energized.)		
Static fr	iction torque (N·m)	13.7 or more		
Engagir	ng time (ms)	100 or less		
Releasi	Releasing time (ms) Note)4			
Exciting	Exciting current (DC) (A)			
Releasi	Releasing voltage (DC) (V)			
Exciting	Exciting voltage (DC) (V)			
Permissible load (For details, refer to P.183)				
	Radial load P-direction (N)	980		
During	Thrust load A-direction (N)	588		

uring ssembly	Thrust load A-direction (N)	588
ocornory	Thrust load B-direction (N)	686
uring	Radial load P-direction (N)	686
peration	Thrust load A, B-direction (N)	196

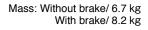
For details of Note 1 to Note 5, refer to P.182, P.183.

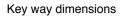
Dimensions of Driver, refer to P.43.

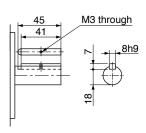
Motor specifications:

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.>)







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Motor Specifications

Special Order Product

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

Specifications

			AC2	00 V	
Matananadal		IP65		MGME202GC M	MGME202SC M
Motor model *1		IP67		-	-
A	Model	A5I series	S	MFDK	TA390
Applicable driver *2	No.	A5IIE ser	ies	MFDKTA390E	-
diver	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	y	(kVA)	3	.8
Rated output			(W)	20	00
Rated torque			(N·m)	19	0.1
Momentary M	ax. peal	< torque	(N·m)	47.7	
Rated current		(.	A(rms))	17.0	
Max. current		((A(o-p))	60	
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)	1000	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	ertia	Without	brake	30	0.3
of rotor (×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
Resolution per single turn			le turn	1048576	131072

- · Please contact us for more information.
- 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
	accombry	Thrust load B-direction (N)	980
	During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490	

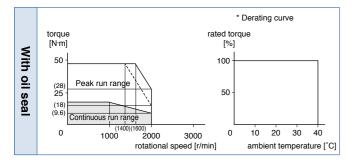
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

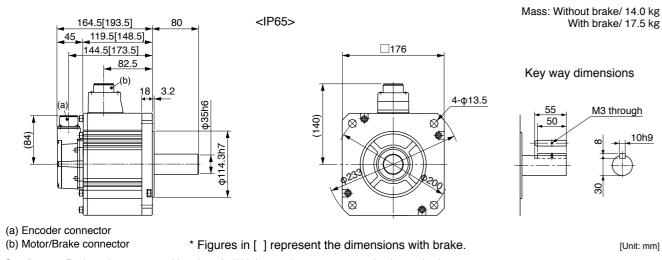
*1 Motor specifications:

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

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



Dimensions



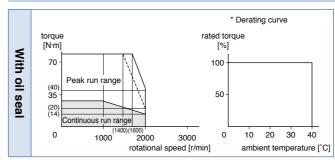
Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

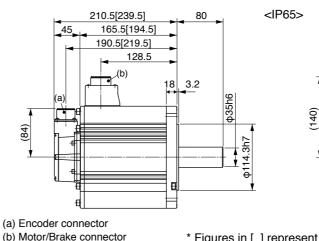
200 V MGME 3.0 kW [Middle inertia, Middle capacity]

Specifications

					AC2	00 V	
			IP65		MGME302GC M	MGME302	
Motor model *1			IP67		-	-	
		Model	A5I series	;	MFDK	TB3A2	
	*2	No.	A5IIE seri	es	MFDKTB3A2E	-	
unver		Fr	ame symt	loc	F-fr	ame	
Motor model *1 IP67 Applicable driver Model A5II series Power supply capacity K K Rated output Frame symbol Frame symbol Power supply capacity (K Rated output (K Rated current (Afractional speed) Momentary Max. peak torque (N Max. current (Afractional speed) Regenerative brake frequency (times/min) Note) DV0P4285 Rated rotational speed (r/r Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake Recommended moment of inertia ratio of the load and the rotor N			(kVA)	4	.5		
Rated output (W					30	00	
Rated torque (N·m					28	3.7	
Momentar	y Ma	ax. peal	k torque	(N·m)	71.7		
Rated current			(/	A(rms))	22.6		
Max. current (A(o-p)			A(o-p))	80			
Regenerat	ive b	orake	Without option		No limit Note)2		
frequency (i	imes/r	nin) Note)1	DV0P4285×2		No limit Note)2		
Rated rota	tion	al spee	d	(r/min)	10	00	
Max. rotat	iona	l speed		(r/min)	20	00	
Moment of	f ine	rtia	Without brake		48.4		
of rotor (×	10-4	kg∙m²)	With b	rake	49.2		
				ia Note)3	10 times	s or less	
Rotary end	code	er specit	fications	Note)5	20-bit Incremental	17-t Abso	
	R	esolutio	n per singl	e turn	1048576	1310	



Dimensions



<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. 172

A5 Family **Motor Specifications**

Please contact us for more information

A5 Family

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	specifications (For details					
(This brake will be released when it is energized.) Do not use this for braking the motor in motion.						
Static fri	ction torque (N·m)	58.8 or more				
Engagin	g time (ms)	150 or less				
Releasir	ng time (ms) Note)4	50 or less				
Exciting	current (DC) (A)	1.4±10 %				
Releasir	ng voltage (DC) (V)	2 or more				
Exciting	voltage (DC) (V)	24±2.4				
• Permi	ssible load (For details, ref	er to P.183)				
	Radial load P-direction (N)	2058				
During assembly	Thrust load A-direction (N)	980				
accontroly	Thrust load B-direction (N)	1176				
During	Radial load P-direction (N)	1470				
-						

• For details of Note 1 to Note 5, refer to P.182, P.183.

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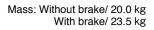
· Dimensions of Driver, refer to P.45.

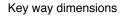
operation Thrust load A, B-direction (N)

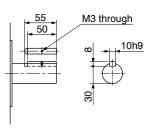
*1 Motor specifications:

*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.>)







[Unit: mm]

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* Figures in [] represent the dimensions with brake.

Motor Specifications

Special Order Product

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

Specifications

			AC2	00 V	
Motor mode		IP65	MHMJ022G1	MHMJ022S1	
	:1	IP67	-	-	
Annlinghia	Model	A5I series	MADK	T1507	
Applicable driver *	No.	A5IIE series	MADKT1507E	-	
	Fr	ame symbol	A-fr	ame	
Power supp	ly capacit	y (kVA)	0	.5	
Rated outpu	ut	(W)	20	00	
Rated torqu	e	(N·m)	0.	64	
Momentary	Max. peal	k torque (N·m)	1.91		
Rated curre	nt	(A(rms))	1.6		
Max. curren	ıt	(A(o-p))	6	.9	
Regenerativ	e brake	Without option	No limit Note)2		
frequency (tim	nes/min) Note)1	DV0P4283 No limit Note		it Note)2	
Rated rotati	onal spee	d (r/min)	30	000	
Max. rotatio	nal speed	(r/min)	50	000	
Moment of i	nertia	Without brake	0.	42	
of rotor (×10	D ^{−4} kg·m²)	With brake	0.	0.45	
Recomment ratio of the I		ent of inertia he rotor Note)3		s or less	
Rotary enco	oder speci	fications Note)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per single turn	1048576	131072	

- Please contact us for more information.
- 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
accombry	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

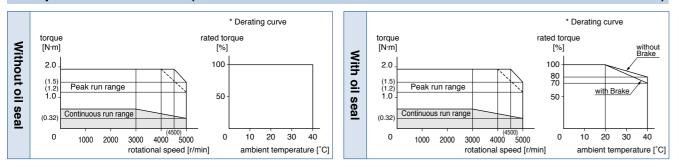
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.42.

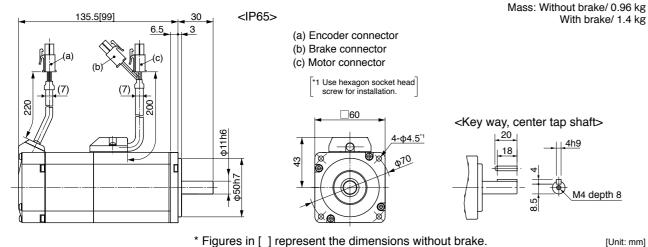
*1 Motor specifications:

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

<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.

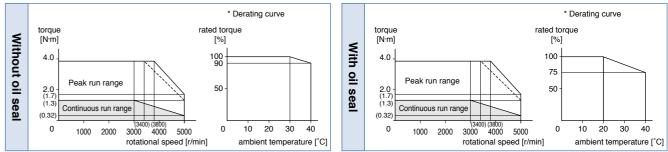
Special Order Product

200 V MHMJ 400 W [High inertia, Small capacity]

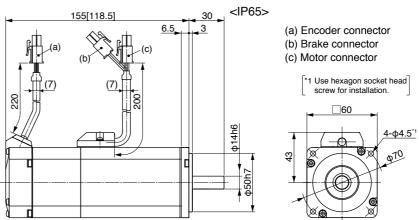
Specifications

			AC2	00 V	• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)			
Matar madal	IP65		MHMJ042G1	MHMJ042S1	Do not use this for braking the motor in motion			
Motor model *1	10.00		_	_	 Static friction torque (N·m) 		1.27 or more	
Annlinghia	Model A5I series MBDKT2510 Engaging time (ms)		g time (ms)	50 or less				
Applicable driver *2	No.	A5IE series	MBDKT2510E	-	Releasir	ng time (ms) Note)4	15 or less	
	Fr	ame symbol	B-frame		Exciting	current (DC) (A)	0.36	
Power supply capacity (kVA)			0	.9	Releasir	Releasing voltage (DC) (V) 1 or		
Rated output (W)			40	00	Exciting	Exciting voltage (DC) (V) 24±1.2		
Rated torque (N·m)			1.					
Momentary Max. peak torque (N·m)		3	.8	Permissible load (For details, refer to P.183		er to P.183)		
Rated current		(A(rms))			Radial load P-direction (N)	392		
Max. current		(A(o-p))	11	.0	During Thrust load A-direction (N)		147	
	Regenerative brake Without option		No limit Note)2		assembly	Thrust load B-direction (N)	196	
frequency (times/r	nin) Note)1	DV0P4283	No limi	t Note)2		()		
Rated rotation	al spee	d (r/min)	30	00	During Radial load P-direction (N)		245	
Max. rotationa	l speed	(r/min)	50	00	operation	Thrust load A, B-direction (N)	98	
Moment of ine	rtia	Without brake	0.67		• For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10 ⁻⁴	kg∙m²)	With brake	0.	70	Dimensions of Driver, refer to P.42.			
	Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	*1 Motor specifications: *2 The product that the end of driver model			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	designation has "E" is "Position control type". Detail of model designation, refer to P.152.				
R	esolutio	n per single turn	1048576	131072				

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



Dimensions



<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.

A5 Family **Motor Specifications**

Please contact us for more information

Mass: Without brake/ 1.4 kg With brake/ 1.8 kg

M5 depth 10

<Key way, center tap shaft>

* Figures in [] represent the dimensions without brake.

[Unit: mm]

A5 Family

Special Order Product

Motor Specifications

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

Specifications

			AC200 V			
Motor model		IP65		MHMJ082G1	MHMJ082S1	
wotor model *1		IP67		-	-	
Annlinghle	Model	A5I serie	s	MCDK	T3520	
Applicable driver *2	No.	A5IIE se	ries	MCDKT3520E	-	
anver	Fi	rame sym	npol	C-fr	ame	
Power supply	/ capacit	у	(kVA)	1	.3	
Rated output			(W)	75	50	
Rated torque			(N·m)	2	.4	
Momentary N	/lax. pea	k torque	(N·m)	7.1		
Rated curren	t	((A(rms))	4.0		
Max. current			(A(o-p))	17.0		
Regenerative	brake	Without option		No limit Note)2		
frequency (time	s/min) Note)1	DV0P4283		No limit Note)2		
Rated rotatio	nal spee	d	(r/min)	3000		
Max. rotation	al speed		(r/min)	45	00	
Moment of in	ertia	Withou	t brake	1.51		
of rotor (×10	⁻⁴ kg⋅m²)	With I	orake	1.61		
Recommend ratio of the lo			rtia Note)3	20 times	s or less	
Rotary encod	ler speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	gle turn	1048576	131072	

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

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

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

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

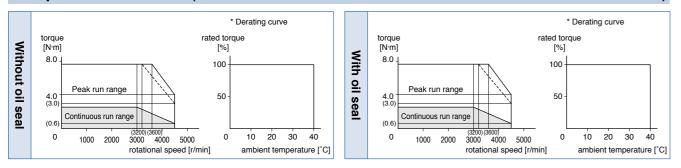
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

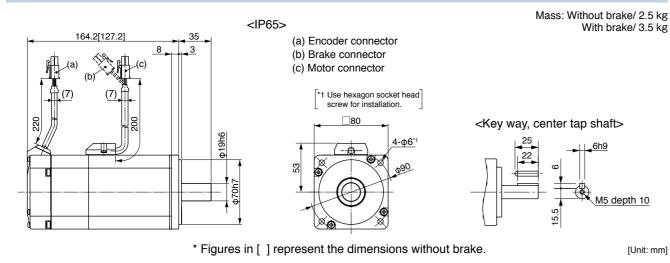
*1 Motor specifications:

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

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



Dimensions



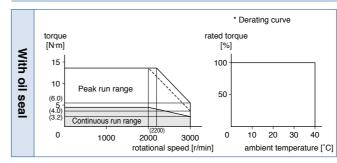
Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

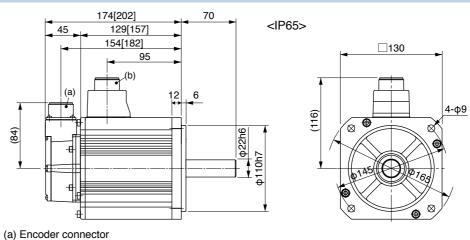
200 V MHME 1.0 kW [High inertia, Middle capacity]

Specifications

Specific	alion	3					
			AC2	00 V		, refer to P.183)	
Motor model		IP65	MHME102GC	MHME102SC M	(This brake will be released when it is e Do not use this for braking the motor in		
*1		IP67	-	-	 Static friction torque (N·m) 		4.9 or more
	Model	A5I series	MDDK	CT3530	Engagin	g time (ms)	80 or less
Applicable driver *2	No.	A5IE series	MDDKT3530E	-	Releasing time (ms) Note)4		70 or less
Frame symbol		D-frame		Exciting	current (DC) (A)	0.59±10 %	
Power supply	capacit	y (kVA)	1	.8	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	10	000	Exciting	xciting voltage (DC) (V) 24±2	
Rated torque	Rated torque (N·m)			77			
Momentary N	lax. pea	k torque (N·m)	14	4.3	Permissible load (For details, refer to P.183		er to P.183)
Rated curren	t	(A(rms))	5.7			Radial load P-direction (N)	980
Max. current		(A(o-p))	24		During	Thrust load A-direction (N)	588
Regenerative		Without option	8	33	assembly	Thrust load B-direction (N)	686
frequency (times	/min) Note)1	DV0P4284	No lim	it Note)2	During	Radial load P-direction (N)	490
Rated rotatio	nal spee	d (r/min)	2000		During operation		196
Max. rotation	al speed	(r/min)	30	000	·	Thrust load A, B-direction (N)	
Moment of in		Without brake	24	4.7	 For details of Note 1 to Note 5, r 		o P.182, P.183.
of rotor (×10-	^₄ kg·m²)	With brake	26	6.0	Dimensions of Driver, refer to P.43. *1 Motor specifications:		
	Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		 *1 Motor specifications: *2 The product that the end of driver model designation has "E" is "Position control type". 		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	0	of model designation, refer to		
F	Resolution per single turn			131072			



Dimensions

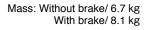


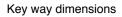
(b) Motor/Brake connector

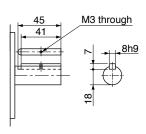
A5 Family **Motor Specifications**

Please contact us for more information

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







* Figures in [] represent the dimensions with brake.

[Unit: mm]

A5 Family

<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

Special Order Product

200 V MHME 1.5 kW [High inertia, Middle capacity]

Specifications

			AC2	00 V		
	IP65		MHME152GC	MHME152SC M		
Motor model *1	IP67		-	-		
Annlinghle	Model	A5I series		MDDKT5540		
Applicable driver *2	No.	A5IIE series		MDDKT5540E	-	
diver	Fr	ame symb	ol	D-fra	ame	
Power supply	capacit	у	(kVA)	2	.3	
Rated output			(W)	15	00	
Rated torque			(N·m)	7.16		
Momentary M	ax. peal	k torque	(N·m)	21.5		
Rated current		(A	(rms))	9.4		
Max. current		(A	A(o-p))	40		
Regenerative t	orake	Without option		22		
frequency (times/	min) Note)1	DV0P4284		130		
Rated rotation	al spee	d ((r/min)	2000		
Max. rotationa	l speed	((r/min)	3000		
Moment of ine	ertia	Without brake		37.1		
of rotor (×10 ⁻⁴	kg∙m²)	With br	ake	38.4		
	Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	Resolution p		e turn	1048576	131072	

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

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

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

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

• For details of Note 1 to Note 5, refer to P.182, P.183.

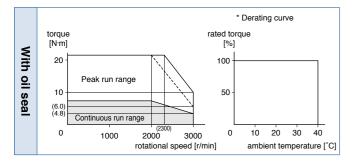
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· Dimensions of Driver, refer to P.43.

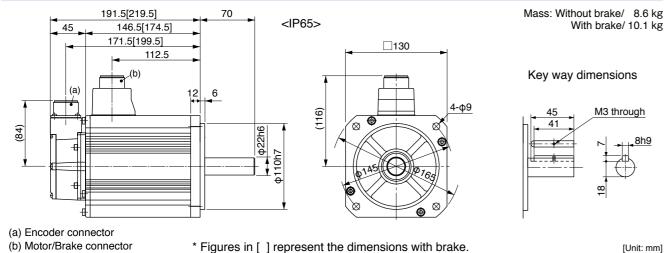
*1 Motor specifications:

*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



(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

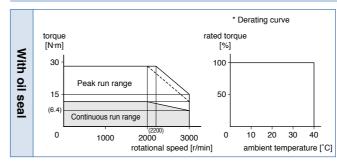
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

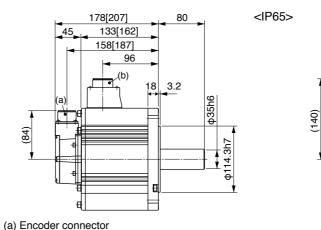
200 V MHME 2.0 kW [High inertia, Middle capacity]

Specifications

		AC200 V		• Brake specifications (For details, refer to P.183 / This brake will be released when it is energized.)				
IP65		MHME202GC M	MHME202SC M		Do not use this for braking the motor in motion.			
WOTOL THOOLEI *1	Motor model *1 IP67				Static fri	Static friction torque (N·m)		
Annlinghle	Model	A5I series	MEDK	T7364	Engagin	g time (ms)	80 or less	
Applicable driver *2	No.	A5IE series	MEDKT7364E	-	Releasir	ng time (ms) Note)4	25 or less	
	Fr	ame symbol	E-frame		Exciting	current (DC) (A)	1.3±10 %	
Power supply	capacit	y (kVA)) 3.3		Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)	20	00	Exciting	Exciting voltage (DC) (V) 24±2		
Rated torque		(N·m)	9.	55				
Momentary Ma	Momentary Max. peak torque (N·m)		28	3.6	Permissible load (For details, refer to P.18		er to P.183)	
Rated current		(A(rms))	11	11.1		Radial load P-direction (N)	1666	
Max. current		(A(o-p))	47		During	Thrust load A-direction (N)	784	
Regenerative b	rake	Without option	45		assembly	Thrust load B-direction (N)	980	
frequency (times/r	nin) Note)1	DV0P4285	142			()	784	
Rated rotation	al spee	d (r/min)	20	2000 During Radial load P-direction (· · · · · · · · · · · · · · · · · · ·		
Max. rotationa	l speed	(r/min)	30	00	operation	operation Thrust load A, B-direction (N) 3		
Moment of ine	rtia	Without brake	• For details of Note 1 to Note		ails of Note 1 to Note 5, refer t	to P.182, P.183.		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	59.6		• Dimensions of Driver, refer to P.43.			
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		*1 Motor specifications: *2 The product that the end of driver model				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	designation has "E" is "Position control type". Detail of model designation, refer to P.152.				
Resolution per single turn			1048576	131072				



Dimensions



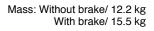
(b) Motor/Brake connector

<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.

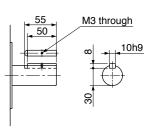
A5 Family **Motor Specifications**

Please contact us for more information

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



Key way dimensions



176 4-φ13.5 à⊗

* Figures in [] represent the dimensions with brake.

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

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Motor Specifications

Special Order Product

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

Specifications

			AC2	00 V		
Motor model		IP65	MHME302GC	MHME302SC M		
WOTOR MODEI *1		IP67	-	-		
A	Model	A5I series	MFDK	MFDKTA390		
Applicable driver *2	No.	A5IIE series	MFDKTA390E	-		
diver	Fr	ame symbol	F-fr	ame		
Power supply	capacit	y (kVA)	4	.5		
Rated output		(W)	30	000		
Rated torque		(N·m)	14	14.3		
Momentary M	ax. peal	k torque (N·m)	43.0			
Rated current		(A(rms))	16.0			
Max. current		(A(o-p))	68			
Regenerative b	orake	Without option	19			
frequency (times/	min) Note)1	DV0P4285×2	142			
Rated rotation	al spee	d (r/min)	2000			
Max. rotationa	l speed	(r/min)	30	3000		
Moment of ine	rtia	Without brake	90.5			
of rotor (×10 ⁻⁴	kg∙m²)	With brake	92	2.1		
	Recommended moment of inertia ratio of the load and the rotor Note)3			or less		
Rotary encode	Rotary encoder specifications Note)5			17-bit Absolute		
Resolution pe		n per single turn	1048576	131072		

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

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

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

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

For details of Note 1 to Note 5, refer to P.182, P.183.

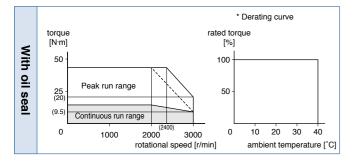
[Unit: mm]

· Dimensions of Driver, refer to P.45.

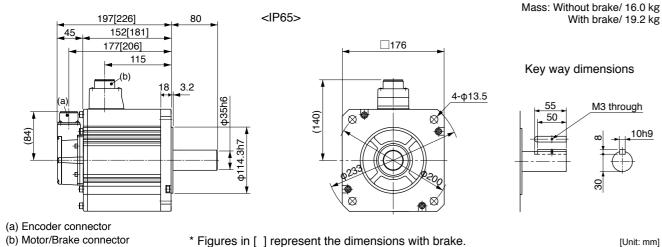
*1 Motor specifications:

*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



(b) Motor/Brake connector

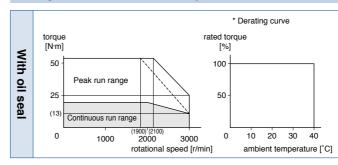
Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

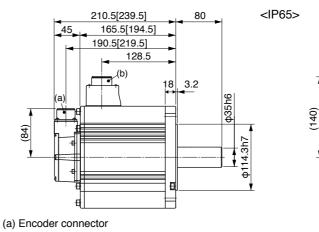
200 V MHME 4.0 kW [High inertia, Middle capacity]

Specifications

					AC2	00 V	
Motor model		IP65			MHME402GC M	MHME402	
			IP67		-	-	
		Model	A5I series		MFDKTB3A2		
Applicable driver	*2	No.	A5IIE series		MFDKTB3A2E	-	
unver		Fr	ame symb	ol	F-frame		
Power sup	ply	capacit	y	(kVA)	6	.0	
Rated outp	out			(W)	40	00	
Rated torg	ue			(N·m)	19).1	
Momentar	y Ma	ax. peal	k torque	(N·m)	57.3		
Rated curr	rent		(A	(rms))	21.0		
Max. current (A(o-p))			A(o-p))	8	9		
Regenerati	ve b	orake	Without option		17		
frequency (t	imes/r	nin) Note)1	DV0P4285×2		125		
Rated rota	tion	al spee	d	(r/min)	2000		
Max. rotati	iona	l speed		(r/min)	3000		
Moment of	f 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				ia Note)3	5 times or less		
Rotary end	code	er speci	fications	Note)5	20-bit Incremental	17-ł Abso	
Resolution per single turn					1048576	1310	



Dimensions



(b) Motor/Brake connector

<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. 180

A5 Family **Motor Specifications**

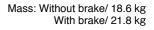
· Please contact us for more information

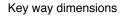
2SC M
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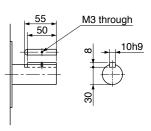
• Brake specifications (For details, refer to P.18 (This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)					
	tic friction torque (N·m) 24.5 or more				
Engagin	g time (ms)	80 or les			
Releasir	ng time (ms) Note)4	25 or les			
Exciting	current (DC) (A)	1.3±10 °			
Releasir	ng voltage (DC) (V)	2 or mo			
Exciting voltage (DC) (V) 24±2.4					
• Permissible load (For details, refer to P.183)					
• Permi	ssible load (For details, refe	er to P.183)			
_	ssible load (For details, refe Radial load P-direction (N)	er to P.183) 1666			
During		,			
During	Radial load P-direction (N)	1666			
Permi During assembly During	Radial load P-direction (N) Thrust load A-direction (N)	1666 784			

*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.>)







176 4-φ13.5 هØ

* Figures in [] represent the dimensions with brake.

Motor Specifications

Special Order Product

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

Specifications

			AC2	00 V		
	IP65		MHME502GC	MHME502SC M		
Motor model *1		IP67		-	-	
Annlinghia	Model	A5I series		MFDKTB3A2		
Applicable driver *2	No.	A5IIE ser	ries	MFDKTB3A2E	_	
anver	Fi	ame sym	bol	F-fra	ame	
Power supply	capacit	у	(kVA)	7.	.5	
Rated output			(W)	50	00	
Rated torque			(N·m)	23	23.9	
Momentary M	ax. pea	k torque	(N·m)	71.6		
Rated current		(A(rms))	25.9		
Max. current			(A(o-p))	110		
Regenerative I	orake	Without option		10		
frequency (times/	min) Note)1	DV0P4285×2		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 t	orake	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	
Resolution per single turn			1048576	131072		

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

· Please contact us for more information.

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

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

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

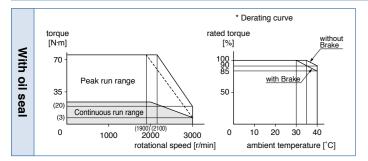
For details of Note 1 to Note 5, refer to P.182, P.183.

Dimensions of Driver, refer to P.45.

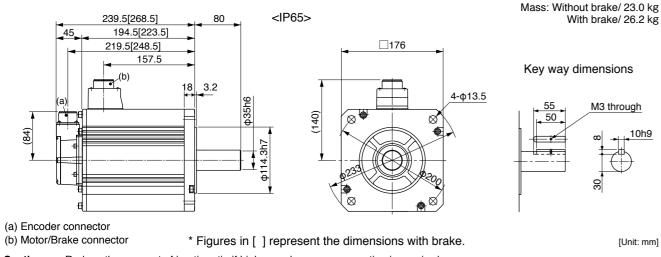
*1 Motor specifications:

*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



<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		
0	Ambient temperature *1		
20 %	midity	Ambient hu	
–20 °C to 65 °C (Max.tempera	nperature *2	Storage ten	
20 % te	midity	Storage hu	
50 W to 5.0 kW : Lower 6.0 kW to 15.0 kW : Lower	Motor only	Vibration	
	Motor only	Impact	
(except rotatin M *	IP65 *3	Enclosure rating (Motor only)	
(except rotating portion of o	11 03		
(except rotating portion of o	IP67 *3*4		
	Altitude		

- *1 Ambient temperature to be measured at 5 cm away from the motor
- *2 Permissible temperature for short duration such as transportation.
- tion where water proof performance is required such as continuous wash-down operation.
- *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.

- rotor moment of inertia.
- proportion to the square of (running speed/rated speed).
- Power supply voltage is AC115 V (at 100 V of the main voltage). voltage/115) relative to the value in the table.
- 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.

- rotor moment of inertia.
- proportion to the square of (running speed/rated speed).
- Power supply voltage is AC230 V (at 200 V of the main voltage). voltage/230) relative to the value in the table.
- vertical feeding, consult us or a dealer.

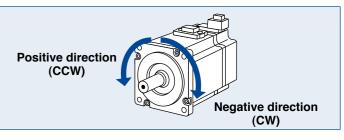
A5 Family Motor Specification Description

A5 Family

Conditions
°C to 40 °C (free from freezing)
to 85 % RH (free from condensation)
ture guarantee: 80 °C for 72 hours free from condensation ^{*5})
o 85 % RH (free from condensation ^{*5})
than 49 m/s ² (5 G) at running, 24.5 m/s ² (2.5 G) at stall than 24.5 m/s ² (2.5 G) at stall
Lower than 98 m/s ² (10 G)
MSMD, MHMD, MSMJ, MHMJ ng portion of output shaft and readwire end.)
ME (IP65 motor: 0.9 kW or more) utput shaft and connecting pin part of the motor connector and the encoder connector)
M * ME IP67 motor utput shaft and connecting pin part of the motor connector and the encoder connector)
Lower than 1000 m

*3 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5). Do not use these motors in applica-

*4 This condition is applied when the connector mounting screw are tightened to the recommended tightening torque.



If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/

• When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse

If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply

· When regeneration occurs continuously such cases as running speed frequently changes or

• If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/

· When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse

If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply

· When regeneration occurs continuously such cases as running speed frequently changes or

A5 Family **Motor Specification** Description

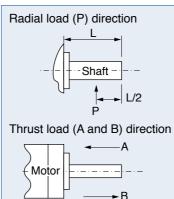
[At AC400 V of power voltage]

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 rightangle 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.

<Note>

- 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.

Specifications of Built-in Holding Brake

Motor series	Motor output	Static friction torque N⋅m	Rotor inertia × 10 ⁻⁴ kg·m ²	Engaging time ms	Releasing time ms	Exciting current DC A (at cool-off)	Releasing voltage DC V Exciting voltage DC V	Permissible work (J) per one braking	Permissible total work × 10 ³ J	Permissible angular acceleration rad/s ²
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
MSMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	750 W(400 V)	2.5 or more				0.7				
MSME	1.0 kW, 1.5 kW, 2.0 kW	7.8 or more	0.33	50 or less	15 or less (100)	0.81	2 V or more	392	490	10000
	3.0 kW	11.8 or more		80 or less			24 ±2.4			10000
	4.0 kW, 5.0 kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200	
	400 W(400 V), 600 W(400 V)	2.5 or more		50 or less	15 or less	0.7		392	490	
	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	2 V or more	1176	1500	
MDME	3.0 kW	16.2 or more		110 or less	(130)	0.9	24 ±2.4	1470	2200	
	4.0 kW, 5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000
	11.0 kW, 15.0 kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000
	1.5 kW	7.8 or more	4.7	80 or less	35 or less	0.83	2 V or more	1372	2900	
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	0.75	24 ±2.4	1470	1500	10000
	4.5 kW	31.4 or more	0.70			0.70	24 12.4	1110	2200	
	0.9 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79		1176	1500	10000
MGME	2.0 kW	24.5 or more		80 or less	25 or less (200)	1.3	2 V or more			5440
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	24 ±2.4	1372	2900	5440
	4.5 kW, 6.0 kW				50 or less					5000
MHMD MSMJ	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	1 V or more	137	44.1	30000
MHMJ	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000
MHME	1.5 kW	13.7 or more	1.00	100 or less	50 or less (130)	0.79	2 V or more	1176	1500	10000
	2.0 kW~5.0 kW		4.7	80 or less	25 or less (200)	1.3	24 ±2.4	1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000

· Releasing time values represent the ones with DC-cutoff using a varistor. Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)

Above values (except static friction torque, releasing voltage and excitation current) represent typical values.

Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.

• Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

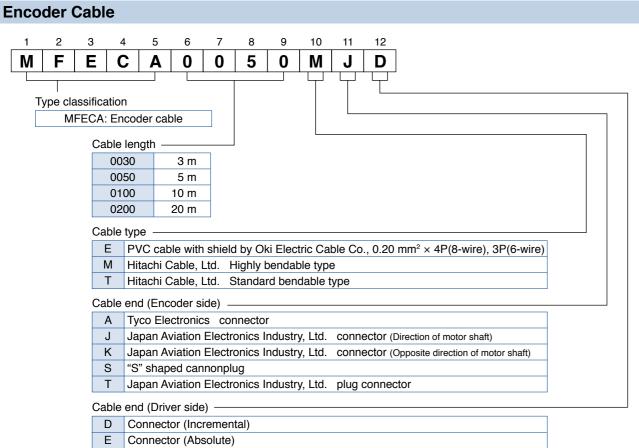
A5 Family

Series

ation

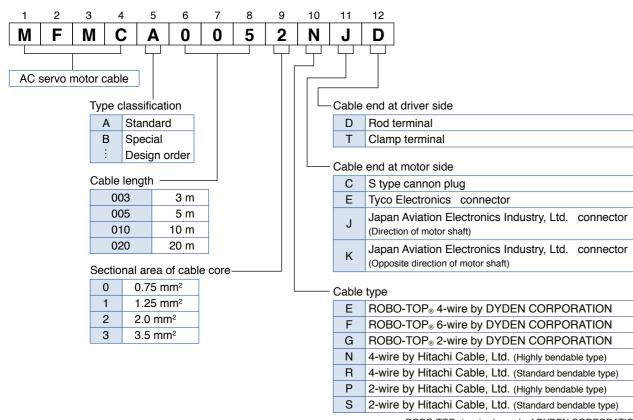
Options

Cable part No. Designation



M Connector (MSMD, MHMD)

Motor Cable, Brake Cable



ROBO-TOP® is a trade mark of DYDEN CORPORATION

Specifications of Motor connector

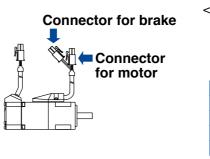
• When the motors of <MSMD, MHMD, MSMJ, MHMJ> are used, they are connected as shown below.

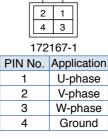
Connector: Made by Tyco Electronics (The figures below show connectors for the motor.)

Connector for encoder



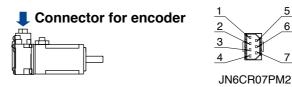


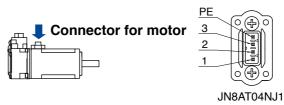


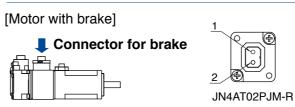


• When the motors of <MSME (50 W to 750 W (200 V))> are used, they are connected as shown below.

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.







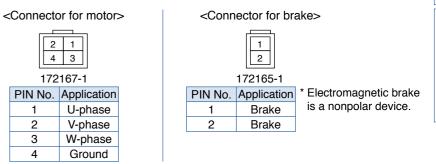
185

A5 Family **Options**

	PIN No.	Application				,
	1	NC	Γ	3	2	1
	2	PS		6	5	4
	3	PS		9	8	7
	4	E5V	L	17	2169	<u> </u>
al	5	E0V	4			solute
	6	FG(SHIELD)	1	7-DIL	ADS	Solute

PIN No.	Application	
1	BAT+	
2	BAT–	
3	FG(SHIELD)	
4	PS	
5	PS	
6	NC	
7	E5V	
8	E0V	
9	NC	

<Remarks> Do not connect anything to NC.



20-bit Incremental			17-bit A	Absolute
PIN No.	Application		PIN No.	Application
1	FG(SHIELD)		1	FG(SHIELD)
2	—		2	BAT–
3	E0V		3	E0V
4	PS		4	PS
5	—		5	BAT+
6	E5V		6	E5V
7	PS		7	PS

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.

PIN No.	Application	
1	Brake	* Electromagnetic brake is
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.

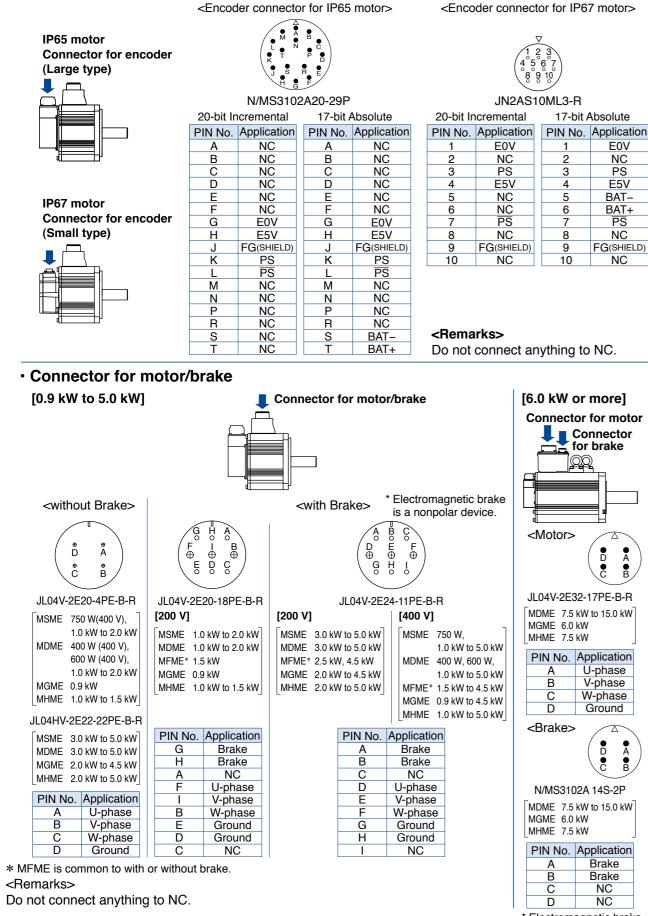
Options

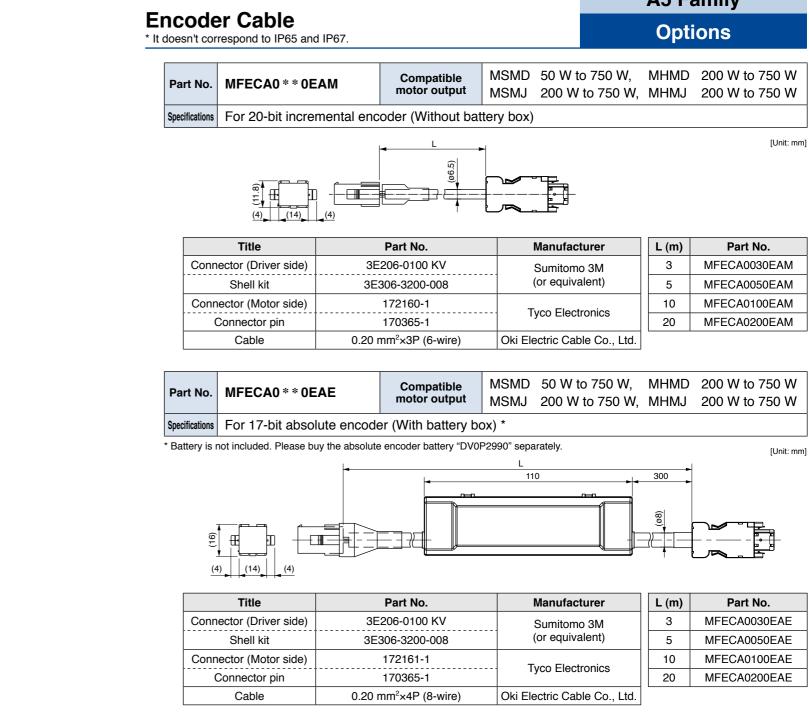
Specifications of Motor connector

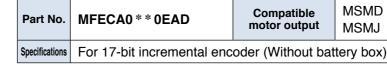
 When the motors of <MSME (750 W(400 V), 1.0 kW to 5.0 kW), MDME, MGME, MHME> are used, they are connected as shown below.

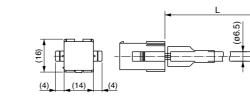
Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

Connector for encoder









Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAD
Connector (Motor side)	172161-1	Tugo Electronico	10	MFECA0100EAD
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAD
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

E0V

NC

PS

E5V

BAT-

BAT+

PS

NC

FG(SHIELD)

NC

Đ

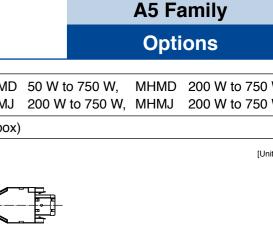
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Brake

Brake

NC

NC



	Manufacturer	L (m)	Part No.		
	Sumitomo 3M	3	MFECA0030EA		
	(or equivalent)	5	MFECA0050EA		
	Tyco Electronics	10	MFECA0050EA		
	Tyco Electronics	20	MFECA0200EA		
)	Oki Electric Cable Co., Ltd.				

Manufacturer	Γ	1 ()	Devt Ne
Manufacturer		L (m)	Part No.
 Sumitomo 3M		3	MFECA0030EAE
(or equivalent)		5	MFECA0050EAE
Tues Flastranias		10	MFECA0100EAE
 Tyco Electronics		20	MFECA0200EAE
Oki Electric Cable Co., Ltd.			



A5 Family

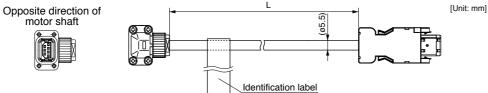
Options

Direction of motor shaft

đ

Encoder Cable * It doesn't correspond to IP65 and IP67.

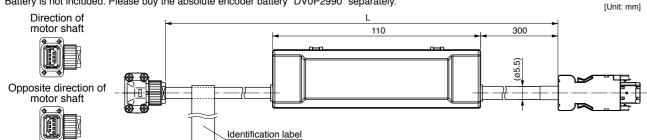
MFECA0 * * 0MJD (Highly bendable type, Direction of motor shaft) MSME MFECA0 * * 0MKD (Highly bendable type, Opposite direction of motor shaft) Compatible Part No. 50 W to 750 W motor output MFECA0 * * 0TJD (Standard bendable type, Direction of motor shaft) (200 V) **MFECA0** * * **0TKD** (Standard bendable type, Opposite direction of motor shaft) Specifications For 20-bit incremental encoder (Without battery box) * 17bit-use is possible



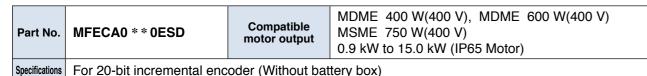
Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030MJD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050MJD
Connector (Motor side)	JN6FR07SM1	Japan Aviation	10	MFECA0100MJD
Connector pin	LY10-C1-A1-10000	Electronics Ind.	20	MFECA0200MJD
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.		

	MFECA0 * * 0MJE (Highly bendable type, Direction of motor shaft)		
Part No.	MFECA0 * * 0MKE (Highly bendable type, Opposite direction of motor shaft)	Compatible	MSME 50 W to 750 W
Part NO.	MFECA0 * * 0TJE (Standard bendable type, Direction of motor shaft)	motor output	(200 V)
	MFECA0 * * 0TKE (Standard bendable type, Opposite direction of motor shaft)		(200 V)
Specifications	For 17-bit absolute encoder (With battery box) *		

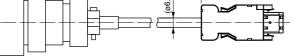
* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.



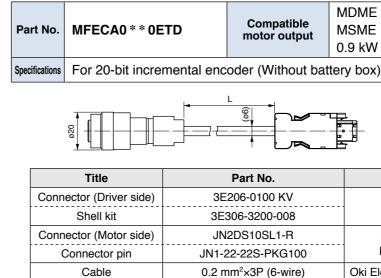
Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030MJE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050MJE
Connector (Motor side)	JN6FR07SM1	Japan Aviation	10	MFECA0100MJE
Connector pin	LY10-C1-A1-10000	Electronics Ind.	20	MFECA0200MJE
Cable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



[Unit: mm]

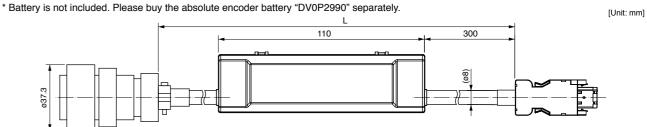


Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ESD
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	10	MFECA0100ESD
Cable clamp	N/MS3057-12A	Electronics Ind.	20	MFECA0200ESD
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		





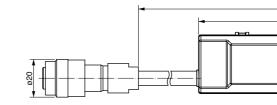
Specifications For 17-bit absolute encoder (With battery box) *



	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.		



* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETE
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	MFECA0100ETE
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETE
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

MDME 400 W(400 V), MDME 600 W(400 V), MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)

[Unit: mm]

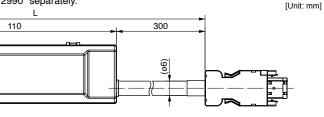
Manufacturer
 Sumitomo 3M (or equivalent)
 Japan Aviation Electronics Ind.
Oki Electric Cable Co., Ltd.

L (m)	Part No.
3	MFECA0030ETD
5	MFECA0050ETD
10	MFECA0100ETD
20	MFECA0200ETD

A5 Fam

0.9 kW to 5.0 kW (IP65 Motor)

MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)

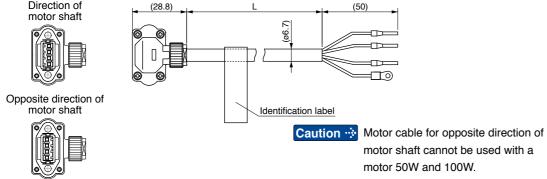


Motor Cable (without Brake)

Options

* It doesn't correspond to IP65 and IP67.

Part No.	MFMCA0 * * 0E		Applicable model	MSMD MSMJ	50 W to 750 200 W to 75	,	/HMC /HMJ) W to 750) W to 750	
				(ф11)						[Unit: mm]
	Title		Part No.		Manufa	acturer		L (m) Pa	art No.
	Connector		172159-1		Turon Elo	otronico		3	MFMC	A0030EED
(Connector pin		170366-1		Tyco Ele	ctronics		5	MFMC	A0050EED
	Rod terminal	ŀ	10.75-8GY		Phoenix	Contact		10	MFMC	A0100EED
Nylon i	nsulated round terminal		N1.25-M4		J.S.T Mfg.	. Co., Ltd		20	MFMC	A0200EED
	Cable	ROBO-TOP	600V 0.75n	nm ² 4-wire	DYDEN COF	RPORATI	ON			
	MFMCA0 * * 0	IJD (Highly ber	ndable type, Dire	ection of motor	shaft)		N	ISME	50 W to 7	50 W(200V)
	MFMCA0 * * 0	NKD (Highly bendable type, Opposit		posite direction	direction of motor shaft) Applicable		ble	ISME	200 W to	750 W(200V)
Part No.	MFMCA0 * * 0F	RJD (Standard	bendable type,	Direction of mo				ISME	50 W to 7	50 W(200V)
	MFMCA0 * * 0F	RKD (Standard	bendable type,	Opposite direc	posite direction of motor shaft)			ISME	200 W to	750 W(200V)
	Direction of	(28.8	3)	L	. (5	50) ,				[Unit: mm]

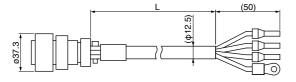


Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector	JN8FT04SJ1	Japan Aviation	3	MFMCA0030NJD
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.	5	MFMCA0050NJD
Rod terminal	AI0.75-8GY	Phoenix Contact	10	MFMCA0100NJD
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	20	MFMCA0200NJD
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.		

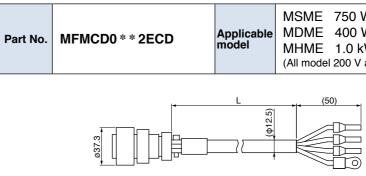
Part No. MFMCA0 * * 2ECD



[Unit: mm]

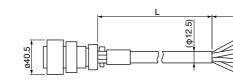


Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation	3	MFMCA0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0052ECD
Rod terminal	NTUB-2		10	MFMCA0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCA0202ECD
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	DYDEN CORPORATION		



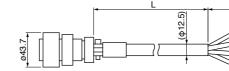
Title	Part No.	Manufacturer
Connector	JL04V-6A20-4SE-EB-R	Japan Aviation
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.
Rod terminal	NTUB-2	
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION





Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	JL04V-6A22-22SE-EB-R Japan Aviation		MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCE0052ECD
Rod terminal	NTUB-2		10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	2-M4 J.S.T Mfg. Co., Ltd.		MFMCE0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	N



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	JL04V-6A24-11SE-EB-R Japan Aviation		MFMCF0032ECD
Cable clamp	JL04-2428CK(17)-R Electronics Ind.		5	MFMCF0052ECD
Rod terminal	NTUB-2		10	MFMCF0102ECD
Nylon insulated round terminal	N2-M4	N2-M4 J.S.T Mfg. Co., Ltd.		MFMCF0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

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)

L (m)	Part No.
3	MFMCD0032ECD
5	MFMCD0052ECD
10	MFMCD0102ECD
20	MFMCD0202ECD

(200 V and 400 V commonness)

[Unit: mm]



MFME 1.5 kW(400 V), 2.5 kW(200 V and 400 V commonness)

[Unit: mm]



A5 Family

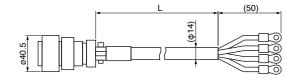
Options

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

Part No.	MFMCA0 * * 3ECT	Applicable model	MHME	3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW, MGME 200 V and 400 V commonness)	3.0kW to 5.0 kW 2.0kW to 4.5 kW
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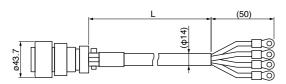
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation		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	Applicable	MFME 4.5 kW
i urtito	model	(200 V and 400 V commonness)

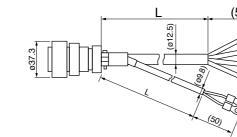
[Unit: mm]



Title	Part No. Manufacturer		L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R Japan Aviation		3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	JL04-2428CK(17)-R Electronics Ind.		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

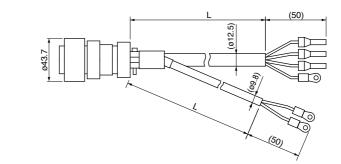
Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.





Title		Part No.	Manufacturer
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation
Cable clamp		JL04-2022CK(14)-R	Electronics Ind.
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated	Earth	N2-M4	
round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable		ROBO-TOP 600 V 0.75 $\rm mm^2 and$ ROBO-TOP 600 V 2.0 $\rm mm^2$ 6-wire	DYDEN CORPORATION





Title		Part No.	Manufacturer
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.
Rod terminal		NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated	Earth	N2-M4	
round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable		ROBO-TOP 600 V 0.75 $\rm mm^2 and$ ROBO-TOP 600 V 2.0 $\rm mm^2$ 6-wire	DYDEN CORPORATION

A5 Family

Options

MSME 1.0 kW to 2.0 kW(200 V), MDME 1.0 kW to 2.0 kW(200 V), MFME 1.5 kW(200 V), MHME 1.0 kW(200 V) to 1.5 kW(200 V) MGME 0.9 kW(200V)

[Unit: mm]

A5 Family



L (m)	Part No.
3	MFMCA0032FCD
5	MFMCA0052FCD
10	MFMCA0102FCD
20	MFMCA0202FCD

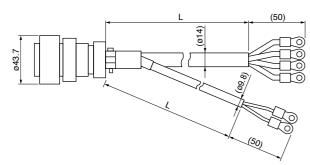
- MSME 750 W(400 V) to 2.0 kW(400 V), MDME 400 W(400 V) to 2.0 kW(400 V), MFME 1.5 kW(400 V), 2.5 kW(200 V/400 V), MGME 0.9 kW(400 V)
- MHME 1.0 kW(400 V), 1.5 kW(400 V), 2.0 kW(200 V/400 V)

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

Options

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

F	Part No.		Applicable model	MFME MGME	,	MHME	3.0 kW to 5.0 kW 3.0 kW to 5.0 kW	
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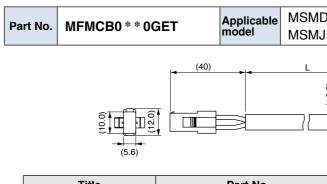


Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCA0033FCT
Cable clam	p	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCA0053FCT
Nylon insulated	Earth	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103FCT
round terminal	Brake	N1.25-M4	5.5.1 Wilg. Co., Ltd.	20	MFMCA0203FCT
Cable		ROBO-TOP 600 V 0.75 $\rm mm^2 and$ ROBO-TOP 600 V 3.5 $\rm mm^2$ 6-wire	DYDEN CORPORATION		

Brake Cable

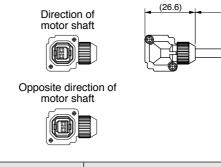
[Unit: mm]

* It doesn't correspond to IP65 and IP67.



Title	Part No.
Connector	172157-1
Connector pin	170366-1, 170362-1
Nylon insulated round terminal	N1.25-M4
Cable	ROBO-TOP 600 V 0.75 mm ² 2-w

	MFMCB0 * * 0PJT (Highly bendable type, Direction
Dort No.	MFMCB0 * * 0PKT (Highly bendable type, Opposi
Part No.	MFMCB0 * * 0SJT (Standard bendable type, Direct
	MFMCB0 * * 0SKT (Standard bendable type, Oppo



Title	Part No.	Manufacturer					
Connector	JN4FT02SJMR	Japan Aviation					
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.					
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.					
Cable	AWG22 2-wire (ø4.3)	Hitachi Cable, Ltd.					

Identification label

	A5 Family								
		Opt	io	ns					
ID 50 W to IJ 200 W to	-		-	o 750 W o 750 W	A				
(49.8)	(50)			[Unit: mm]	A5 Family				
					ESe				
Ma	nufacturer	L (m)		Part No.	Serie				
Tra		3	N	IFMCB0030GET	07				
Iyo	o Electronics	5	N	IFMCB0050GET					
J.S.T	Mfg. Co., Ltd.	10	N	IFMCB0100GET					
wire DYDEN	CORPORATION	20	N	IFMCB0200GET					
I					Info				
on of motor sha	aft)				nformation				
site direction of	f motor shaft)	- • • • • • • • • •		MSME	ion				
ection of motor	•	Applica model	DIE	50 W to 750 W					
	of motor shaft)	-		(200 V)					
(043)				[Unit: mm]					

L (m)	Part No.
3	MFMCB0030PJT
5	MFMCB0050PJT
10	MFMCB0100PJT
20	MFMCB0200PJT

Options

Interface Cable

Cable for Interface

Part No. DV0P4360

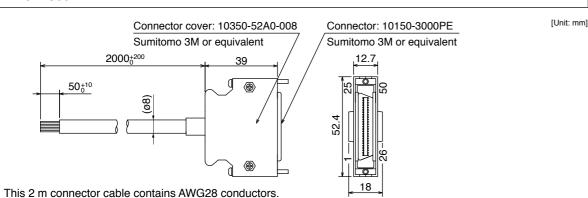


Table for wiring

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

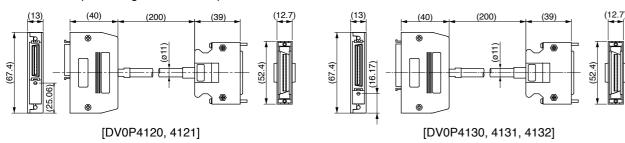
Part No. DV0P4120, 4121, 4130, 4131, 4132

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 \rightarrow A5I, A5 series (A4, A series) for position control
DV0P4131	MINAS V \rightarrow A5I, A5 series (A4, A series) for velocity control
DV0P4132	MINAS V → A5II, A5 series (A4, A series) for torque control

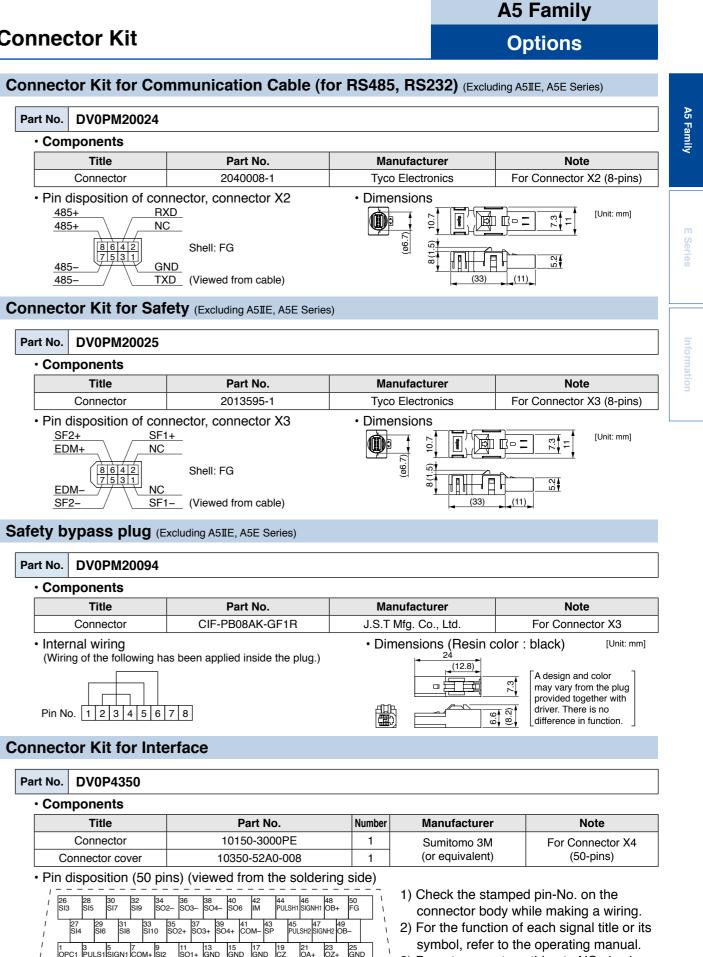
* For details of wiring, contact our sales department.

Converts 36-pin configuration to 50-pin.

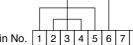


Connector Kit

Part No. DV0PM20024 Components Title Part No. 2040008-1 Connector Pin disposition of connector, connector X2 RXD 485+ 485+ NC 8642 Shell: FG 7 5 3 1 GND 485 485-TXD (Viewed from cable)



Pa	art No.	DV0PM20094									
	• Con	ponents									
		Title	Part No.								
		Connector	CIF-PB08AK-GF1R								
	 Inter 	nal wiring									



Connector Kit for Interface

Pa	rt N	o.	C	٥V	0P	94:	35	0															
	۰Co	om	np	or	ner	nts	3																
				T	ītle	е											Pa	rt	No).			
			С	on	ne	ctc	or								1	01	50)-3	00	0F	ΡE		
		С	oni	ne	cto	r c	ov	er							10)35	50-	52	2A0)-0	30	}	
	• Pi	n c	dis	p	osit	tio	n	(5	0	pi	ns	5) ((vi	ev	ve	d	fro	m	th	ne	so		le
	1 1	26 SI3		28 SI5	10.02	30 SI7	60.62	32 SI9		34 SO	2–	36 SO	3–	38 SO	4–	40 SO	6	42 IM		44 Pul	.SH1	46 Sigi	NH1
	I I		27 SI4		29 SI6	10.00	31 SI8		33 SI1	0	35 SO	2+	37 SO	3+	39 SO	4+	41 CO	м–	43 SP		45 PUL	SH2	47 SIG
		1 OP			LS1						2	11 SO	1+	13 GN	D	15 GN	D	17 GN	D	19 CZ		21 OA	
	i	_	2	~	4 PI II	62	6	NO	8 ©11		10	1	12	6	14 CDI	D/	16 D A	ті	18 N /	TI	20 NC		22

<Remarks>

[Unit: mm]

· 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".

I/TRO

OZ-

symbol, refer to the operating manual. 3) Do not connect anything to NC pins in the above table.

Connector Kit for External Scale (Excluding A5IIE, A5E Series)

Part No. DV0PM20026

Components

Title	Part No.	Manufacturer	Note
Connector	MUF-PK10K-X	J.S.T Mfg. Co., Ltd.	For Connector X5 (10-pins)

Dimensions

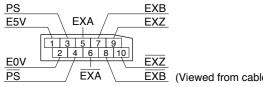
[Unit: mm]

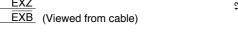
<u>5.4</u> 5.8

[Unit: mm]

[Unit: mm]

• Pin disposition of connector, connector X5





Connector Kit for Encoder

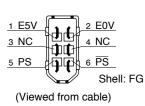
Part No. DV0PM20010

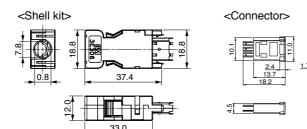
Components

Title	Part No.	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	For Connector X6	
Shell kit	3E306-3200-008	(or equivalent)		

Dimensions

• Pin disposition of connector, connector X6





(32)

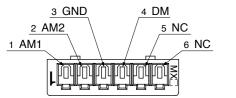
Connector Kit for Analog Monitor Signal

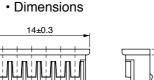
Part No. DV0PM20031

Components

Title	Part No.	Number	Manufacturer	Note
Connector	510040600	1	Molex Inc	For Connector V7 (C nine)
Connector pin	500118100	6		For Connector X7 (6-pins)

Pin disposition of connector, connector X7





للأب الإستاني الأستان 12.9±0.3



Connector X1: use with commercially available cable.

Configuration of connector X1: USB mini-B

3.35±0.3



Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V: Single row type)

Components

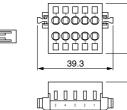
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1		For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	

Part No. DV0PM20033 (For A-frame to D-frame 200 V: Double row type)

Components

Components							
Title	Part No.	Number	Manufacturer		No	ote	
Connector	05JFAT-SAXGSA-C	1		4	For Connector XA		
Handle lever	J-FAT-OT	2	J.S. I Mig. Co., Li	J.S.T Mfg. Co., Ltd. Fo		onnector XA	
Dimensions		Ť	Driver part No.	Pov	ver supply	Rated input current	
				Sir	ngle 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	
[Unit: mm]		27.6	MADHT1507 *** MADKT1507 ***	Single	phase/3-phase 200 V	2.4 A/1.3 A	
		MBDHT2110 *** MBDKT2110 ***	Sir	ngle phase 100 V	4.3 A		
 * 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. 			MBDHT2510 *** MBDKT2510 ***	Single	phase/3-phase 200 V	4.1 A/2.4 A	
			MCDHT3120 *** MCDKT3120 ***	Sir	ngle phase 100 V	7.6 A	
			MCDHT3520 *** MCDKT3520 ***			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	
			I				

• D



Part No. DV0PM20044 (For E-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-L	1		For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	

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		

A5 Family

200

Options

Connector Kit

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	J.S.T Mfg. Co., Ltd.	For Connector XD
Handle lever	MJFAT-0T	1		

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		For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XC

Connector Kit for Motor Connection (Driver side)

Part No. DV0PM20034 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	06JFAT-SAXGF	1	J.S.T Mfg. Co., Ltd.	For Connector XB
Handle lever	J-FAT-OT	2		* 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		For Connector XB
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	

Part No. DV0PM20054 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note	
Connector	03JFAT-SAXGSA-M	1		For Connector VP	
Handle lever	J-FAT-OT-L 2 J.S.T Mig. Co	J.S.T Mfg. Co., Ltd.	For Connector XB		

Connector Kit

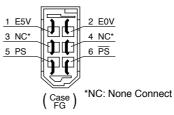
* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Connector Kit for Motor/Encoder Connection

Part No.	DV0P4290	Applicable model	MS (ab:
• Com	ponents		

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	3E206-0100 KV 1 Sumitomo 3M		For Connector V6 (6 pipe)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Connector	172161-1	1	Tugo Electronico	For Encoder cable	
Connector pin	170365-1	9	Tyco Electronics	(9-pins)	
Connector	172159-1	1	Tyco Electronics	For Motor cable	
Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

· Pin disposition of connector, · Pin disposition of connector connector X6 for encoder cable



r-			: -
	1	2	
i	BAT+	BAT-	
	4 PS	$\frac{5}{PS}$	
	7	8	
	E5V	E0V	
-			-

* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

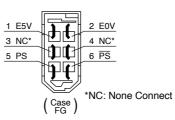
	Part No.	DV0P4380		Applicable model	MS MS (inc
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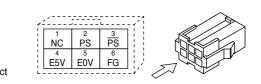
Components

· · · · ·					
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV			For Connector X6 (6-pins)	
Shell kit	3E306-3200-008				
Connector	172160-1	1	Tyco Electronics	For Encoder cable	
Connector pin	170365-1	6		(6-pins)	
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



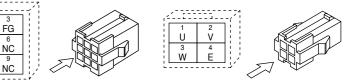


A5 Family

Options

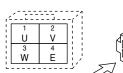
SMD 50 W to 750 W, MHMD 200 W to 750 W osolute encoder type)

 Pin disposition of connector for motor cable



SMD 50 W to 750 W, MHMD 200 W to 750 W MJ 200 W to 750 W, MHMJ 200 W to 750 W cremental encoder type)

> Pin disposition of connector for motor cable





A 5	Family

Options

Connector Kit * When IP65 or IP67 are necessary, the customer must give appropriate processing.

Part No. DV0PM20035

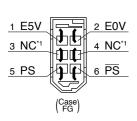
Applicable model MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

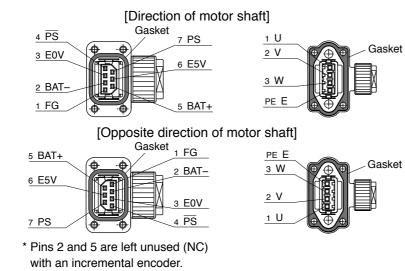
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN6FR07SM1	JN6FR07SM1 1 Japan Avia		For Encoder cable	
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.	(7-pins)	
Motor 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



Remarks . Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

Part No.		Applicable model	<ip67 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW, MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)</ip67>	Without brake	
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M			
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	E. E. de de de la	
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 coble	
Cable clamp	JL04-2022CK(14)-R	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".

Part No.	DV0P4310	Applicable model	<ip65 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</ip65>				Without brake
• Con	nponents						
	Title Part No.		rt No.	Number	Manufacturer	Note	
Co	nnector (Driver side)	3E206-0100 KV		1	Sumitomo 3M (or equivalent)	For Connector VC	(C mine)
	Shell kit	3E306-3200-008		1		For Connector X6 (6-	(o-pins)
E	Encoder connector	N/MS31	06B20-29S	1	Japan Aviation	For Freedor e	abla
	Cable clamp		N/MS3057-12A		Electronics Ind.	For Encoder cable	
	Motor connector		N/MS3106B20-4S		Japan Aviation	Ear Matar ag	bla
	Cable clamp		N/MS3057-12A		Electronics Ind.	For Motor cable	

			<ip67 m<="" th=""><th>notor></th><th></th><th></th></ip67>	notor>		
Dart No	DV0PM20037	Applicable	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW
Part NO.	DV0F1V120037	model	MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 4.5 kW
			(All mode	I 200 V and 400 V comm	onness)	

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	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	JN2DS10SL1-R	1	Japan Aviation	E. E. e. e.	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation	Far Matar askis	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

				IP65 moto		
Part No.	DV0P4320	Applicable model	MSME	3.		
			model	MHME	2.	

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	3E206-0100 KV 1		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Freedor askie	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor coblo	
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 Freedor coble
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable

tor>

tor>			Without
.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	brake
.0 kW to 5.0 kW,	MGME	2.0 kW to 4.5 kW	Didke

A5 Family

Without

brake

Options

Connector Kit * When IP65 or IP67 are necessary, the customer must give appropriate processing.

Part No.	DV0P4330	Applicable model	<ip65 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip65>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	0100 KV 1 Sumitomo 3M			
Shell kit	3E306-3200-008	-008 1 (or equivalent)		For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Freedor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-18S	1	Japan Aviation	For Motor coblo	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1 (or equivalent)			
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Freedor coble	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Motor poblo	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	For Motor cable	

Part No.	DV0P4340	Applicable model	<ip65 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 3.0 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 3.0 kW</ip65>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Freedor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B24-11S	1	Japan Aviation	For Motor coble	
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".

Part No.	DV0PM20056	Applicable model	<ip67 m<br="">MDME MGME</ip67>	notor> 7.5 kW t 6.0 kW,	o 15.0 kV MHME	V 7.5 kW
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Components

	1			1	
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pipe)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector JN2DS10SL1-R		1	Japan Aviation	Fau Franklau anhla	
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.		

* 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.

			<ip67 motor=""></ip67>
Part No.	DV0PM20057	Applicable	MDME 7.5 kW to 15.0 kW
		model	MGME 6.0 kW, MHME 7.5 kW

Components

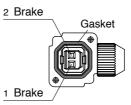
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C pipe)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Proke coble	
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake cable	

* Cable cover size: Ф22 to Ф25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

Part No.	DV0PM20040	Applicable model	MSME	50 V	V to 75	0 W	
• Con	nponents						
	Title	Pa	rt No.		Number	Manufacturer	Note
	Connector	JN4FT	02SJM-R		1	Japan Aviation	For brake cable
	Socket contact	ST-TMH-	S-C1B-350	00	2	Electronics Ind.	FUI DIARE CADIE

· Pin disposition of connector for brake cable [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".

[Opposite direction of motor shaft]

Brake Gaske 2 Brake

Without brake

A5 Family

With brake **Options**

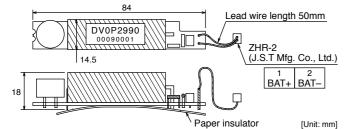
Battery for Absolute Encoder

* A5IIE, A5E series does not support to absolute encoder.

Battery for Absolute Encoder

Part No. DV0P2990

Lithium battery: 3.6 V 2000 mAh

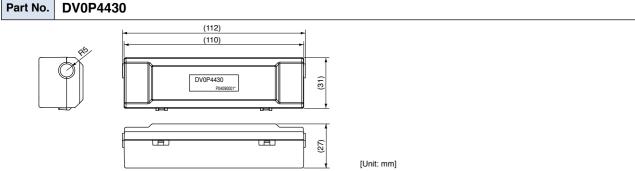


<Caution>

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 *





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.

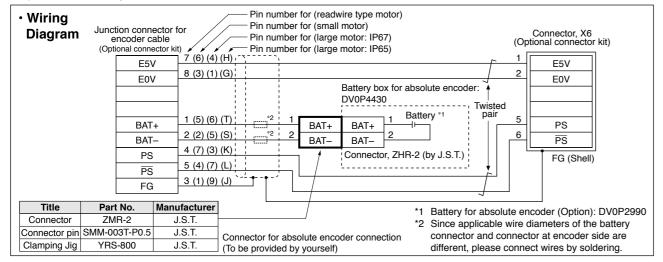
<Caution>

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.

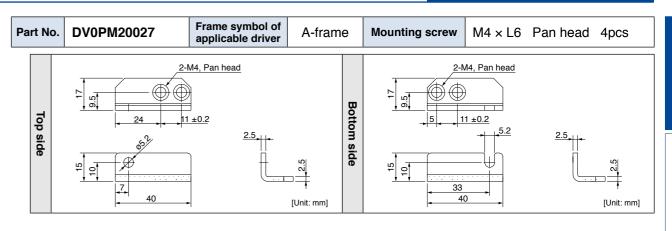
Refer to the instruction manual of the battery for handling the battery.

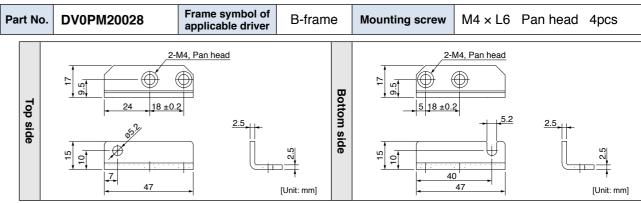
Installation Place of Battery

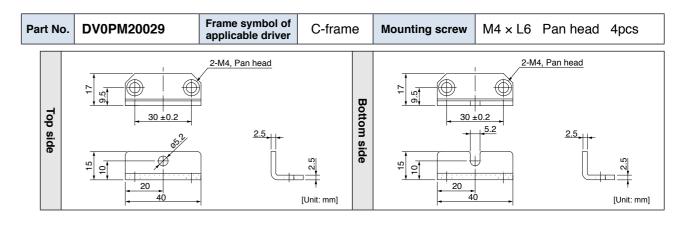
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable gas, grinding oil, oil mist, iron powder or chips and etc.
- 3) Well-ventilated and humid and dust-free place.
- 4) Vibration-free place

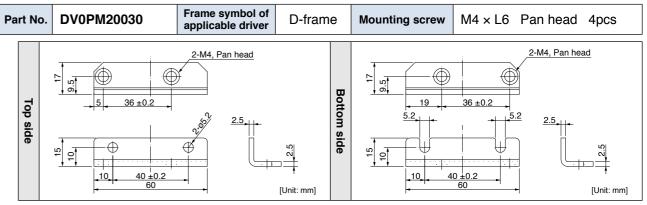


Mounting Bracket







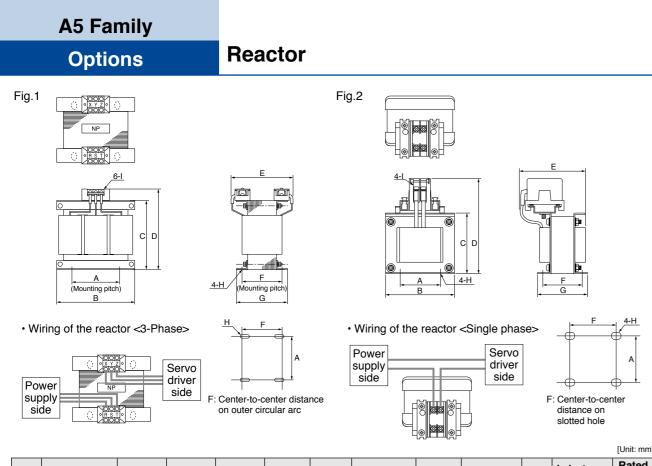


<Caution>

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).

A5 Family Options

A5 Family



	Part No.	Α	в	с	D	E (Max)	F	G	н	I	Inductance (mH)	Rated current (A)
	DV0P220	65±1	125±1	(93)	136 _{Max}	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3
	DV0P221	60±1	150±1	(113)	155Max	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. I	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)	160 _{Max}	155	84+3/-0	100±2	4-7φ×12	M5	0.848	16
	DV0P225	60±1	150±1	(113)	160Max	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 utmost extent

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

External Regenerative Resistor

			Spec	ifications				
Part No.	Manufacturer's	ufacturer's		cable core outside Weight –		power nce) ^{*1}	Activation	
Part NO.	part No.	nesistance	diameter	weight	Free air	with fan 1 m/s	temperature of built-in thermal protector	
		Ω	mm	kg	w	W		
DV0P4280	RF70M	50		0.1	10	25		
DV0P4281	RF70M	100	1	0.1	10	25		
DV0P4282	RF180B	25		0.4	17	50	140±5 °C	
DV0P4283	RF180B	50	φ1.27 / AWG18 \	0.2	17	50	B-contact	
DV0P4284	RF240	30	stranded	0.5	40	100	Open/Close capacity	
DV0P4285	RH450F	20	\ wire /	1.2	52	130	(resistance load)	
DV0PM20048	RF240	120		0.5	35	80	1 A 125 VAC 6000 times	
DV0PM20049	RH450F	80	1	1.2	65	190	0.5 A 250 VAC 10000 times	
DV0PM20058	RH450F × 6	3.3	_ *2	16	_ *3	780		
DV0PM20059	RH450F × 6	13.3	- *2	16	- ^{* 3}	1140		

Manufacturer : Iwaki Musen Kenkyusho

*1 Power with which the driver can be used without activating the built-in thermal protector. A built-in thermal fuse and a thermal protector are provided for safety. power supply voltage or load.

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed 100 °C.

Attach the regenerative resistor to a nonflammable material such as metal. Cover the regenerative resistor with a nonflammable material so that it cannot be directly touched. Temperatures of parts that may be directly touched by people should be kept below 70 °C.

*2 Terminal block with screw tightening torgue as shown below.

T1, T2, 24 V, 0 V, E : M4 : 1.2 N·m to 1.4 N·m

R1, R2 : M5 : 2.0 N·m to 2.4 N·m

Use the cable with the same diameter as the main circuit cable. (Refer to P.19).

*3 With built-in fan which should always be operated with the power supply connected across 24 V and 0 V.

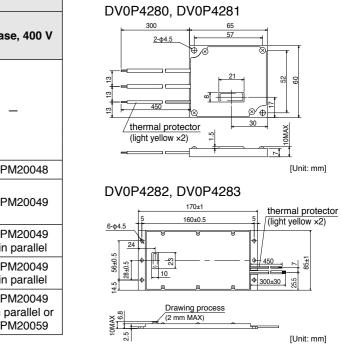
		Power supply	
Frame	Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-pha
А	DV0P4280	DV0P4281 (50 W, 100 W) DV0P4283 (200 W)	
В	DV0P4283	DV0P4283	
С	DV0P4282	DV0F4203	
D		DV0P4284	DV0P
E		DV0P4284 × 2 in parallel or DV0P4285	DV0P
F	_	DV0P4285 × 2 in parallel	DV0P × 2 in
G		DV0P4285 × 3 in parallel	DV0P × 3 in
Н		DV0P4285 × 6 in parallel or DV0PM20058	DV0P × 6 in p DV0P

A5 Family Options

A5 Family

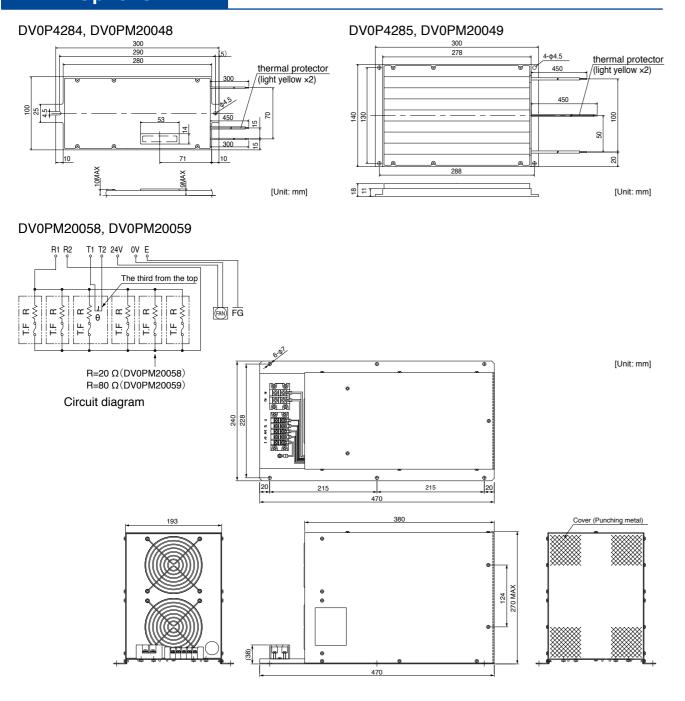
The circuit should be so designed that the power supply will be turned off as the thermal protector operates.

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit,



Options

External Regenerative Resistor



Surge Absorber for Motor Brake

	Motor	Part No.	Manufacturer
MSMD	50 W to 750 W	Z15D271	SEMITEC Corporation
MSMJ	200 W to 750 W	or	or NIPPON CHEMI-CON
	50 W to 750 W	TNR15G271K	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
NUNE	4.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation
	11 kW, 15 kW		
MFME	1.5 kW	NVD07SCD082	KOA Corporation
	2.5 kW, 4.5 kW		
MGME	0.9 kW to 6.0 kW	Z15D151	SEMITEC Corporation
MHMD MHMJ	200 W to 750 W	Z15D271 or TNR15G271K	SEMITEC Corporation or NIPPON CHEMI-CON CORPORATION
	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation
MHME	2.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation
	1		

<Caution when using external regenerative resistor>

Regenerative resistor gets very hot.

Configure a circuit so that a power supply shuts down when built-in thermal protector of the regenerative resistor works. Because it is automatic reset thermal protector, please apply a self-holding circuit to the outside in order to maintain safety in case of sudden activation. During the failure of the driver, the surface temperature of the regenerative resistor may exceed the operating temperature before thermal protector starts to work.

Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.

- Be attached the regenerative resistance to non-combustible material such as metal.
- Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.
- Do not install the regenerative resistor near flammable materials.

A5 Family

Options

Options

List of Peripheral Equipments

Manufacturer	Tel No. / Home Page	Peripheral components	
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker	
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay	
lwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor	
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm		
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html	Surge absorber for holding brake	
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/		
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/		
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	Noise filter for signal lines	
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/		
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter	
Japan Aviation Electronics Industry, Ltd.	+81-3-3780-2717 http://www.jae.co.jp/e-top/index.html		
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp		
J.S.T. Mfg. Co., Ltd.	+81-45-543-1271 http://www.jst-mfg.com/index_e.php	Connector	
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/		
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html		
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable	
DR. JOHANNES HEIDENHAIN GmbH	+81-3-3234-7781 http://www.heidenhain.de/de_EN/company/contact/		
Fagor Automation S.Coop.	+34-943-719-200 http://www.fagorautomation.com		
Magnescale Co., Ltd.	+81-463-92-7971 http://www.mgscale.com/mgs/language/english/	Eutomal casta	
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/	External scale	
Nidec Sankyo Corporation	+81-3-5740-3006 http://www.nidec-sankyo.co.jp/		
Renishaw plc	+44 1453 524524 www.renishaw.com		
Schaffner EMC, Inc.	+81-3-5712-3650 http://www.schaffner.jp/	Natar file	
TDK-Lambda Corporation	+81-3-5201-7140 http://www.tdk-lambda.com/	Noise filter	

* The above list is for reference only. We may change the manufacturer without notice.

MEMO

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Compact Servo Only for Position Control.

Ultra compact position control type

MINAS E Series



Best Fit to Small Drives

Further evolution in down-sizing, by 47 % in size. (Note)
 Exclusively designed for position control.

(Note) Compared to MUDS043A1

Easy to Handle, Easy to Use

- DIN-rail mounting unit (option) improves handling/installation.
- User-friendly Console makes the setup easy.
- High functionality Real-Time Auto-Gain Tuning enables adjustment-free operation.



High-Speed Positioning with Resonance Suppression Filters

• Built-In notch filter suppresses resonance of the machine.

Built-in adaptive filter detect resonance frequency and suppress vibration.

Smoother operation for Low Stiffness Machine

• Damping control function suppresses vibration during acceleration/deceleration

Motor Line-up...... Model Designation..... Overall Wiring Driver and List of App Driver Specifications Standard Wiring Exa Encorder Wiring Diar Control Circuit Stanc Dimensions of Drive Motor....

Features ..

Specifications/Mode Dimensions of Mote Motors with Gear Re

Options

Setup Support Softw Cable part No. Desi Cable Set Encoder Cable Motor Cable Brake Cable Connector Kit Interface Cable Communication Cat Console DIN Rail Mounting U External Regenerati Reactor Surge Absorber for List of Peripheral Co

Contents

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Features

Easy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

2. Further Reduction of Vibration

Adaptive filter (Note1)

Notch filter (Note1)

1-channel notch filter is equipped in the driver indepen-

of the machine which has multiple resonance points can

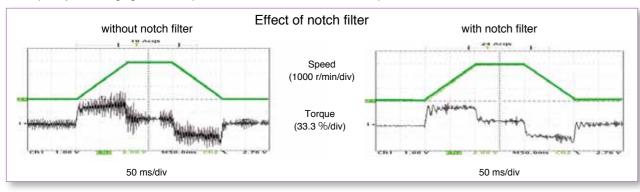
DIN-rail mounting unit (option)

DIN-rail mounting unit allows parallel mounting with small

control devices such as PLC.

Easy to mount and easy to dismount.

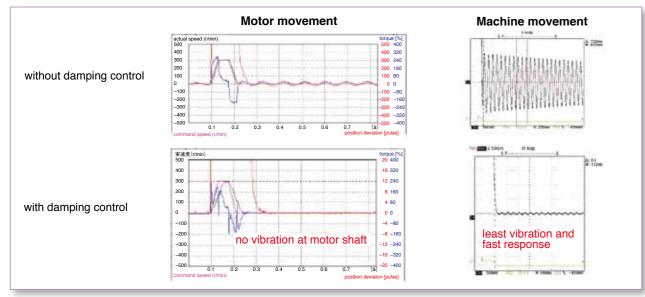
- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain tuning.
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.
- dent from adaptive filter.
 Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise



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



(Note1) Select at positioning action mode

 At high speed positioning mode (Pr02=0) Select either one of notch filter, damping control or high-functionality real-time auto- gain tuning. Not possible to use them all at the same time. Adaptive filter cannot be used. At high-functionality positioning mode (Pr02=1) All of notch filter, damping control, high-functionality real-time auto-gain tuning and adaptive filter can be used at the same time.

3. Further Flexibility and Multiplicity

Console (Option)

- You can set up parameters, copy and make a JOG run.
- Convenient for maintenance at site.
- Refer to P.241, Options.

Command control modes

- Offers 2 command modes, "Position control" and "Internal velocity control".
- You can make a 4-speed running at preset values with parameter at internal velocity control mode.

Inrush current suppressing function

- Inrush suppressing resistor, which prevent the circuit breaker shutdown of the power supply caused by inrush current at power-on, is equipped in this driver.
- Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give load to the power line.

Regeneration discharging function

- Discharges the regenerative energy with external resistor, where energy is generated while stopping the load with large moment of inertia, or use in up-down operation, and is returned to the driver from the motor.
- No regenerative resistor is installed in the driver.
- It is highly recommended to install an external regenerative resistor (option).

Built-in dynamic brake

- You can select the dynamic brake action which short the servo motor windings of U, V and W, at Servo-OFF, CW/ CCW over- travel inhibition, power shutdown and trip.
- You can select the action sequence depending on the machine requirement.

Setup support software (Option)

 With the setup support software, "PANATERM" via RS232 / RS485 communication port, you can monitor the running status of the driver and set up parameters.
 Note) Refer to P.236 for setup support software.

Key-way shaft and tapped shaft end

- Easy pulley attachment and easy maintenance
- Attache screw to the tapped shaft to prevent key or pulley from being pulled out.

Wave-form graphic function

- With the setup support software, "PANATERM", you can monitor the "Command speed", "Actual speed", "Torque", "Position deviation" and "Positioning complete signal".
- Helps you to analyze the machine and shorten the setup time.

Note) Refer to P.236 for setup support software.

Frequency analyzing function

- You can confirm the response frequency characteristics of total machine mechanism including the servo motor with the setup support software, "PANATERM".
- Helps you to analyze the machine and shorten the setup time.

Note) Refer to P.236 for setup support software.

Torque limit switching function

- You can select 2 preset torque limit value from external input.
- Use this function for tension control or press-hold control.

Conformity to CE and UL Standards







Subject		Standard conformed					
Motor	IEC60034-1	IEC60034-5 UL1004	Conforms to				
WIOTON		CSA22.2 No.100	Low-Voltage				
	EN50178	UL508C CSA22.2 No.14	Directives				
	EN55011	Radio Disturbance Characteristics of					
		Industrial, Scientific and Medical (ISM)					
		Radio-Frequency Equipment					
	EN61000-6-2	Immunity for Industrial Environments					
Motor	EC61000-4-2	Electrostatic Discharge Immunity Test	Conforme to				
and	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	Conforms to references				
unver	IEC61000-4-4	Electric High-Speed Transition	by EMC Directives				
		Phenomenon/Burst Immunity Test	Directives				
	IEC61000-4-5	Lightening Surge Immunity Test					
	IEC61000-4-6	High Frequency Conduction Immunity Test					
	IEC61000-4-11	Instantaneous Outage Immunity Test					
IEC : II	nternational Elec	trotechnical Commission					
EN : E	Europaischen No	rmen					
EMC : E	Electromagnetic (Compatibility					
	UL : Underwriters Laboratories						
CSA : C	Canadian Standa	rds Association					
Pursuar	nt to at the direct	ive 2004/108/EC,article 9(2)					
	nic Testing Centr						
Panaso	nic Service Euro	pe,					

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.

MINAS E series

Motor Line-up

		Rated rotational	Rotary	encoder	Brake	Gear				
Motor series	Rated output (kW)	speed (Max. (speed) (r/min)	2500 P/r incremental	17bit absolute/ incremental	Holding	High precision	UL/ CSA	Enclosure	Features	Applications
MUMA										
	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

Model Designation

Servo Motor

M U M A 5 A Z P 1 S ** Symbol Type MUMA Ultra low inertia (50 W to 400 W) Motor rated output Symbol Rated output Voltage specifications 5A 50 W Specifications 01 100 W Symbol 02 200 W 1 100 V 04 400 W 2 200 V 100 V/200 V common Ζ (50 W only)

Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

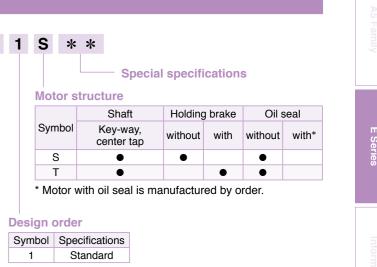
Motor with gear reducer

M U M A 0 1 1 P 3 1 N

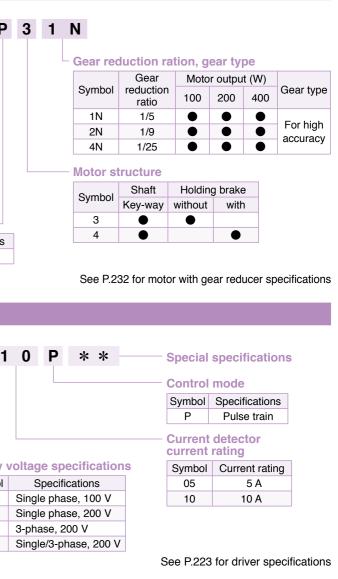
				Motor r	ated o	output	
Symbol	Туре			Symbol	Rated	d output	
	Ultra low in	ertia	1	01	10	W 0	1
MUMA	(100 W to 40	(W 00		02	20	W 0	
				04	40	W 0	1
			_	Specific]	
			_	specific		1	
		1		100	V]	
		2		200	V]	
Rotary e	encoder spe	cifica	ti	ons —			
Symbol	Format	F	Pu	Ise count	s Res	solution	Wi
Р	Incrementa	l	1	2500 P/r	1	0000	Ę

Servo Driver

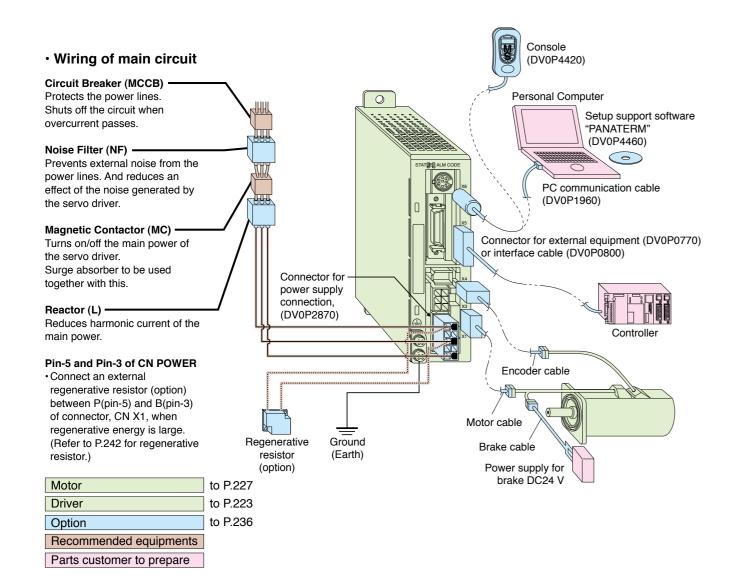
	Μ	Κ	D	Ε	Т	1	3	1
Frame s	ymbol ——							
Symbol	Frame							
MKDE	E series, K-fra	ame						
MLDE	E series, L-fra	ime						
							Supp	ly v
	Power Max. c			tina			Symb	loc
	Symbo		urrent				1	
	T1		10	U			2	
		_					3	
	T2		15	A			5	
								_



See P.227 for motor specifications



Overall Wiring/ Driver and List of Applicable Peripheral Equipments



List of recommended peripheral equipments

_	Мо	otor	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	(3 A)		10 A (3P+1a)			
100 V		200 W	0.5 kVA	(10 A)		(or rra)			
		50 W	0.3 kVA						
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)			Awaro		
	1	50 W	0.0 14/4						
3-phase		100 W	0.3 kVA	(5 A) 10 A			(5 A) 10 A		
200 V		200 W	0.5 kVA			(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, 🖲 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 terminal wiring.

Use a cable for ground with diameter of 2.0 \mbox{mm}^2 (AWG14) or larger.

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 Note) 2		ake Cable Note) 2	External Regenerative Resistor	Reactor	Noise Filter			
Single	50	MUMA5AZP1 🗌	227	MKDET1105P	226 (K)						DV0P227				
phase	100	MUMA011P1 🗌	227	MKDET1110P	226 (K)					DV0P2890	DVUFZZI				
100 V	200	MUMA021P1	227	MLDET2110P	226 (L)						DV0P228				
	50	MUMA5AZP1	229	MKDET1505P	P 226 (K)	P 226 (K)			(K)						
Single	100	MUMA012P1	229	MKDET1505P	226 (K)										
phase 200 V	200	MUMA022P1	229	MLDET2210P	226 (L)	MFECA0 * * 0EAM	MFMCA0 * *0AEB								
	400	MUMA042P1	229	MLDET2510P	226 (L)			MFMCE	B0 * * 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 1	400		000	MLDET2510P	000 (1)										
	400	MUMA042P1	229	MLDET2310P	226 (L)										

Note) 1 Motor model number suffix: \Box

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.

	.ge				Carrying	
	Options					
Console				DV0P4420	241	
Setup Support			Japanese	D) (0D (100	000	
Software, PANATERM			English	DV0P4460	236	
RS232 Commu (for Connection				DV0P1960	241	
Interface Cable	;			DV0P0800	241	
Connector Kit f	or Ext	eri	nal Equipment	DV0P0770	240	
Connector Kit f	or Mot	or	and Encoder	DV0P3670	239	
Connector Kit f	or Driv	/ei	Power Supply	DV0P2870	239	
Encoder Cable			MFECA0 * *	0EAM	238	
Motor Cable			MFMCA0 * *	238		
Brake Cable			MFMCB0 * *	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	100	V	50 Ω 10 W	DV0P2890	0.40	
Regenerative Resistor	200	V	100 Ω 10 W	DV0P2891	242	
			100 V	DV0P227		
Reactor			100 V	DV0P228	243	
			200 V	DV0P220		
Noise Filter				DV0P4160	256	
			gle phase 0 V, 200 V	DV0P4190	256	
	3	s-p	hase 200 V	DV0P1450		
Noise Filter for	Noise Filter for Signal Wire					

Carrying page

(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

THI

Series

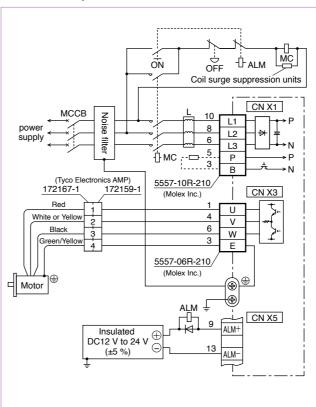
Driver Specifications

	_	Sing		10.9/					
	글	Oing	le phase, 100 V	Single phase, 100 V to 115 V $^{+10 \%}_{-15 \%}$ 50 Hz/60 Hz					
	Input power	Sing	le phase, 200 V	Single phase, 200 V to 240 V +10 % -15 % 50 Hz/60 Hz					
	ver	3-ph	ase, 200 V	3-phase, 200 V to 240 V +10 % -15 % 50 Hz/60 Hz					
	En	Tem	perature	Operating : 0 °C to 55 °C, Storage : -20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>					
	Environment	Hum	nidity	Both operating and storage : 90 %RH or less (free from condensation)					
	nme	Altitu	ude	1000 m or lower					
	nt	Vibra	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)					
	With		voltage	Should be 1500 VAC (Sensed current: 20 mA) for 1 minute between Primary and Ground.					
		trol me		IGBT PWM Sinusoidal wave drive					
			edback	2500 P/r (10000 resolution) incremental encoder					
Signal	Control	Inpu Outp		 7 inputs (1) Servo-ON, (2) Alarm clear and other inputs vary depending on the control mode. 4 outputs (1) Servo alarm, (2) Alarm, (3) Release signal of external brake and other outputs vary depending on the control mode. 					
+									
ol For	Pulse	Inpu		2 inputs Supports both line driver I/F and open collector I/F.4 outputs Feed out the encoder pulse (A, B and Z-phase) in line driver.					
		Outp		Z-phase pulse is also feed out in open collector.					
	Con	nmunio	cation function RS232	1 : 1 communication to a host with RS232 interface is enabled.					
	Disp	olay LE	Ð	(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)					
	Reg	enerat	tion	No built-in regenerative resistor (external resistor only)					
	Dyn	amic b	orake	Built-in					
	Con	itrol ma	ode	3 modes of (1) High-speed position control, (2) Internal velocity control and (3) High-functionality positioning control are selectable with parameter.					
		Con	trol input	(1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Deviation counter clear,(4) Gain switching, (5) Electronic gear switching					
		Con	trol output	(1) Positioning complete (In-position)					
	Positic		Max. command pulse frequency	Line driver : 500 kpps, Open collector : 200 kpps					
	Position control	Pulse input	Type of input pulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)					
	<u>0</u>	input	Electronic gear (Division/Multiplication) (of command pulse)	Setup of electronic gear ratio Setup range of $(1-10000) \times 2^{(0-17)}/(1-10000)$					
			Smoothing filter	Primary delay filter or FIR type filter is selectable to the command input.					
	Inte	Con	trol input	 (1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Selection 1 of internal command speed, (4) Selection 2 of internal command speed, (5) Speed zero clamp 					
	rnal	Con	trol output	(1) Speed arrival (at-speed)					
	spe	Inter	rnal speed command	Internal 4-speed is selectable with control input.					
	Internal speed control		-start/down function	Individual setup of acceleration and deceleration are enabled, with 0 s to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.					
	trol	Zero	o-speed clamp	0-clamp of internal speed command with speed zero clamp input is enabled.					
			Real-time	Estimates the load inertia in real-time in actual operation and sets up the gain automatically corresponding to the machine stiffness. Useable at (1) High-response position control, (2) Internal					
		Auto-gain tuning	Normal mode	speed control and (3) High-functionality position control. 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					
			king of unnecessary t	control, (2) Internal speed control and (3) High-functionality position control. Masking of the following input signal is enabled. (1) Over-travel inhibition, (2) Speed zero clamp, (3) Torque limit switching					
	Common		sion of encoder feedback	1 P/r to 2500 P/r (encoder pulses count is the max.).					
	non	Protective function	Hardware error	Over-voltage, under-voltage, over-speed over-load, over-heat, over-current and encoder error etc.					
		ctive ion	Software error	Excess position deviation, command pulse division error, EEPROM error etc.					
		Trac	eability of alarm data	Traceable up to past 14 alarms including the present one.					
		Dam	ping control function	Manual setup with parameter					
				• •					
		Setup	Manual	Console					

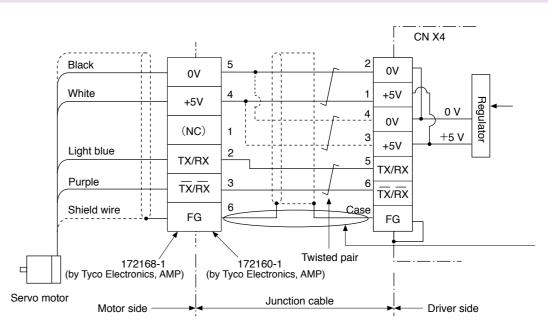
Standard Wiring Example of Main Circuit/ **Encorder Wiring Diagram**

Standard Wiring Example of Main Circuit

3-Phase, 200 V



Encorder Wiring Diagram

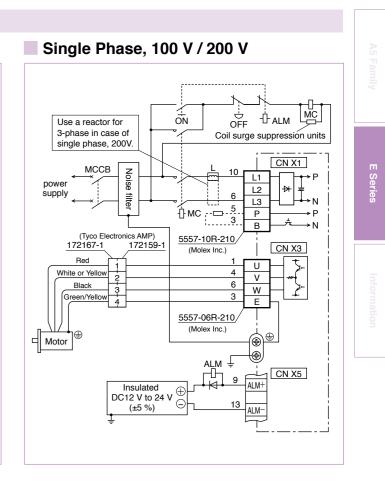


1) Refer the wiring diagram.

- bending resistance.
- 3) Use the twisted pair wire for the corresponding signal and power supply. 4) Shielding

Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

E Series Wiring Diagram



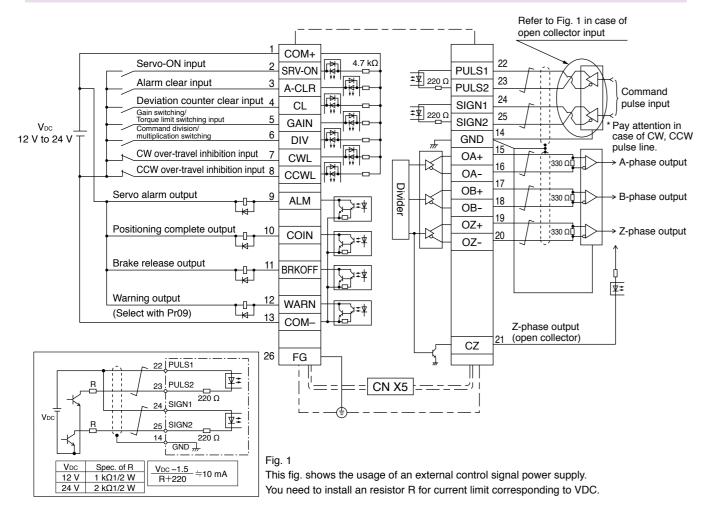
When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher

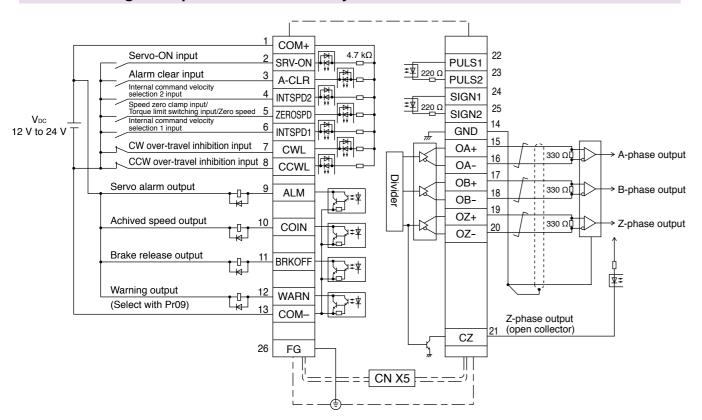
Wiring Diagram

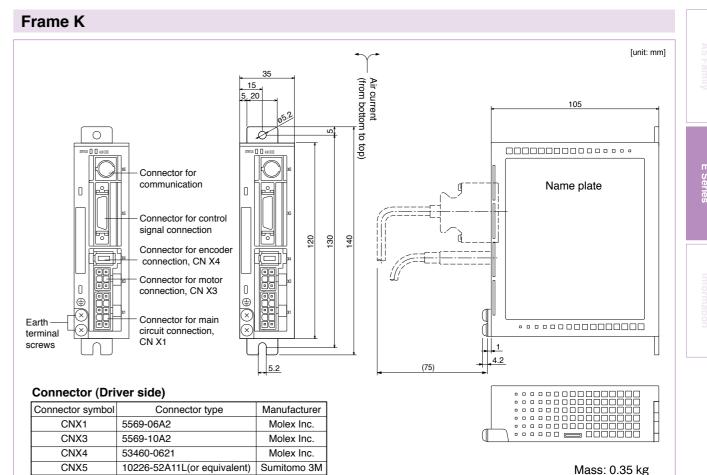
Control Circuit Standard Wiring Example

CN X 5 Wiring Example at Position Control Mode



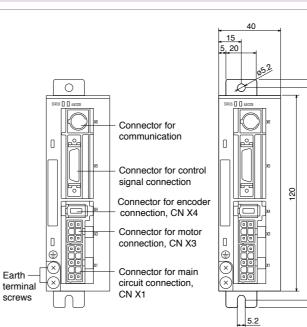
CN X 5 Wiring Example at Internal Velocity Control Mode





Connector symbol	Connector type	Manufacturer
CNX1	5569-06A2	Molex Inc.
CNX3	5569-10A2	Molex Inc.
CNX4	53460-0621	Molex Inc.
CNX5	10226-52A11L(or equivalent)	Sumitomo 3M

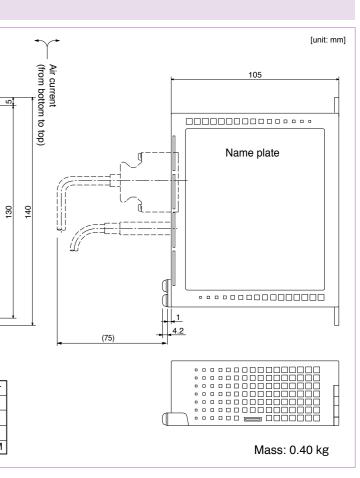
Frame L



Connector (Driver side)

Connector symbol	Connector type	Manufacturer
CNX1	5569-06A2	Molex Inc.
CNX3	5569-10A2	Molex Inc.
CNX4	53460-0621	Molex Inc.
CNX5	10226-52A11L(or equivalent)	Sumitomo 3M

E Series **Dimensions of Driver**



Motor Specifications

100 V MUMA 50 W to 200 W [Low inertia Small drives]

				AC100 V			
Motor model		MUMA	5AZP1	011P1	021P1		
Applicable driver Power supply capacity Rated output (W) Rated torque (N·m) Momentary Max. peak Rated current (Arms) Max. current (Ao-p) Regenerative brake frequency (times/min) Note)1 Rated rotational speed Max. rotational speed Max. rotational speed (Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) Recommended momer of the load and the rotoc Rotary encoder specifi Protective enclosure ra Ambier Installa Altitude		Model No.	MKDET1105P	MKDET1110P	MLDET2110P		
Applicable driv	/er	Frame symbol	Fram	ne K	Frame L		
Power supply	capacity (kVA)	0.3	0.4	0.5		
Rated output (W)		50	100	200		
Rated torque	(N·m)		0.16	0.32	0.64		
Momentary M	ax. peak t	orque (N·m)	0.48	0.95	1.91		
Rated current	(Arms)		1.0	1.6	2.5		
Max. current (Ao-p)		4.3	6.9	11.7		
	brake	Without option		No limit Note)2			
(times/min)	Note)1	DV0P2890	4.3 0P2890 0P2890 0ut brake 0.021 brake 0.026	No limit Note)2			
Rated rotation	al speed ((r/min)		3000			
Max. rotationa	l speed (r	/min)		5000			
	rtia	Without brake	0.021 0.032 0.10				
(×10 ⁻⁴ kg·m²)		With brake	0.026	0.036	0.13		
				30 times or less			
Rotary encod	er specific	cations		2500 P/r			
				Incremental			
	Resolutio	n per single turn		10000			
Protective end	closure ra	ting	· ·	•	,		
	Ambient	temperature		3 , · · · 3			
	Ambient	humidity	0.48 0.95 1.91 1.0 1.6 2.5 4.3 6.9 11.7 No limit Note)2 No limit Note)2 No limit Note)2 3000 3000 0.021 0.032 0.10 0.026 0.036 0.13 30 times or less 2500 P/r Incremental 10000 IP65 (except rotating portion of output shaft and lead wire end) 0 °C to 40 °C (free from freezing), Storage : -20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <noral humidity="">) 85 %RH or lower (free from condensing) Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and c 1000 m or lower 49 m/s² or less 49 m/s² or less</noral>	RH or lower (free from condensing	ng)		
Environment	Installati	on location		able gas, oil mist and dus			
	mended moment oad and the rotor encoder specific Resolutio tive enclosure rat Ambient Installati Altitude Vibratior			1000 m or lower			
	Vibration	n resistance		49 m/s ² or less			
Mass (kg), () r	epresents	holding brake type	0.4 (0.6)	0.5 (0.7)	0.96 (1.36)		

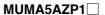
Brake spec	cifications (This brake wil	I be released when it is energized. Do not use this for braking	the motor in motion.)				
Static frictio	n torque (N·m)	0.29	1.27				
Engaging tir	me (ms)	25	50				
Releasing ti	me (ms) Note)4	20 (30)	15 (100)				
Exciting cur	rent (DC) (A)	0.26	0.36				
Releasing v	oltage	DC 1 V or more	·				
Exciting volt	tage	DV 24 V ±10 %					
Permissible	load						
	Radial load P-direction (N)	147	392				
During assembly	Thrust load A-direction (N)	88	147				
	Thrust load B-direction (N)	117	196				
	Radial load P-direction (N)	68	245				
During operation	Thrust load A-direction (N)	58	98				

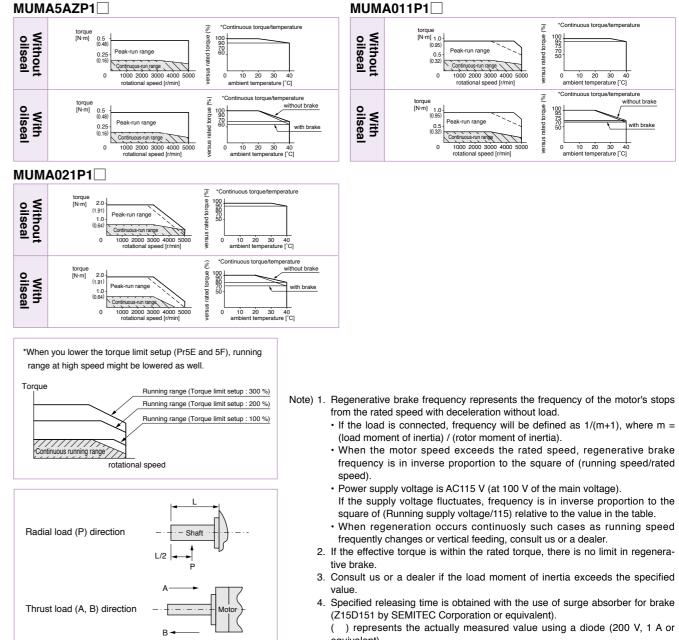
For motor dimensions, refer to P.231, and for the diver, refer to P.226.

Thrust load B-direction (N)

j.) <mark>N</mark>	1 U	M	<u>4</u> 5	A Z	<u>P</u> -	1 <u>S</u>				
Symbol	Туре					ign order Standard				
MUMA	Ultra low in (50 W to 20				1.3	Motor stru	icture			
							Shaft H	lolding brake	Oil se	al
Motor rate	ed output		Voltage s	pecifications		Symbol	Key-way, center tap	rithout with	without	with
Symbol	Rated output	t	Symbol	Specifications		S		•		
5A	50 W		1	100 V		T	•	•	•	
01	100 W	-	Z	100/200 V						
02	200 W		Z	(50 W only)						
					Rotary er	coder specifica	tions			
					Symbol	Format	Pulse counts	Resolution	Wires]
					Р	Incremental	2500 P/r	10000	5	1

Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]





58

98

- equivalent)

Motor Specifications

200 V MUMA 50 W to 400 W [Low inertia Small drives]

				AC2	00 V				
Motor model		MUMA	5AZP1	012P1	022P1	042P1			
					MKDET1310P	MLDET2310P			
Applicable driv	er	Model No.	MKDET	1505P	MKDET2210P	MLDET2510P			
		Frame symbol	Fram	ne K	Frame K Frame L	Frame L			
Power supply of	capacity (kVA)	0.3	0.3	0.5	0.9			
Rated output (W)		50	100	200	400			
Rated torque (N · m)			0.16	0.32	0.64	1.3			
Momentary Max. peak torque (N \cdot m)		orque (N · m)	0.48	0.95	1.91	3.8			
Rated current	(Arms)		1.0	1.0	1.6	2.5			
Max. current (A	Ao-p)		4.3	4.3	7.5	11.7			
Regenerative brake frequency (times/min)		Without option	No limit Note)2						
inequency (iii)	Note)1	DV0P2891		No limit	Note)2				
Rated rotationa	Rated rotational speed (r/min)			30	000				
Max. rotational	speed (r	/min)		50	000				
Moment of iner	rtia	Without brake	0.021	0.032	0.10	0.17			
of rotor (×10 ⁻⁴ kg⋅m²)		With brake	0.026	0.036	0.13	0.20			
Recommended of the load and				30 times	s or less				
Rotary encode	rspecific	ations		250	0 P/r				
Tiotary choode	r opcomo			Incre	mental				
	Resolut	ion per single turn		10	000				
Protective encl	osure rati	ing	IP65 (e	xcept rotating portion of	output shaft and lead wir	e end)			
	Ambier	nt temperature			ng), Storage : –20 °C to 6 C for 72 hours <nomal hu<="" td=""><td></td></nomal>				
	Ambient humidity			85 %RH or lower (fre	ee from condensing)				
Environment	Installa	tion location	Indoors (no direct s	sunlight), free from corro	sive gas, inflammable gas	s, oil mist and dust			
	Altitude)		1000 m	or lower				
	Vibratio	on resistance		49 m/s ²	or less				
Mass (kg), () re	epresents	holding brake type	0.4 (0.6)	0.5 (0.7)	0.96 (1.36)	1.5 (1.9)			

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)

Static friction torque (N · m)	0.29	1.27			
Engaging time (ms)	25	50			
Releasing time (ms) Note)4	20 (30)	15 (100)			
Exciting current (DC) (A)	0.26	0.36			
Releasing voltage	DC 1 V	or more			
Exciting voltage	DV 24 V ±10 %				

Permissible lo	bad		
	Radial load P-direction (N)	147	392
During assembly Thrust load A-direction (N)	88	147	
,	Thrust load B-direction (N)	117	196
	Radial load P-direction (N)	68	245
During operation	Thrust load A-direction (N)	58	98
operation	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.

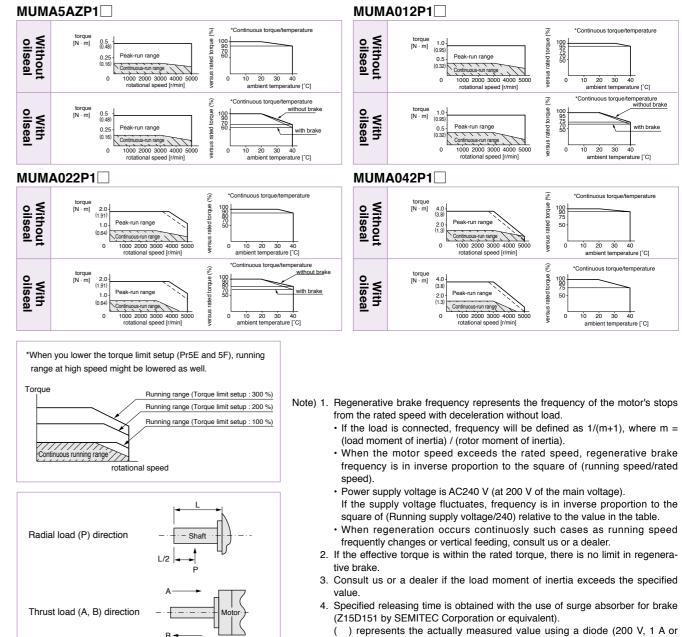
Driver for 200 W, the upper row is the power supply of 3-phase 200 V, and lower is the power supply of single-phase 200 V.

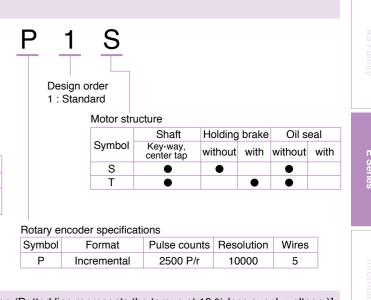
Driver for 400 W, the upper row is the power supply of 3-phase 200 V, and lower is the common power supply of single-phase and 3-phase 200 V.

N	lode	I C)esigna	atio	n					
e.	g.)	M	U	Ν	Л	A		5	Α	Ζ
	Symbol Ty			e						
			Ultra low (50 W to							
	Motor	rate	d output				Volta	ge spe	cification	s
	Symb	ol	Rated outp	out			Sym	bol	Specifica	tions
	5A		50 W				2		200	V
	01 100 V		100 W		1				100/20	
	02		200 W				Z		(50 W o	nly)
	04		400 W							

Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]



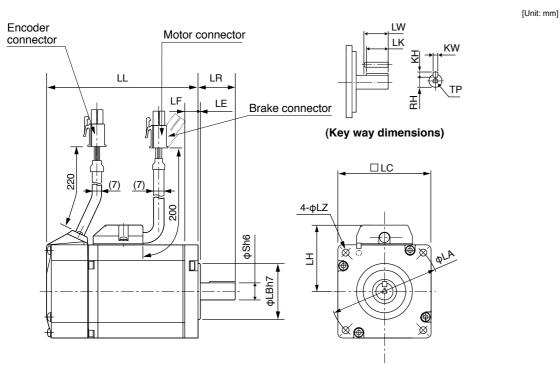




- () represents the actually measured value using a diode (200 V, 1 A or equivalent)

Dimensions of Motor

MUMA 50 W to 400 W



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

		_				[Uni	
				MUMA series	(Ultra low inertia)		
Motor outpu	t		50 W	100 W	200 W	400 W	
Motor mode	l	MUMA	5A 🗌 P 1 🗌	01□P1□	02□P1□	04□P1□	
Rotary enco	der spec	ifications	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental	
LL		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	
Kauman	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)	
Maga (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 spec	cifications		refer to Options	s, 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.

Motor Types/ Model No. Designation **Specifications**

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	

Mode	I No. I	Desi	gnatic	n					
e.g.)	Μ	U	Μ	A	A C)	1	1	
	Symbol		Туре						
	MUMA		ow inertia to 400 \						
	Motor rate	ed outp	ut —						
	Symbol	Rated	output		Voltaga		ificatio		
	01	10	0 W 0		Voltage s	_			1
	02	20	0 W 0		Symbol	S	pecifica		
	04	40	0 W 0		1		100	V	
					2		200	V	
Rot	ary encod	der spe	cification	s —					
S	/mbol	Fo	rmat	P	ulse count	ts	Pulse	counts	

Specifications of Motor with Gear Reducer

Incremental

2500 P/r

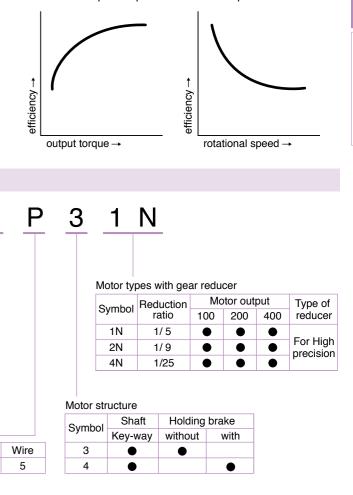
Р

	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 %					
0	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 rotor moment of inertia of the motor					
	(conversion to the motor shaft)						
	Protective structure	IP44 (at gear reducer)					
	Ambient temperature	0 °C to 40 °C					
_	Ambient humidity	85 %RH (free from condensation) or less					
Environment	Vibration resistance	49 m/s ² or less (at motor frame)					
	Impact resistance	98 m/s ² or less					

E Series

Motors with Gear Reducer

Efficiency of the gear reducer shows the following inclination in relation to output torque and rotational speed.



10000

E Series Motors with Gear Reduce

Table of Motor Specifications/ The Combination of the Driver and the Motor

Table of Motor with Gear Reducer Specifications

	Motor					М	JMA with g	ear reduc	er				
Model	Output	Reduction ratio	Output	Rated	Max. speed		Peak max.	Moment of inertia (motor + reducer/converted) to motor shaft		·		Permissible radial load	Permissible
	•					torque	torque	w/o brake	w/ brake	w/o brake	w/ brake	Taulai luau	thrust load
	(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J (× 10 ⁻⁴ kg⋅m²)		(kg)		(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.

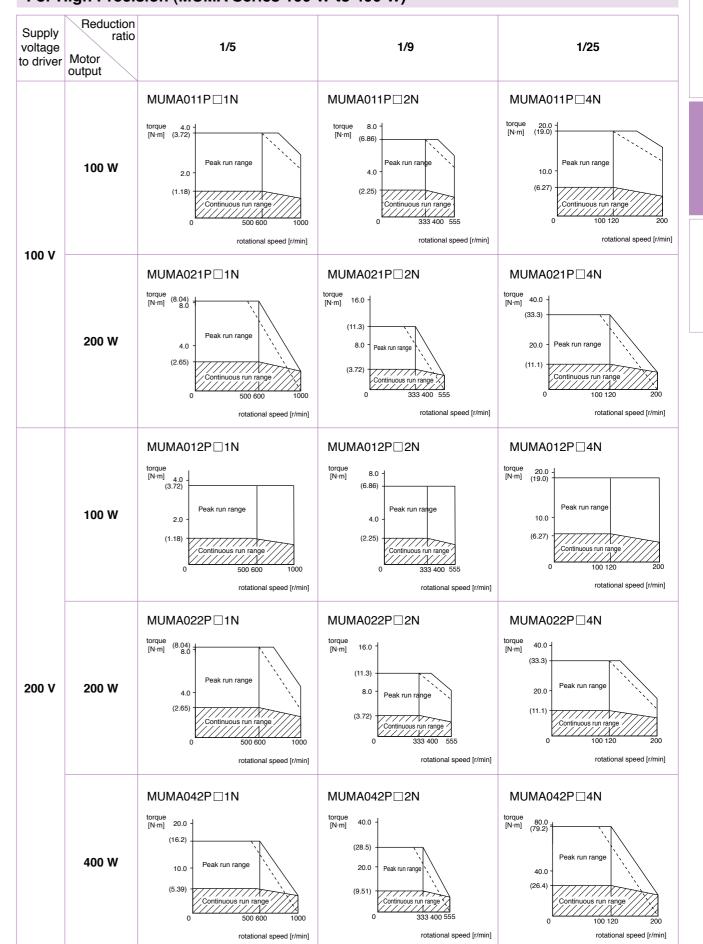
The Combination of the Driver and the Motor with Gear Reducer

Combination with 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 gear reducer	Part No. of driver	with gear reducer	Part No. of driver	Part No. of driver
100 W	MUMA011P	MKDET1110P	MUMA012P	MKDET1505P	MKDET1505P	
2500 P/r	200 W	MUMA021P	MLDET2110P	MUMA022P	MKDET1310P	MLDET2210P
Incremental	400 W	400.101			MLDET2510P	MLDET2510P
	400 VV	-	_	MUMA042P	MLDET2310P	WILDE 12310F

For dimensions, refer to P.235.

Torque Characteristics

For High Precision (MUMA Series 100 W to 400 W)



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

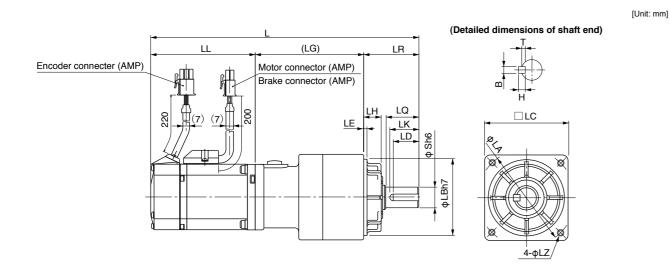
E Series

Motors with Gear Reducer

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Motor Dimensions Motors with Gear Reduce

MUMA series with Gear Reducer



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																		
		175	223.5	124	32	20	52	50	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	50	00	12	10	(Depth: 12)	10	07.5		4x4x10	2.5					
	100 W	1/5	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					
		1/25	266	124	50	30	70	10	90	19	17	(Depth: 20)	20	52	3	0X0X22	5.5					
MUMA02 P 1N		1/5	200.5	96	32	20	52	50	60	12	10	M5	18	72.5		4×4×16	2.5					
		175	233.5	129	52	20	52	50	00	12	10	(Depth: 12)	10	72.5		474710	2.5					
MUMA02 P 2N	200 W	1/9	235.5	96										89.5								
	200 VV	175	268.5	129										03.5								
MUMA02 P 4N		1/25	246	96	50	50	- 50	50	50	50									100			
		1725	279	129							50	50	50	50	30	78	70	90	19	17	M6	26
MUMA042P 1N		1/5	263	123.5	50	50	10	10	30	15	17	(Depth: 20)	20			070722	0.0					
		175	296	156.5										89.5								
MUMA042P 2N	400 W	1/9	263	123.5										09.5								
	400 VV	175	296	156.5																		
MUMA042P□4N		1/25	288.5	123.5	61	40	98	90	115	24	18	M8	35	104	5	8×7×30	4					
		1/25	321.5	156.5	01	40	30	30	115	24	10	(Depth: 20)	55	104	5	027230	4					

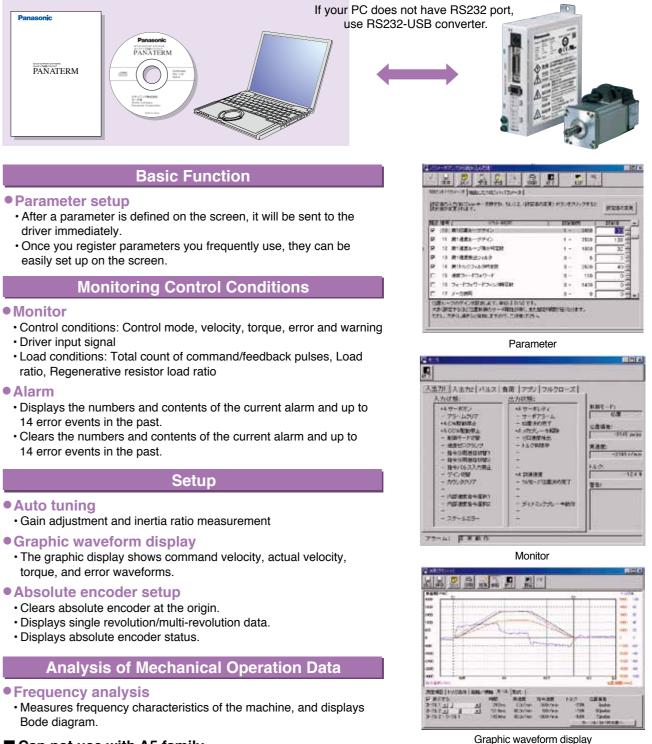
Upper column : without brake Lower column · with brake

Setup Support Software

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.



Parameter setup

• Alarm

Absolute encoder setup

■ Can not use with A5 family.

Hardware configuration

- [Personal computer] CPU : Pentium 100MHz or more Memory : 16 MB or more (32 MB recommended) [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

E Series

Options

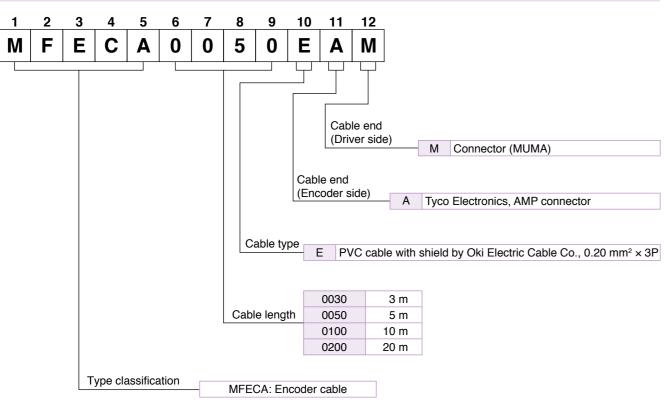
• Hard disk capacity (vacancy of 25 MB or more recommended) • OS : Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version) · Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

Ε	Series	5

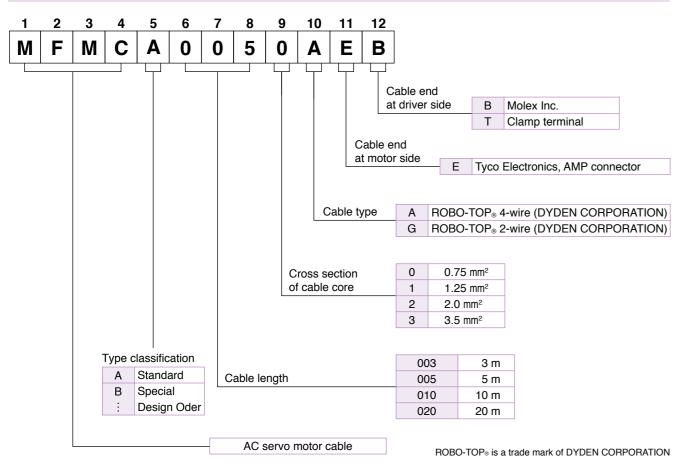
Options

Cable part No. Designation

Encoder Cable



Motor Cable, Brake Cable



Cable

 1) Interface cable : DV0P0800 2) Encoder cable (3 m) : MFECA0030AEB 3) Motor cable (3 m) : MFECA0030AEB 4) Connector kit for driver power supply connection : DV0P2870 2) Encoder cable (5 m) : MFECA0050AEB 3) Motor cable (5 m) : MFECA0050AEB 4) Connector kit for driver power supply connection : DV0P2870 2) Encoder cable (5 m) : MFECA0030AEB 4) Connector kit for driver power supply connection : DV0P2870 2) Encoder cable (5 m) : MFECA0050AEB 4) Connector (Driver side) <u>3E206-0100KV</u> 3) Motor cable (3 m) : MFECA0305EAM 4) Connector (Driver side) <u>3E206-0100KV</u> 3) Motor cable (3 m) : MFECA0305EAM 4) Connector (Driver side) <u>3E206-0100KV</u> 3) Motor cable (3 m) : MFECA0305EAM 4) Connector (Driver side) <u>3E206-0100KV</u> 4) Connector (Driver side) <u>3E206-0100KV</u> 5) MFECA0305EAM 4) Connector (Driver side) <u>3E206-0100KV</u> 5) MFECA0050EAM 4) Connector (Driver side) <u>3E206-0100KV</u> 4) Connector (Driver side) <u>3E206-0100KV</u> 5) MFECA0020EAM 4) MFECA0200EAM 4) MFECA02020EAM 4) MFECA02020	Part No. DV0P37300		Part No. DV0P39200			
Part No. MFECA0 * * 0EAM Image: constraint of the state mark of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of the state mark of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO Image: constraint of DYDEN CORPORATIO	 2) Encoder cable (3 m) : MFE 3) Motor cable (3 m) : MFMCA 4) Connector kit for driver power 	CA0030EAM 2 A0030AEB 2	 2) Encoder cable (5 m) : MF 3) Motor cable (5 m) : MFM 4) Connector kit for driver point 	ECA005 CA0050A	EB	
Image: connector (Criver side) Stell kit Stell kit Stell kit Manufacturer Connector (Criver side) 3E206-0100KV Sumitomo 3M Sumitomo 3M Connector (Criver side) 0.20 mm² x3P Oki Electric Cable Co., Ltd. Sum HFECA0200EAN Otor Cable (ROBO-TOP _® 105 °C 600 V . DP) RobotroP _* is a trade mark of DYDEN CORPORATIO Part No. MFMCA0 * * 0AEB [Unit: m Image: Connector Pin 172159-1 Tyco Electronics Image: Connector Pin 172159-1 Tyco Electronics Image: Connector Pin 5557-06R-210 Molex Inc Connector Pin 5557-06R-210 Molex Inc Connector Pin 5557-06R-210 Molex Inc Image: Cable ROBO-TOP © 105 °C 600V · DP) RobotroP _* is a trade mark of DYDEN CORPORATIO rake Cable (ROBO-TOP _® 105 °C 600V · DP) RobotroP _* is a trade mark of DYDEN CORPORATIO rake Cable (ROBO-TOP _® 105 °C 600V · DP) Robo	ncoder Cable					
Tile Part No. Manufacturer Sell kit 35206-0100KY. Sumitomo 3M. Connector (Driver side) 35206-0100KY. Sumitomo 3M. Sell kit 35206-0100KY. Sumitomo 3M. Connector (Driver side) 35206-0100KY. Sumitomo 3M. Connector (Driver side) 35206-0100KY. Sumitomo 3M. Connector (Driver side) 172160-1 Tyco Electronics Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. Otor Cable (ROBO-TOP _® 105 °C 600 V . DP) Robo-TOP _® is a trade mark of DyDex CORPORATIO Part No. MFMCA0 * * 0AEB Inter Image: Connector Pin 170362-1, 170366-1 Tyco Electronics Imate: Cable (ROBO-TOP _® 105 °C 600V · DP) Robo-TOP	Part No. MFECA0 * * 0	EAM				
Connector (Driver side) 3E206-0100KV Sumitomo 3M or equivalent Shell kit 3E306-3200-008 or equivalent Connector 172160-1 Tyco Electronics Connector Pin 170365-1 Tyco Electronics Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. Otor Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATIO Part No. MFMCA0 ** 0AEB (Interm (Joint Electronics Connector Pin 172159-1 Tyco Electronics Connector Pin 172159-1 Tyco Electronics Jim Part No. MFMCA0386-1 Connector Pin 172159-1 Connector Pin 172362-1, 170362-1 Tyco Electronics Connector Pin 5557-06R-210 Molex Inc Connector Pin 5557-06R-210 Molex Inc Connector Pin 5557-06R-210 Molex Inc Connector Pin 55567 Molex Inc Cable ROBO-TOP _® 105 °C 6000V . DP) ROBO-T					[Unit: n	
Shell kit 3E306-3200-008 or equivalent Connector 172160-1 Tyco Electronics Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. Otor Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATIO Part No. MFMCA0 ** 0AEB Image: Connector Plin 172159-1 Tyco Electronics Image: Connector Plin 105 °C 600 V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATIO Image: Connector Plin 172159-1 Tyco Electronics Image: Connector Plin 1720362-1, 170366-1 Image: Connector Plin 170362-1, 170366-1 Tyco Electronics Image: Connector Plin Image: Co	Title	Part No.	Manufacturer	L (m)	Part No.	
Connector 172160-1 Tyco Electronics Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. Otor Cable (ROBO-TOP® 105 °C 600 V . DP) ROBO-TOP® 105 °C 600 V . DP) ROBO-TOP® 105 °C 600 V . DP) Part No. MFMCA0 ** 0AEB (Unit: m (10) MFMCA0 ** 0AEB (Unit: m (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) <td col<="" td=""><th>Connector (Driver side)</th><td>3E206-0100KV</td><td>Sumitomo 3M</td><td>3</td><td>MFECA0030EAM</td></td>	<th>Connector (Driver side)</th> <td>3E206-0100KV</td> <td>Sumitomo 3M</td> <td>3</td> <td>MFECA0030EAM</td>	Connector (Driver side)	3E206-0100KV	Sumitomo 3M	3	MFECA0030EAM
Connector Pin 170365-1 Tyco Electronics Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. Otor Cable (ROBO-TOP® 105 °C 600 V . DP) ROBO-TOP® is a trade mark of DYDEN CORPORATIO Part No. MFMCA0 ** 0AEB Image: Connector Pin 170366-1 Image: Connector Pin 170366-1 Connector Pin 170366-1 Connector Pin 170366-1 Connector Pin 5557-06R-210 Connector Pin 55557 Connector Pin 55557 Connector Pin 55557 Connector Pin 65557 Connector Pin 70362-1, 170366-1 Connector Pin 55557 Connector Pin 70362-1, 170366-1 Connector Pin 55557-06R-210 Connector Pin 55557 Connector Pin 55557 Cable ROBO-TOP 600 V 0.75 mm² Cable ROBO-TOP® 105 °C 600V . DP) Robo-TOP® is a trade mark of DYDEN CORPORATIO Part No. MFMCB0 ** 0GET Image: Cable Image: Cable Pin MFMCB0 ** 0GET Image: Cable Pin Image: Cable P	Shell kit	3E306-3200-008	or equivalent	5	MFECA0050EAN	
Connector Pin 170365-1 20 IMPECA0200EAN Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. 20 IMPECA0200EAN otor Cable (ROBO-TOP® 105 °C 600 V . DP) ROBO-TOP® is a trade mark of DYDEN CORPORATIO Part No. MFMCA0 ** 0AEB [Unit: n (50) L (50) [Unit: n Connector 172159-1 Type Electronics Connector 172159-1 Connector Pin 170362-1, 170366-1 Connector Pin 170362-1, 170366-1 Connector Pin 5557-06R-210 Molex Inc Connector Pin 55557-06R-210 Connector Pin 55557-06R-210 Connector Pin 55557 Cable ROBO-TOP 600 V 0.75 mm² Part No. MFMCA0200AEE (Unit: n (40) L (50) (Unit: n (40) <t< td=""><th></th><td></td><td> Tyco Electronics</td><td></td><td></td></t<>			Tyco Electronics			
otor Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATIO Part No. MFMCA0 ** 0AEB (50) (50) (10) (10) (10) (10) (10) (10) (10) (10) Connector Pin Connector 172159-1 Tyco Electronics Connector Pin Connector 7 Connector Pin Connector Pin <			-	20	MFECA0200EAN	
Title Part No. Manufacturer Connector 172159-1 Tyco Electronics Connector Pin 170362-1, 170366-1 Tyco Electronics Connector Pin 5557-06R-210 Molex Inc Connector Pin 5556T Molex Inc Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. ROBO-TOP® 105 °C 600V . DP) ROBO-TOP® is a trade mark of DYDEN CORPORATIO MFMCB0 ** 0GET (40) L (50) (40) L (50) (Unit: n	Part No. MFMCA0 * * 0	AEB				
Connector 172159-1 Tyco Electronics Connector Pin 170362-1, 170366-1 Tyco Electronics Connector Pin 5557-06R-210 Molex Inc Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. RoBo-TOP _® 105 °C 600V . DP) ROBO-TOP _® 105 °C 600V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATIO Quint: n			→ 		[Unit: n	
Connector Pin 170362-1, 170366-1 Tyco Electronics Connector 5557-06R-210 Molex Inc Connector Pin 5556T Molex Inc Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. ROBO-TOP® 105 °C 600V . DP) ROBO-TOP® 105 °C 600V . DP) ROBO-TOP® 105 °C 600V . DP) Part No. MFMCB0 ** 0GET (40) L (40) L (40) L (40) L (Unit: n					[Unit: n	
Connector Pin 170362-1, 170366-1 S Connector 5557-06R-210 Molex Inc Connector Pin 5556T Molex Inc Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. ROBO-TOP 600 V 0.75 mm² Part No. MFMCB0 ** 0GET [Unit: m 10 Log 0 [Unit: m	Title	Part No.	Manufacturer		Part No.	
Connector Pin 5556T Molex Inc Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. ROBO-TOP® 105 °C 600V . DP) ROBO-TOP® 105 °C 600V . DP) ROBO-TOP® 105 °C 600V . DP) Part No. Molex inc Q0 Molex inc Daiden Co.,Ltd. ROBO-TOP® 105 °C 600V . DP) ROBO-TOP® is a trade mark of DYDEN CORPORATIO Part No. MFMCB0 ** 0GET Quint: n Quint: n Quint: n	Title Connector	Part No. 172159-1		3	Part No. MFMCA0030AEE	
Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. rake Cable (ROBO-TOP® 105 °C 600V . DP) ROBO-TOP® is a trade mark of DYDEN CORPORATIO Part No. MFMCB0 ** 0GET (40) L (50) (101) (101) (101) Daiden Co.,Ltd. (101) Part No. MFMCB0 ** 0GET (40) L (50) (101) (101) (101) (101)	Title Connector Connector Pin	Part No. 172159-1 170362-1, 170366-1		3	Part No. MFMCA0030AEE MFMCA0050AEE	
rake Cable (ROBO-TOP _® 105 °C 600V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATIO Part No. MFMCB0 * * 0GET Image: Cable of the second seco	Title Connector Connector Pin Connector	Part No. 172159-1 170362-1, 170366-1 5557-06R-210	Tyco Electronics	3 5 10	Part No. MFMCA0030AEE MFMCA0050AEE MFMCA0100AEE	
	Title Connector Connector Pin Connector Connector Pin	Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T	Tyco Electronics Molex Inc	3 5 10	Part No. MFMCA0030AEE MFMCA0050AEE MFMCA0100AEE	
(5.6)	Title Connector Connector Pin Connector Pin Cable rake Cable (ROBO-T)	Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T ROBO-TOP 600 V 0.75 mm² OP _® 105 °C 600V . DP) GET	 Tyco Electronics Molex Inc Daiden Co.,Ltd. 	3 5 10 20	Part No. MFMCA0030AEE MFMCA0050AEE MFMCA0100AEE MFMCA0200AEE	
Title Part No. Manufacturer L (m) Part No.	Title Connector Connector Pin Connector Pin Cable rake Cable (ROBO-T(Part No. MFMCB0 * * 0	Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T ROBO-TOP 600 V 0.75 mm² OP® 105 °C 600V . DP) GET (40) L (40) L (40) L (40) L (40) L (10) L	 Tyco Electronics Molex Inc Daiden Co.,Ltd. 	3 5 10 20	Part No. MFMCA0030AEE MFMCA0050AEE MFMCA0100AEE MFMCA0200AEE	

				Opuc	/15
e Set (3 m)		(Cable Set (5 m)		
t No. DV0P373	00		Part No. DV0P39200		
terface cable : DV ncoder cable (3 m) otor cable (3 m) : onnector kit for dri V0P2870) : MFECA0 MFMCA003		 Interface cable : DV0F Encoder cable (5 m) : Motor cable (5 m) : MF Connector kit for drive DV0P2870 	MFECA0050 MCA0050A	EB
der Cable					
No. MFECA0	* * 0EA	M			
					[Unit: mm]
Title		Part No.	Manufacturer	L (m)	Part No.
Connector (Drive	r side)	3E206-0100KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit		3E306-3200-008	or equivalent	5	MFECA0050EAM
Connector		172160-1	Tugo Electronico	10	MFECA0100EAM
Connector P	in	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable		0.20 mm ² × 3P	Oki Electric Cable Co., L	_td.	
t No. MFMCA0	* * 0AE) L (50)			[Unit: mm]
Title		5			5
		Part No.	Manufacturer	L (m)	Part No.
Connector	+	172159-1	Manufacturer Tyco Electronics	3	MFMCA0030AEB
	in		Tyco Electronics		
Connector Connector P	in	172159-1 170362-1, 170366-1		3 5	MFMCA0030AEB MFMCA0050AEB
Connector Connector P Connector	in	172159-1 170362-1, 170366-1 5557-06R-210	Tyco Electronics	3 5 10	MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB
Connector Connector P Connector Connector P Cable	BO-TOP	172159-1 170362-1, 170366-1 5557-06R-210 5556T ROBO-TOP 600 V 0.75 mm ² 8 105 °C 600V . DP)	Tyco Electronics Molex Inc Daiden Co.,Ltd.	3 5 10 20	MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB
Connector P Connector P Connector P Cable te Cable (ROI t No. MFMCB0		172159-1 170362-1, 170366-1 5557-06R-210 5556T ROBO-TOP 600 V 0.75 mm ² 8 105 °C 600V . DP) T (40)	Tyco Electronics Molex Inc Daiden Co.,Ltd. ROBO-TO	3 5 10 20	MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB

					Opuc	DIS
le Se	et (3 m)		Cab	le Set (5 m)		
rt No.	DV0P37300		Pa	rt No. DV0P39200		
Encode Motor d	ce cable : DV0P0800 er cable (3 m) : MFEC cable (3 m) : MFMCA0 ctor kit for driver powe 870	0030AEB	2) E 3) M 4) C	nterface cable : DV0P08 Encoder cable (5 m) : MF Motor cable (5 m) : MFM Connector kit for driver p DV0P2870	ECA0050 CA0050A	EB
oder	r Cable					
rt No.	MFECA0 * * 0E	АМ				
						[Unit: mm]
	Title	Part No.		Manufacturer	L (m)	Part No.
Cor	nnector (Driver side)	3E206-0100KV		Sumitomo 3M	3	MFECA0030EAM
	Shell kit	3E306-3200-008		or equivalent	5	MFECA0050EAM
	Connector	172160-1		Tyco Electronics	10	MFECA0100EAM
	Connector Pin	170365-1			20	MFECA0200EAM
rt No.	MFMCA0 * * 0A	EB				
			(50)			[Unit: mm]
	Title	Part No. 172159-1		Manufacturer	L (m)	Part No. MFMCA0030AEB
	Connector Connector Pin	170362-1, 170366-1	·	Tyco Electronics	3	MFMCA0030AEB
	Connector	5557-06R-210			10	MFMCA0050AEB
	Connector Pin	5556T		Molex Inc	20	MFMCA0200AEB
	Cable	ROBO-TOP 600 V 0.75 n	nm²	Daiden Co.,Ltd.	1	
t No.	able (ROBO-TO MFMCB0 * * 0G	P _® 105 °C 600V . DP	(50)	ROBO-TOP _e is	s a trade mark	of DYDEN CORPORATION
	(5.6)	I		~		
	Title	Part No.		Manufacturer	L (m)	Part No.

ole Se	et (3 m)	C	Cable Set (5 m)		
rt No.	DV0P37300		Part No. DV0P39200		
Encode Motor c	ce cable : DV0P0800 er cable (3 m) : MFEC cable (3 m) : MFMCA0 ctor kit for driver powe 870	0030AEB	 Interface cable : DV0P0 Encoder cable (5 m) : M Motor cable (5 m) : MFN Connector kit for driver p DV0P2870 	FECA005 1CA0050A	EB
oder	Cable				
t No.	MFECA0 * * 0E	AM			
					[Unit: mr
	Title	Part No.	Manufacturer	L (m)	Part No.
Con	nnector (Driver side)	3E206-0100KV	Sumitomo 3M	3	MFECA0030EAM
	Shell kit	3E306-3200-008	or equivalent	5	MFECA0050EAM
	Connector	172160-1	Tyco Electronics	10	MFECA0100EAM
	Connector Pin	170365-1	,	20	MFECA0200EAM
	MFMCA0 * * 0A		Oki Electric Cable Co., Ltc ROBO-TOP _®		of DYDEN CORPORATION
	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP)			of DYDEN CORPORATION
	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB	ROBO-TOP _®	is a trade mark	[Unit: mr
	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB		is a trade mark	[Unit: mr Part No.
	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB	ROBO-TOP _®	is a trade mark	[Unit: mr Part No. MFMCA0030AEB
	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB	ROBO-TOP。	is a trade mark	[Unit: mr Part No.
	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T	ROBO-TOP Manufacturer Tyco Electronics Molex Inc	is a trade mark	[Unit: mr Part No. MFMCA0030AEB MFMCA0050AEB
	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) ↓ Part No. 172159-1 170362-1, 170366-1 5557-06R-210	ROBO-TOP。	is a trade mark	[Unit: mr Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T	ROBO-TOP Manufacturer Tyco Electronics Molex Inc Daiden Co.,Ltd.	is a trade mark	[Unit: mr Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) Fart No. 172159-1 170362-1, 170366-1 5556T ROBO-TOP 600 V 0.75 mm ² P _® 105 °C 600V . DP) ET	ROBO-TOP Manufacturer Tyco Electronics Molex Inc Daiden Co.,Ltd. ROBO-TOP	is a trade mark	[Unit: mr Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) Fart No. 172159-1 170362-1, 170366-1 5556T ROBO-TOP 600 V 0.75 mm ² P _® 105 °C 600V . DP) ET	ROBO-TOP Manufacturer Tyco Electronics Molex Inc Daiden Co.,Ltd.	is a trade mark	[Unit: mr Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) EB 50) L (50) Fart No. 172159-1 170362-1, 170366-1 5556T ROBO-TOP 600 V 0.75 mm ² P _® 105 °C 600V . DP) ET (40) L 1550 (400 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 1	ROBO-TOP Manufacturer Tyco Electronics Molex Inc Daiden Co.,Ltd. ROBO-TOP	is a trade mark	[Unit: mr Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T ROBO-TOP 600 V 0.75 mm ² P _® 105 °C 600V . DP) ET (40) L (40) L	ROBO-TOP.	is a trade mark	[Unit: mr Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T ROBO-TOP 600 V 0.75 mm ² P _® 105 °C 600V . DP) ET (40) L Part No. 172157-1 170362-1, 170366-1	ROBO-TOP.	is a trade mark	[Unit: mr MFMCA0030AEB MFMCA0030AEB MFMCA0100AEB MFMCA0200AEB of DYDEN CORPORATION [Unit: mr [Unit: mr Part No. MFMCB0030GET MFMCB0050GET
rt No.	able (ROBO-TO MFMCA0 * * 0A	P _® 105 °C 600 V . DP) EB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T ROBO-TOP 600 V 0.75 mm ² P _® 105 °C 600V . DP) ET (40) L Part No. 172157-1	ROBO-TOP.	is a trade mark	[Unit: mr MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB of DYDEN CORPORATION [Unit: mr [Unit: mr

E Series

Options

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Connector Kit

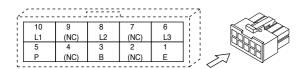
Connector Kit for Power Supply Connection

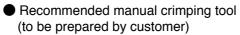
Part No. DV0P2870

Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (10 pins)	5557-10R-210	1	Malay Inc	For connector, CN X1
Connector pin	5556PBTL	6	Molex Inc.	(10 pins)

Pin configuration of connector CN X1





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.)

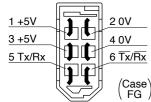
Parts composition

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	wolex 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)

Title	Part No.	Manufacturer	Cable material	
For encoder cable junction	755330-1	Tugo Electronico		
For motor power cable junction	755331-1 Tyco Electronics			
For Connector CN X3	57026-5000	Molex Inc.	UL1007	
For Connector CN X3	57027-5000	WOIEX INC.	UL1015	

<Remarks>

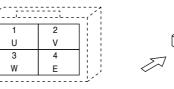
- 1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

Pin configuration of encoder cable junction

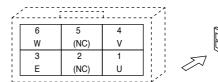
2	i			
ſ	1	2	3	-
	NC	TX/RX	TX/RX	1
Ī	4	5	6	i
	+5V	0V	FG	
				1.1



Pin configuration of motor power cable junction



Pin configuration of mating connector to CN X3 connector



<Cautions>

- checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.

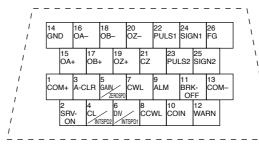
Connector Kit for External Peripheral Equipment

Part No. DV0P0770

Parts composition

- 1				
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.

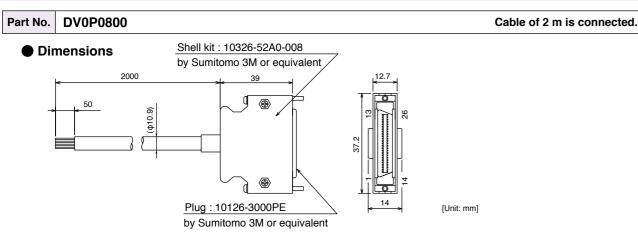


1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by

Options

Interface Cable/ **Communication Cable/ Console**

Interface Cable



Wiring table

Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable
1	COM+	Orange (Red 1)	10	COIN	Pink (Black 1)	19	OZ+	Pink (Red 2)
2	SRV-ON	Orange (Black 1)	11	BRK-OFF	Orange (Red 2)	20	OZ-	Pink (Black 2)
3	A-CLR	Gray (Red 1)	12	WARN	Orange (Black 2)	21	CZ	Orange (Red 3)
4	CL/INTSPD2	Gray (Black 1)	13	COM-	Gray (Red 2)	22	PULS1	Gray (Red 3)
5	GAIN/ZEROSPD	White (Red 1)	14	GND	Gray (Black 2)	23	PULS2	Gray (Black 3)
6	DIV/INTSPD1	White (Black 1)	15	OA+	White (Red 2)	24	SIGN1	White (Red 3)
7	CWL	Yellow (Red 1)	16	OA-	White (Black 2)	25	SIGN2	White (Black 3)
8	CCWL	Yellow (Black 1)	17	OB+	Yellow (Red 2)	26	FG	Orange (Black 3)
9	ALM	Pink (Red 1)	18	OB-	Yellow (Black 2)			

<Notes>

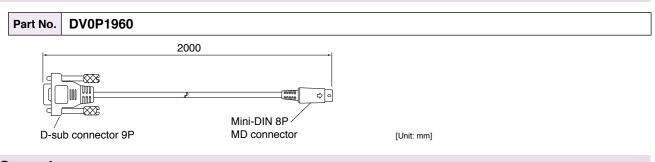
e. g. of Pin No. designation : Pin No. 1 Wire color is orange, and one red dot.

Pin No. 12 ... Wire color is orange, and two black dot.

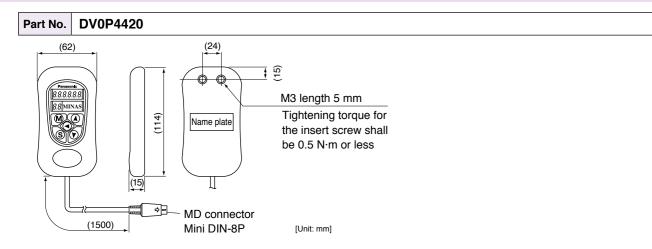
<Remarks>

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.

Communication Cable (For Connection with PC)

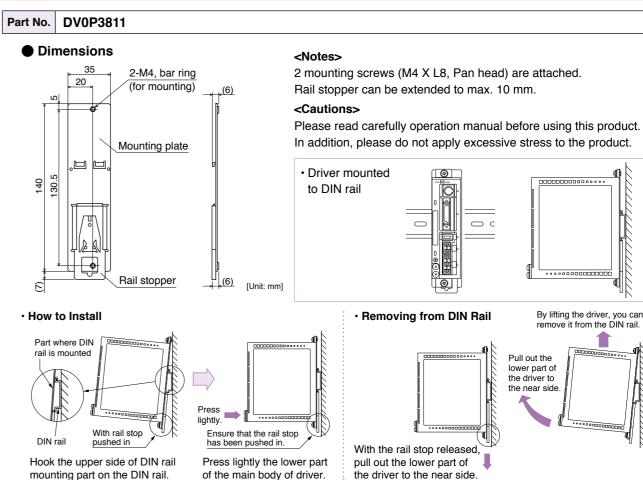


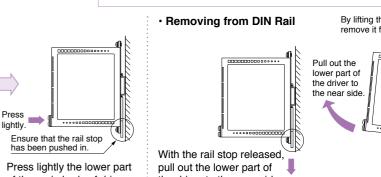
Console



DIN Rail Mounting Unit/ External Regenerative Resistor

DIN Rail Mounting Unit





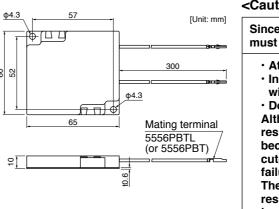
mounting part on the DIN rail.

of the main body of driver.

External Regenerative Resistor

			Specif				
Part No.	Manufacturer's Part No.	Resistance	Rated power	Activation temperature of built-in fuse	Note (Input Power of drive)		
		Ω	W	°C			
DV0P2890	45M03	50	10	137 ⁺³ ₋₂	Single phase, 100 V		
DV0P2891	45M03	100	10	137 ⁺³ ₋₂	Single/3-phase, 200 V		
L							

Dimensions



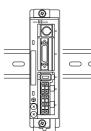
<Remarks>

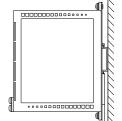
Thermal fuse is installed for safety.

The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation. Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Please carry out air cooling if needed.

E Series Options

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.





Manufactured by Iwaki Musen Kenkyuusho Co., Ltd.

<Caution of when using external regeneration resistor>

Since it becomes high temperature, external regeneration resistor must be installed according to the contents shown below.

- · Attach to incombustibles, such as metal.
- Install in the place which cannot touch directly by covering with incombustibles etc.
- · Do not install near the combustibles.

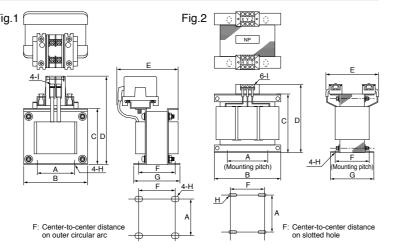
Although the thermal cutoff is built in external regeneration resistor, the skin temperature of regeneration resistor may become high exceeding the operating temperature of thermal cutoff by the time the thermal cutoff operates in amplifier failure.

The thermal cutoff is for preventing ignition of the regeneration resistor in amplifier failure, and is not for controlling the skin temperature of resistor.

E SeriesReactor/OptionsSurge Absorber for Motor Brake

Reactor

Frame symbol of driver	Power supply specifications	Rated output	Part No.	Fig.	F
	Single phase, 100 V	50 W to 100 W	DV0P227	1	
MKDE	Single phase, 200 V	50 W to 100 W	DV0P220	2	
	3-phase, 200 V	50 W to 200 W	DV0P220	2	
	Single phase, 100 V	200 W	DV0P228	1	
MLDE	Single phase, 200 V	200 W to 400 W	DV0P220	2	
	3-phase, 200 V	400 W			



[Unit: mm

	Part No.	А	в	с	D	E(Max)	F	G	н	I	Inductance (mH)	Rated current (A)
Ein 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

On September, 1994, Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system and Guidelines for harmonic restraint on household electrical appliances and generalpurpose articles established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004.

We inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver will be modified as follows.

- All types of the general-purpose inverters and servo drivers used by specific users are under the control of the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

<Remarks>

When using a reactor, be sure to install one reactor to one servo driver.

Recommended components

Surge Absorber for Motor Brake

Motor	Surge absorber for motor brake				
MOTOL	Part No. (Manufacturer's)	Manufacturer			
MUMA 50 W to 400 W	Z15D151	SEMITEC Corporation			

List of Peripheral Components

List of Peripheral Components

Manufacturer	Tel No. / Home Page	Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for motor brake
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	Noise filter for signal lines
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/	
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	Connector
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable

* The above list is for reference only. We may change the manufacturer without notice.

E Series Options

MEMO

Information

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A5 Family Conformance to International Standards

EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products.

However, our AC servos meet the relevant EC Directives for Low Voltage Equipment so that the machine or equipment comprising our AC servos can meet EC Directives.

EMC Directives

MINAS Servo System conforms to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1.
- (e.g. Install in the control box with IP54 enclosure.)
- (2) Make sure to install a circuit breaker or fuse which are UL recognized (Listed (1) marked) between the power supply and the noise filter.

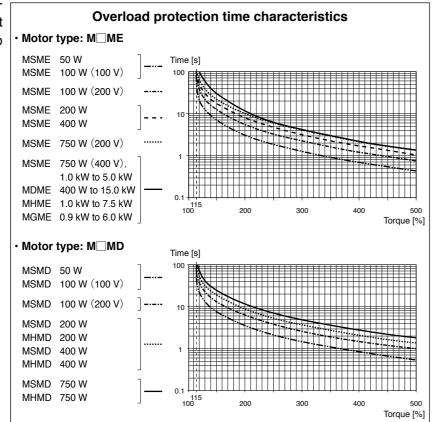
For rated current of circuit breaker and fuse, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

Use a copper cable with temperature rating of 75 °C or higher.

(3) Over-load protection level

Over-load protective function will be activated when the effective current exceeds 115 % or more than the rated current based on the time characteristics (see the graph). Confirm that the effective current of the driver does not exceed the rated current.

Set up the peak permissible current with Pr0.13 (Setup of 1st torque limit) and Pr5.22 (Setup 2nd torque limit).



Conformed Standards

		Driver
	ЕМС	EN55011
EC	Directives	EN61000-6-2
		EN61800-3
	Low-Voltage Directives	EN61800-5-1
Directives	Machinery Directives	ISO13849-1(PL d)(Cat.3
		EN61508(SIL2)
		EN62061(SILCL 2)
	Functional safety ^{*1}	EN61800-5-2(STO)
		IEC61326-3-1
UL Standard	S	UL508C (E164620)
CSA Standards		C22.2 No.14
Radio Waves Act		KN11
(South Korea	a) (KC) ^{*2}	KN61000-4-2, 3, 4, 5, 6,

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.

A 급 기기 (업무용 방송통신기자재)

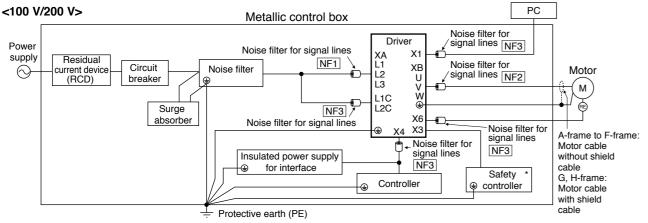
이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

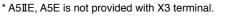
	Motor	A5 F
	_	A5 Family
	EN60034-1 EN60034-5	
3)		E Series
	—	
	UL1004-1, UL1004-6 (E327868)	Information
	C22.2 No.100	nation
, 8, 11	_	

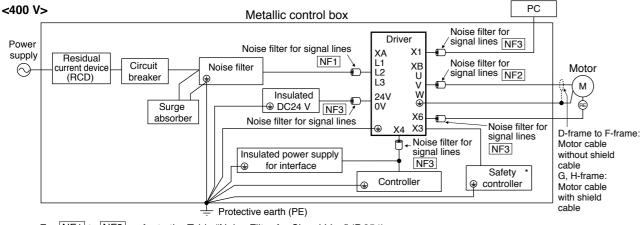
Installation Environment

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).





For NF1 to NF3, refer to the Table "Noise Filter for Signal Line" (P.254). * A5IIE, A5E is not provided with X3 terminal.

<Caution>

Use options correctly after reading Operating Instructions of the options to better understand the precautions. Take care not to apply excessive stress to each optional part.

Power Supply

100 V type (A-frame to C-frame)	Single phase, 100 V $^{+10}_{-15}$ % to $~120$ V $^{+10}_{-15}$ %	50 Hz/60 Hz
200 V type (A-frame to D-frame)	Single/3-phase, 200 V $^{+10\%}_{-15\%}$ to 240 V $^{+10\%}_{-15\%}$	50 Hz/60 Hz
200 V type (E-frame to H-frame)	3-phase, 200 V $^{+10}_{-15}$ % to 230 V $^{+10}_{-15}$ %	50 Hz/60 Hz
400 V type [Main power supply] (D-frame to H-frame)	3-phase, 380 V $^{+10\%}_{-15\%}$ to 480 V $^{+10\%}_{-15\%}$	50 Hz/60 Hz
400 V type [Control power supply] (D-frame to H-frame)	DC 24 V ±15 %	

(1) This product is designed to be used in over-voltage category (installation category) II 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

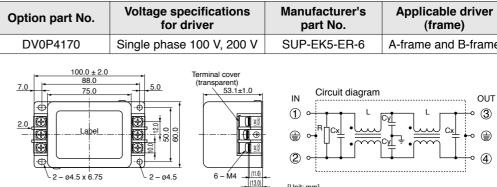
Install a circuit breaker which complies with IEC Standards and UL recognized (Listed and marked) between power supply and noise filter.

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



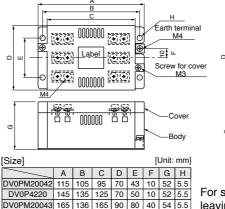
Option part No.	Voltage specifications for driver			Manufacturer	
	3-phase 200 V		A-frame and B-frame		
DV0PM20042	Single phase 100 V, 200 V 3-phase 200 V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.	
DV0P4220	Single/3-phase 200 V	3SUP-HU30-ER-6	D-frame		
DV0PM20043	3-phase 200 V	3SUP-HU50-ER-6	E-frame		

[DV0PM20042, DV0P4220]

[DV0PM20043]

節変

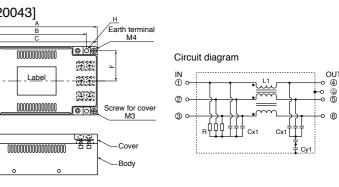
1976) 1976)



For single phase application, use 2 terminals among 3 terminals, leaving the remaining terminal unconnected.

Manufacturer's part No.	Applicable driver (frame)	Manufacturer
SUP-EK5-ER-6	A-frame and B-frame	Okaya Electric Ind.

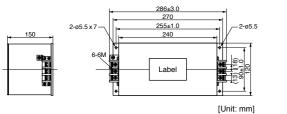
[Unit: mm]

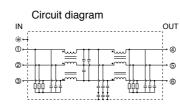


A5 Family Conformance to **International Standards**

Composition of Peripheral Equipments

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer	
DV0P3410	3-phase 200 V	3SUP-HL50-ER-6B	F-frame	Okaya Electric Ind.	





Recommended components

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A-frame to C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E-frame and F-frame	

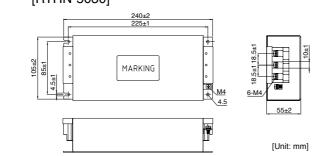
50+2

[Unit: mm]

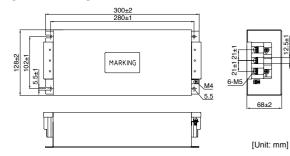








[RTHN-5050]

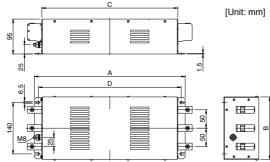


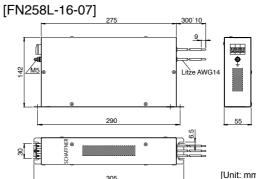
<Remarks>

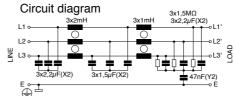
- · Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- · For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

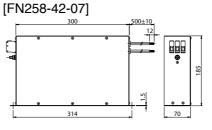
Part No.	Voltage specifications for driver	
FS5559-60-34	2 phase 200 V	Γ
FS5559-80-34	3-phase 200 V	
FN258L-16-07		
FN258L-30-07	2 phase 400 V	
FN258-42-07	3-phase 400 V	
FN258-42-33		

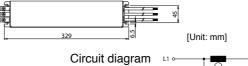
[FS5559-60-34, FS5559-80-34]

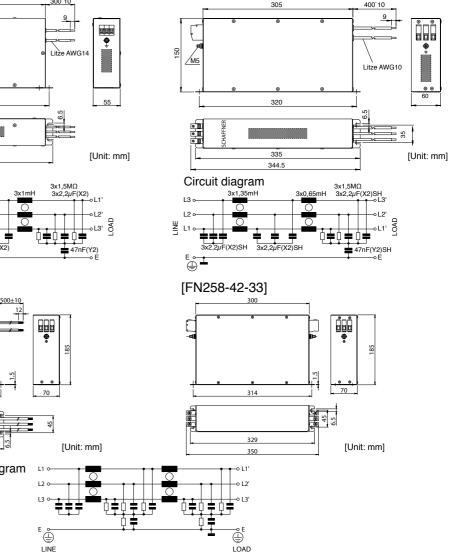






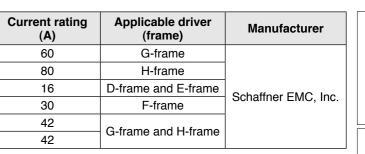


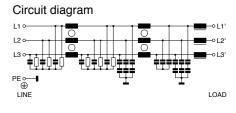


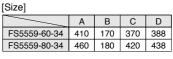


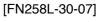
<Remarks>

- · For detailed specification of the filter, contact the manufacturer.
- the noise filter manufacturer.









• Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).

· When two or more servo drivers are used with a single noise filter at the common power source, consult with

Surge Absorber

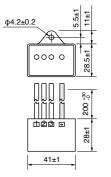
Provide a surge absorber for the primary side of noise filter.

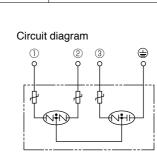
[Unit: mm]

UL-1015 AWG16

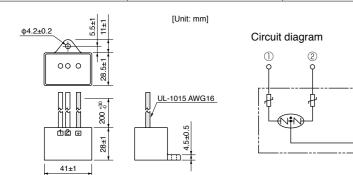
£0.5

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P1450	3-phase 200 V	R·A·V-781BXZ-4	Okaya Electric Ind.
DV0PM20050	3-phase 400 V	R·A·V-801BXZ-4	Okaya Electric ind.





Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P4190	Single phase 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric Ind.



Noise Filter for Signal Lines

Install noise filters for signal lines to all cables (power cable, motor cable, encoder cable and interface cable)

Install nui	Install holse lillers 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			
	Motor cable	A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4			
NF2		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.

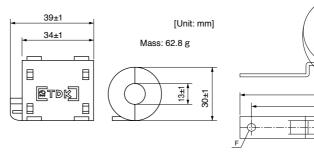
<Caution>

Fix the signal line noise filter in order to prevent excessive stress to the cables. <Fig.2: Dimensions>

Part No.	Current	100 kHz		Size [Unit: mm]						
Fait NO.	Current	(µH)	А	В	С	D1	D2	Core thickness	E	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

- trol box without fail to prevent electrical shocks.
- tive earth.

<Note>

For driver and applicable peripheral equipments, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

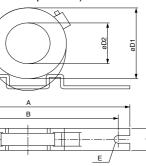
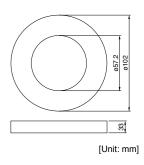


Fig.3: T400-61D (Recommended components)



(1) Connect the protective earth terminal $(\textcircled{\pm})$ of the driver and the protective earth terminal (PE) of the con-

(2) Do not make a joint connection to the protective earth terminals ((1)). 2 terminals are provided for protec-

Compliance to EC and EMC Directives Composition of Peripheral Components

Compliance to EC and EMC Directives

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		IEC : International Electrotechnical Commission
Motor	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to	EN : Europaischen Normen
	EN50178	UL508C CSA22.2 No.14	Low- Voltage Directives	EMC: Electromagnetic Compatibility UL : Underwriters Laboratories
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment		CSA : Canadian Standards Association
	EN61000-6-2	Immunity for Industrial Environments]	Pursuant to at the directive 2004/108/EC.article 9
	IEC61000-4-2	Electrostatic Discharge Immunity Test	Conforms to	$\begin{bmatrix} -2004/100/EC, at the directive 2004/100/EC, at the 9(2) \\ \end{bmatrix}$
Motor	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	references	Panasonic Testing Centre
and driver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives	Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH
	IEC61000-4-5	Lightening Surge Immunity Test]	Winsbergring 15,22525 Hamburg, F.R. Germany
	IEC61000-4-6	High Frequency Conduction Immunity Test	1	
	IEC61000-4-11	Instantaneous Outage Immunity Test	7	

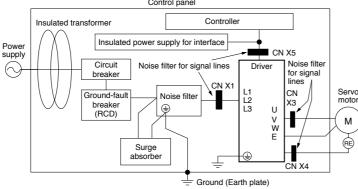
Composition of Peripheral Components

<Precautions 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 nane

Installation Environment

Use Minas driver in environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



Power Supply

100 V system	Single phase, 100 V $^{+10\%}_{-15\%}$ to 115 V $^{+10\%}_{-15\%}$	50 Hz/60 Hz
200 V system	Single phase, 200 V $^{+10\%}_{-15\%}$ to 240 V $^{+10\%}_{-15\%}$	50 Hz/60 Hz
200 V system	3-phase, 200 V $^{+10\%}_{-15\%}$ to 240 V $^{+10\%}_{-15\%}$	50 Hz/60 Hz

(1) Use the power supply under an environment of Overvoltage Category II specified in IEC60664-1.

(2) For a interface power supply, use the insulated one with 12 VDC to 24 VDC which conforms to CE Marking or EN Standards (EN60950).

Circuit Breaker

Connect a circuit breaker which conforms to IEC standards and is UL recognized (UL Listed, (h) marked), between the power supply and the noise filter.

Composition of Peripheral Components Conformity to UL Standards

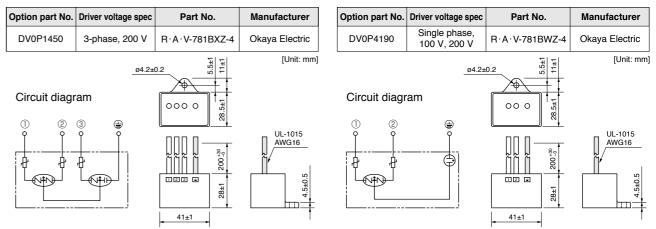
Noise Filter

When you install one noise filter in the power supply for multi axis application, consult with the manufacture of the filter.

Option part No.	Part No.	Manufa		
DV0P4160	3SUP-HU10-ER-6	Okaya Electric I		

Surge Absorber

Install a surge absorber at primary side of the noise filter.



<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 malfunction

Please insert line noise filters between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "peripheral equipment configuration".)

Grounding

fail to prevent electrical shocks.

(2) Do not co-clamp to the ground terminals ((\perp)). Two ground terminals are provided.

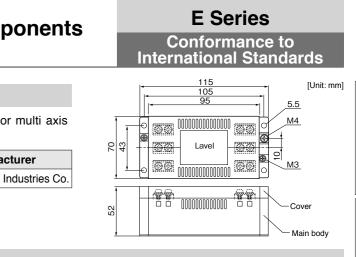
Ground-Fault Breaker

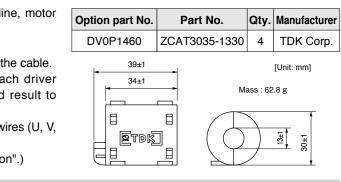
Install a ground fault curcuit braker (RCD) to the primary side of the power supply. Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (File No. E164620). with IP54 enclosure.)

noise filter without fail.





(1) Connect the protective earth terminal of the driver ((-)) and protective earth terminal of the control panel (PE) without

```
(1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box
```

(2) Install a circuit breaker or fuse which are UL recognized (LISTED (9) marked) between the power supply and the

AC Servo Motor Capacity Selection Software **Option Selection Software for AC Servo Motor**

AC Servo Motor Capacity Selection Software

We have prepared PC software "M-SELECT" for AC servo motor capacity selection. Consult our sales representative or authorized distributor.

Three-step selection

1. Select components and specified values Select appropriate mechanical parameter items and fill them with parameter values derived from

the real machine. To simulate the target machine as practical as possible, use maximum number of parameters available.

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2. Enter operation pattern

Input the planned operation pattern that will contain [speed and rotation

standard] with optional settings such as S-acceleration/de celeration.

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and the second			 -	
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	-	-		
-	-		 _	-1

3. Select the 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.

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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		Carl Courts ages		50 S
1. Selection according to driver series and motor type	Driver series -		Andrew of state	MINAS A.5
Suitable option can be selected by selecting driv series, motor type and motor specification throug pulldown menu.	Motor type -	ENG-	2 April 2010 And a gas to part another serves a an advance of an April 2010 and an advance on an April 2010 and an advance of a serve and a serve of a serve of a serve of a and a serve of a serve of a serve of a and a serve of a serve of a serve of a and a serve of a serve of a serve of a and a serve of a serve of a serve of a and a serve of a serve of a serve of a and a serve of a serve of a serve of a and a serve of a serve of a serve of a serve of a and a serve of a serve of a serve of a serve of a and a serve of a and a serve of a and a serve of a and a serve of a and a serve of a and a serve of a and a serve of a	
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2. Entry of model number If you know the model number based on the servo motor and driver currently used, enter the model		Consider Considering Const Construction Const Construction Constructio	an al 1111 	States data sector and to and to an
number. Result of selection	Tab —►		(Simony Window Jone	I me transfer i de l'ouri
Tab sheet specific to each of option model number is used for easier identification of the desired option		Animatic and Anima	sen!	3
* When you are using the motor capacity selection software, simply press [Option Selection] tab and			Sect."	1
the screen as shown right will appear.		The Manuscone and Source March 2010 and and	1996	

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

Organization of the System of Units

SI unit — Table1: Basic unit Table 2: Auxiliary unit

Table 4 : Unit combined with SI unit

Table1: Basic unit

			_		•	
Quantity	Name of unit	Symbol of unit		Quantity	Name of unit	Symbol of unit
Length	meter	m		Plane angle	radian	rad
Weight	kilogram	kg		Flatte aligie	Taulan	Tau
Time	second	s	1	Solid angle	steradian	sr
Current	ampere	А				
Thermodynamic temperature	kelvin	К				
Amount of substance	mol	mol				
Luminous intensity	candela	cd				

Table 3: Major derived unit with proper name

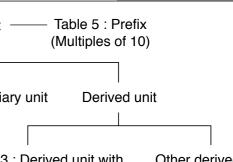
Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1 Hz = 1 s ⁻¹
Force	newton	N	1 N = 1 kg⋅m/s²
Pressure, Stress	pascal	Pa	1 Pa = 1 N/m ²
Energy, Work, Amount of heat	joule	J	1 J = 1 N·m
Amount of work, Work efficiency, Power, Electric power	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	antity Name S		Symbol of unit Multiples powered		efix
Quantity		-	to unit	Name	Symbol
	minute	min	10 ¹⁸	exa	E
Time	hour	h	10 ¹⁵	peta	Р
TIMO	nine noui		10 ¹²	tera	Т
	day	d	10 ⁹	giga	G
		•	10 ⁶	mega	М
	degree		10 ³	kilo	k
Plana angla	minute		10 ²	hecto	h
Plane angle minute		10	deca	da	
	second	"	10 ⁻¹	deci	d
			10 ⁻²	centi	С
Volume	liter	I, L	10 ⁻³	milli	m
M/siskt	4		10 ⁻⁶	micro	μ
Weight	ton	t	10 ⁻⁹	nano	n
		1	10 ⁻¹²	pico	р
			10 ⁻¹⁵	femto	f
			10 ⁻¹⁸	atto	а



Guide to the International System of Units (SI)



Other derived unit Table 3 : Derived unit with proper name

Table 2: Auxiliary unit

Table 5: Prefix

Guide to the International System of Units (SI)

Major Compatible Unit

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	_	
Mass	_	kg	Same value
Weight flow rate	kgf/s	_	
Mass flow rate	_	kg/s	Same value
Specific weight	kgf/m ³	-	
Density	_	kg/m ³	Same value
Specific volume	m ³ /kgf	m ³ /kg	Same value
Load	kgf	N	1 kgf = 9.80665 N
Force	kgf	N	1 kgf = 9.80665 N
	dyn	N	$1 \text{ dyn} = 10^{-5} \text{ N}$
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	$1 \text{ kgf/cm}^2 = 9.80665 \times 10^4 \text{ Pa}$
T Tessure	NGI/CITI		= 0.980665 bar
	at (Engineering atmospheric pressure)	Pa	$1 \text{ at} = 9.80665 \text{ x} 10^4 \text{ Pa}$
	atm (Atmospheric pressure)	Pa	$1 \text{ atm} = 1.01325 \times 10^5 \text{ Pa}$
		Pa	$1 \text{ mH}_2\text{O} = 9.80665 \text{ x} 10^3 \text{ Pa}$
	mH₂O, mAq	Pa or mmHg ⁽²⁾	1 mmHg = 133.322 Pa
	mmHg	-	1 mmg – 133.322 Fa
0	Torr	Pa Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
Stress	kgf/mm ²	Pa or N/m-	
		D	=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	$1 \text{ kgf/cm}^2 = 9.80665 \times 10^4 \text{ Pa}$
			$= 9.80665 \times 10^4 \text{ N/m}^2$
Elastic modulus	kgf/m ²	Pa or N/m ²	$1 \text{ kgf/m}^2 = 9.80665 \text{ Pa} = 9.80665 \text{ N/m}$
			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	$1 \text{ erg} = 10^{-7} \text{ J}$
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
Kinetic viscosity	St	mm²/s	10^{-2} St = 1 mm ² /s
Thermodynamic temperature	К	K (kelvin)	1 K = 1 K
Temperature interval	deg	K ⁽³⁾	1 deg = 1 K
Amount of heat	cal	J	1 cal = 4.18605 J
Heat capacity	cal/°C	J/K ⁽³⁾	1 cal/°C = 4.18605 J/K
Specific heat, Specific heat capacity	cal/ (kgf⋅°C)	cal/ (kgf·K) ⁽³⁾	1 cal/ (kgf⋅°C) = 4.18605 J/ (kg⋅K)
Entropy	cal/K	J/K	1 cal/K = 4.18605 J/K
Specific entropy	cal/ (kgf·K)	J/(kg·K)	1 cal/ (kgf·K) = 4.18605 J/ (kg·K)
Internal energy (Enthalpy)	cal	J	1 cal = 4.18605 J
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1 cal/kgf = 4.18605 J/kg
Heat flux	cal/h	W	1 kcal/h = 1.16279 W
Heat flux density	cal/ (h·m²)	W/m ²	1 kcal/ (h⋅m²) = 1.16279 W/m²
Thermal conductivity	cal/ (h⋅m⋅°C)	W/ (m·K) ⁽³⁾	1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)
Coefficient of thermal conductivity	cal/ (h⋅m²⋅°C)	W/ (m ² ·K) ⁽³⁾	1 kcal/ (h·m ² ·°C) = 1.16279 W/ (m ² ·K
Intensity of magnetic field	Oe	A/m	1 Oe = 10 ³ / (4π) A/m
Magnetic flux	Мх	Wb (weber)	$1 \text{ Mx} = 10^{-8} \text{ Wb}$
-	Gs,G	T (tesla)	1 Gs = 10 ⁻⁴ T

Note

(1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard. (2) Applicable to scale or indication of blood pressure manometers.

(3) "°C" can be substituted for "K".

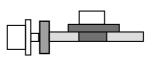
Flow of Motor Selection

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

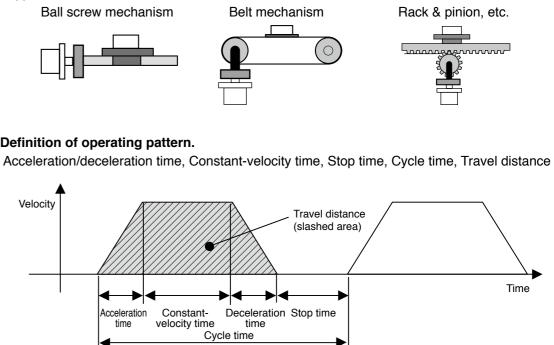
<Typical mechanism>

Ball screw mechanism





2. Definition of operating pattern.



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 "× 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.

Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

Description on the Items Related to Motor Selection

1. Torque

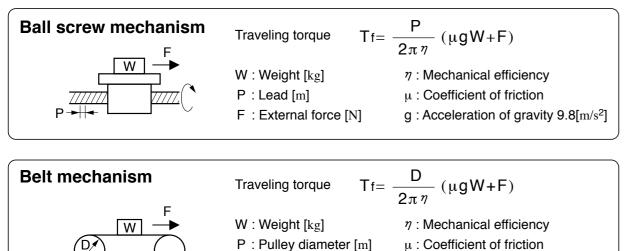
(1) Peak torque

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



(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.

F : External force [N]

g : Acceleration of gravity 9.8[m/s²]

$$Trms = \sqrt{\frac{Ta^{2} \times ta + Tf^{2} \times tb + Td^{2} \times td}{tc}}$$

$$Ta: Acceleration torque [N·m] ta: Acceleration time [s] tc: Cycle time [s]$$

$$Tf: Traveling torque [N·m] tb: Constant-velocity time [s] (Run time + Stop time)$$

$$Td: Deceleration torque [N·m] td: Deceleration time [s]$$

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later.

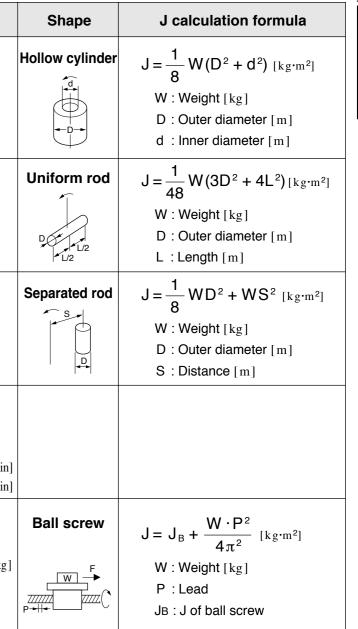
3. Inertia and inertia ratio

Inertia is like the force to retain the current moving condition. Inertia ratio is calculated by dividing load inertia by rotor inertia. Generally, for motors with 750 W or lower capacity, the inertia ratio should be "20" or less. For motors with 1000 W or higher capacity, the inertia ratio should be "10" or less. If you need quicker response, a lower inertia ratio is required. (For example, when the motor takes several seconds in acceleration step, the inertia ratio can be further) increased.

General inertia calculation method

Shape	J calculation formula
Disk	$J = \frac{1}{8} WD^{2} [kg \cdot m^{2}]$
	W : Weight [kg]
Ţ	D : Outer diameter [m]
Prism	$J = \frac{1}{12} W (a^2 + b^2) [kg \cdot m^2]$
	W : Weight [kg]
ab	a, b, c : Side length [m]
Straight rod	$J = \frac{1}{3} WL^2 [kg \cdot m^2]$
· L · ·	W:Weight[kg]
	L : Length [m]
Reduction gear	Inertia on shaft "a"
	$J = J_1 + (\frac{n_2}{n_1})^2 J_{2[kg \cdot m^2]}$
	n_1 : A rotational speed of a shaft [r/min n_2 : A rotational speed of b shaft [r/min
Conveyor	$J = \frac{1}{4} W D^2 [kg \cdot m^2]$
	W : Workpiece weight on conveyor [kg
	D : Drum diameter [m]
	* Excluding drum J

If weight (W [kg]) is unknown, calculate it with the following formula: Weight W[kg]=Density ρ [kg/m³] x Volume V[m³] Density of each material Iron ρ =7.9 x 10³ [kg/m³] Brass ρ =8.5 x 10³ [kg/m³]

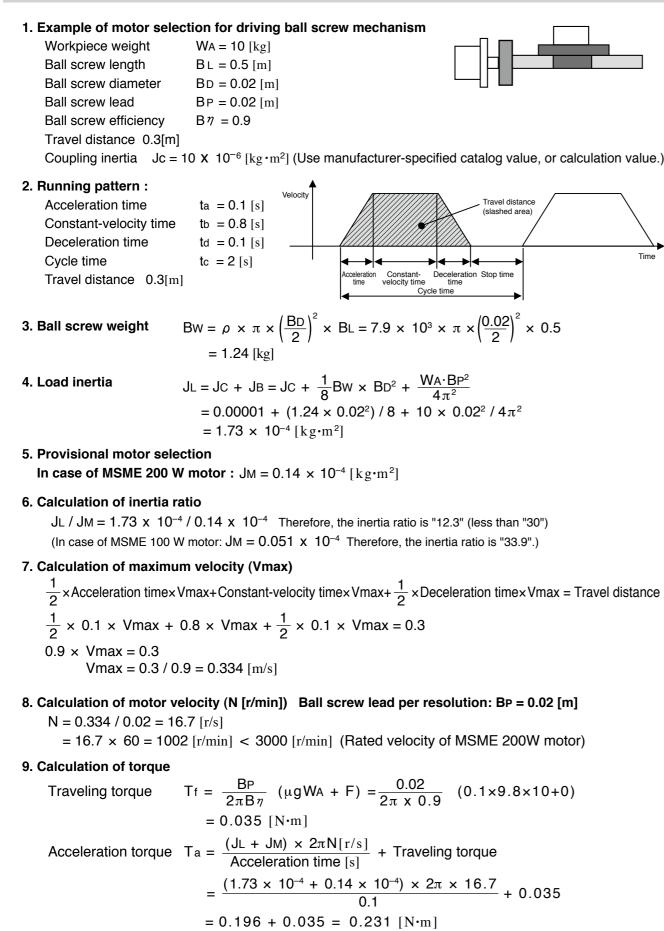


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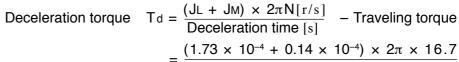
Informatio

A5 Family

To Drive Ball Screw Mechanism



To Drive Ball Screw Mechanism **Example of Motor Selection**



10. Verification of maximum torque

11. Verification of effective torque

$$Trms = \sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times tc}{tc}}$$
$$= \sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8}{2}}$$
$$= 0.067 [N:m] < 0.64 [N:m] (Bat$$

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torgue margin is significantly large.

Example of Motor Selection

Example of me	otor selection for timing	g belt mec
1.Mechanism	Workpiece weight	WA = 2[kg]
	Pulley diameter	PD = 0.05
	Pulley weight	WP= 0.5[]
	Mechanical efficiency	$B\eta = 0.8$
	Coupling inertia	Jc = 0 (D
	Belt mechanism inertia	Jв
	Pulley inertia	JP

2. Running pattern

5		Velecity
Acceleration time	ta = 0.1[s]	Velocity
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
$$JL = JC + JB + JP$$

= $JC + \frac{1}{4}WA \times PD^{2} + \frac{1}{8}WP \times PD^{2} \times$
= $0 + \frac{1}{4} \times 2 \times 0.05^{2} + \frac{1}{8} \times 0.5 \times 0.$
= $0.00156 = 15.6 \times 10^{-4} [kg \cdot m^{2}]$

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

Selecting Motor Capacity

 $=\frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} - 0.035$ $0.35 = 0.161 [N \cdot m]$

Acceleration torque = $T_a = 0.231 [N \cdot m] < 1.91 [N \cdot m]$ (Maximum torque of MSME 200 W motor)

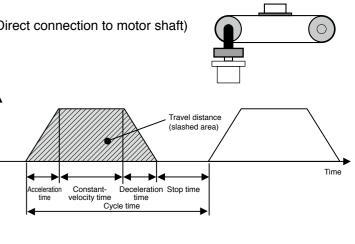
 $8 + 0.161^2 \times 0.1$

 $= 0.067 [N \cdot m] < 0.64 [N \cdot m]$ (Rated torque of MSME 200 W motor)

chanism g] (including belt)

5[m]

[kg] (Use manufacturer-specified catalog value, or calculation value.)



2

 $.05^2 \times 2$

 $JL / JM = 15.6 \times 10^{-4} / 0.87 \times 10^{-4}$ Therefore, the inertia ratio is "17.9" (less than "20")

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6. Calculation of maximum velocity (Vmax)

$$\frac{1}{2} \times \text{Acceleration time} \times \text{Vmax} + \text{Constant-velocity time} \times \text{Vmax} + \frac{1}{2} \times \text{Deceleration time} \times \text{Vmax} = \text{Travel distance}$$

$$\frac{1}{2} \times 0.1 \times \text{Vmax} + 0.8 \times \text{Vmax} + \frac{1}{2} \times 0.1 \times \text{Vmax} = 1$$

$$0.9 \times \text{Vmax} = 1$$

$$\text{Vmax} = 1 / 0.9 = 1.111 \text{[m/s]}$$

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	$Tf = \frac{PD}{2\eta} (\mu gWA + F) = \frac{0.05}{2 \times 0.8} (0.1 \times 9.8 \times 3 + 0)$
	= 0.061[N·m]
Acceleration torque	$T_{a} = \frac{(JL + JM) \times 2\pi N[r/s]}{1 + Traveling torque} + Traveling torque$

Acceleration time[s]
=
$$\frac{(15.6 \times 10^{-4} + 0.87 \times 10^{-4}) \times 2\pi \times 7.08}{0.1} + 0.061$$

= 0.751 + 0.061 = 0.812[N·m]

Deceleration torque
$$T_{d} = \frac{(JL + JM) \times 2\pi N[r/s]}{Deceleration time[s]} - Traveling torque$$
$$= \frac{(15.6 \times 10^{-4} + 0.87 \times 10^{-4}) \times 2\pi \times 7.08}{0.1} - 0.061$$
$$= 0.751 - 0.061 = 0.69[N \cdot m]$$

9. Verification of maximum torque

 $Ta = 0.812[N \cdot m] < 7.1[N \cdot m]$ (Maximum torque of MSME 750 W motor) Acceleration torque

10. Verification of effective torque

$$Trms = \sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$
$$= \sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$$
$$= 0.241 [N \cdot m] < 2.4 [N \cdot m] \text{ (Rated torque of MSME 750 W motor)}$$

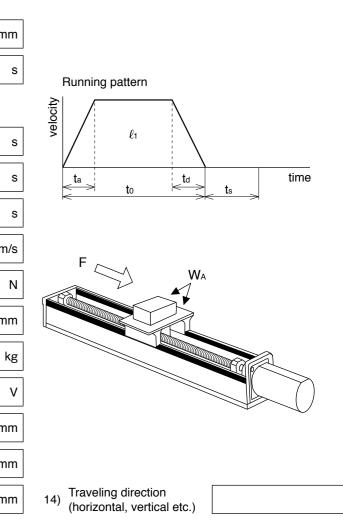
11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

Request Sheet for Motor Selection

Reque	est for mo	otor sele
1. Driven mechanism and	running o	lata
1) Travel distance of the work load per one cycle	ℓ ₁ :	mr
2) Cycle time	to:	
(Fill in items 3) and 4) if required	.)	
3) Acceleration time	ta:	
4) Deceleration time	td:	
5) Stopping time	ts:	
6) Max. velocity	V:	mm
7) External force	F:	
8) Positioning accuracy of the work load	±	mi
 9) Total weight of the work load and the table 	WA:	k
10) Power supply voltage		,
11) Diameter of the ball screw		mi
12) Total length of the ball		mi
13) Lead of the ball screw		mi

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

ection I : Ball screw drive



A5 Family

Company name :	
Department/Section :	
Name :	
Address :	
Tel :	
Fax :	
E-mail address:	

Request for motor selection II: Timing pulley + Ball screw drive

1. Driven mechanism and running data

1.1	Driven mechanism and	d running data		Motor side	Ball screw side
1)	Travel distance of the work load per one cycle	ℓ 1: mm	15) Diameter of the pulley	D ₁ : mm	D ₂ : mm
2)	Cycle time	to: s	16) Weight of the pulley	W1: kg	W2: kg
	(Fill in items 3) and 4) if require	ed.)	(or item 17) and 18))		
3)	Acceleration time	ta: s	17) Width of the pulley	L1:	mm
4)	Deceleration time	td: s	18) Material of the pulley		
5)	Stopping time	ts: s	19) Weight of the belt	W _M :	kg
6)	Max. velocity	V: mm/s	Running pattern		
7)	External force	F: N		\backslash	
8)	Positioning accuracy of the work load	± mm	l locity ℓ1		
9)	Total weight of the work load and the table	WA: kg	ta to	td ts	time
10)	Power supply voltage	V	F	WA	
11)	Diameter of the ball screw	mm			
12)	Total length of the ball screw	mm			
13)	Lead of the ball screw	mm			D2(W2)
14)	Traveling direction (horizontal, vertical etc.)			D1(W1)	₩м

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:

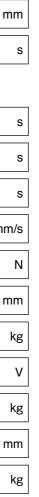
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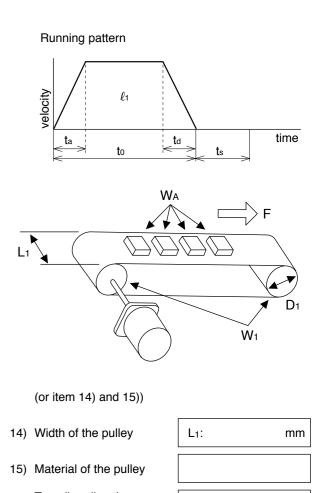
Req	uest for motor s
1. Driven mechanism and r	unning data
1) Travel distance of the work load per one cycle	ℓ 1: n
2) Cycle time	to:
(Fill in items 3) and 4) if required.))
3) Acceleration time	ta:
4) Deceleration time	td:
5) Stopping time	ts:
6) Max. velocity	V: mn
7) External force	F:
 8) Positioning accuracy of the work load 	± n
9) Total weight of the work load	WA:
10) Power supply voltage	
11) Weight of the belt	W _M :
12) Diameter of the driving pulley	D1: n
13) Total weight of the pulley	W1:

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Request Sheet for Motor Selection

selection III : Belt drive





16) Traveling direction (horizontal, vertical etc.)

L1:	mm

Company name :
Department/Section :
Name :
Address :
Tel :
Fax :
E-mail address:

Request for motor selection \mathbb{IV} : Timing pulley + Belt drive

1. Driven mechanism and running data

		isin an		iiiiig	uulu				Motor si	ide	Bel	t side)
1)	Travel distance of the load per one cycle	e work	l 1:		mm	16)	Diameter of the pulley	D	3:	mm	D4:	r	mm
2)	Cycle time		to:		S	17)	Weight of the pulley	W	3:	kg	W4:		kg
	(Fill in items 3) and 4	4) if requi	red.)				(or item 18) and 19))						
3)	Acceleration time		ta:		s	18)	Width of the pulley		L2:		n	nm	
4)	Deceleration time		td:		S	19)	Material of the pulley						
5)	Stopping time		ts:		S	20)	Weight of the belt		WL:			kg	
6)	Max. velocity		V:		mm/s	21)	Traveling direction (horizontal, vertical et	c.)					
7)	External force		F:		Ν	F	Running pattern						
8)	Positioning accuracy work load	of the	±		mm								
9)	Total weight of the we	ork	WA:		kg		دelocity ر		\backslash				
10)	Power supply voltage	e			V		<ta>ta < to to</ta>	td	> ts	->	time		
11)	Weight of motor side	e belt	WM:		kg							ק× י	L2
		Motor s	ide	Belt	side					W			_2
12)	Diameter of the Dulley	D ₁ :	mm	D ₂ :	mm			WA			\mathbf{X})
13)	Weight of the W	/ 1:	kg	W2:	kg		D2(W2)			S	,	D₄(W	(4)
	(or item 14) and 15)))					WM	Q					
14)	Width of the L	_1:		mm		(~	- Carlos - C	-	\sim	D3	(W3)		
15)	Material of the pulley						D1(W1)						

1. Driven mechanism and running data								
1)	Travel distance of the work load per one cycle	d1:	deg					
2)	Cycle time	to:	S					
(Fill in items 3) and 4) if required.)								
3)	Acceleration time	ta:	s					
4)	Deceleration time	td:	S					
5)	Stopping time	ts:	s					
6)	Max. rotational speed of the table	v:	deg/s					
	(or)	V:	r/s					
7)	Positioning accuracy of the work load	±	deg					
8)	Weight of one work load	WA:	kg					
9)	Driving radius of the center of gravity of the work	R1:	mm					
10)	Diameter of the table	D1:	mm					
11)	Mass of the table	W1:	kg					

12) Diameter of the table support

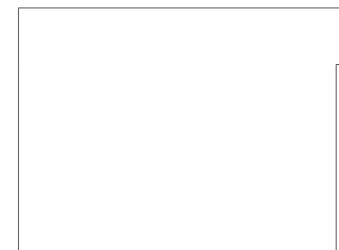
13) Power supply voltage

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Company name :
Department/Section :
Name :
Address :
Tel :
Fax :
E-mail address:

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

T1:



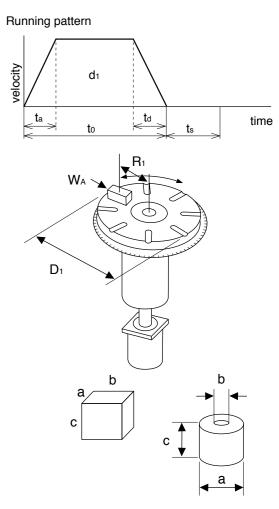
Request Sheet for Motor Selection

mm

V

Request for motor selection V : Turntable drive

Prism Cylinder Dimensions of the 14) a: mm a: mm work load b: mm b: mm c: mm c: mm 15) Number of work loads pcs



Company name :	
Department/Section :	
Name :	
Address :	
Tel :	
Fax :	
E-mail address:	

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Request for motor selection VI : Timing pulley + Turntable drive

1. Driven mechanism and running data

1.1	Driven mechan	iism an	id rur	ining data			Moto	or side	Turnt	able side
1)	Travel distance of the load per one cycle	ne work	d1:	deg	16)	Diameter of the pulley	D2:	mm	D3:	mm
2)	Cycle time		to:	S	17)	Weight of the pulley	W2:	kg	W3:	kg
	(Fill in items 3) and	4) if requi	ired.)			(or item 18) and 19))				
3)	Acceleration time		ta:	S	18)	Width of the pulley		L1:		mm
4)	Deceleration time		td:	S	19)	Material of the pulley				
5)	Stopping time		ts:	S	20)	Weight of the belt		WM:		kg
6)	Max. rotational spee table	ed of the	v:	deg/s]	Running pattern				
		(or)	V:	r/s]					
7)	Positioning accuract	y of the	±	deg]	d1		\setminus		
8)	Weight of one work	load	WA:	kg]	ta to	< td	⇒ ts		time
9)	Driving radius of the of gravity of the wor		R1:	mm]			R 1	21	
10)	Diameter of the tabl	e	D1:	mm]	V	VA			
11)	Mass of the table		W1:	kg]	ν.	D1			
12)	Diameter of the tabl support	е	T1:	mm]					
13)	Power supply voltage	ge		V]	D2(W2)		\mathbb{H}	◀	D- 14/
	_	(Prisr	m)	(Cylinder)	-		<u> </u>		L	D3(W3)
14)	Dimension of the work load	a:	mm	a: mm			` v	Vм		b
		b:	mm	b: mm]	a /	b	_		↓
		C:	mm	c: mm]	c		a		
15)	Number of work load	ds		pcs			_			<mark>c →</mark>

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Company name :
Department/Section :
Name :
Address :
Tel :
E-mail address:

Request Sheet for Motor Selection Request for motor selection VII : Roller feed drive 1. Driven mechanism and running data 1) Travel distance of the work load per one cycle ℓ1: mm Running pattern 2) Cycle time to: s /elocity (Fill in items 3) and 4) if required.) l1 3) Acceleration time ta: s ta 4) Deceleration time td: s 5) Stopping time ts: s 6) Max. velocity V: mm/s

F: ± D1: W1:

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

7) External pulling force

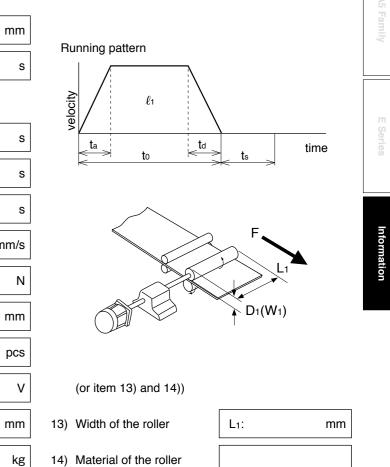
9) Number of rollers

10) Power supply voltage

11) Diameter of the roller

12) Mass of the roller

8) Positioning accuracy of the work load



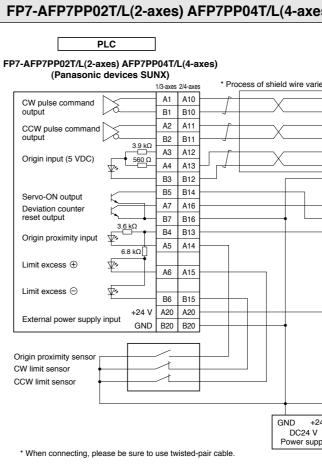
Company name :	
Department/Section :	
Name :	
Address :	
Tel :	
Fax :	
E-mail address:	

Request for motor selection VII: Driving with Rack & Pinion

1. Driven mechanism and running data Travel distance of the work load per one cycle ℓ1: mm 2) Cycle time to: s (Fill in items 3) and 4) if required.) Running pattern 3) Acceleration time ta: s 4) Deceleration time td: relocity l1 5) Stopping time ts: S ta td time to ts V: 6) Max. velocity mm/s 7) External force F: Ν WA v Positioning accuracy of the 8) work load ± mm WA: 9) Total weight of the work load kg 10) Power supply voltage V 5 Wз 11) Diameter of the pinion D3: mm Dз W3: 12) Mass of the pinion kg Traveling direction 13) (horizontal, vertical, etc.)

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Connection Between Driver and Controller

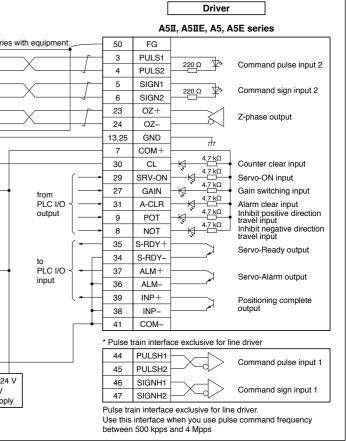


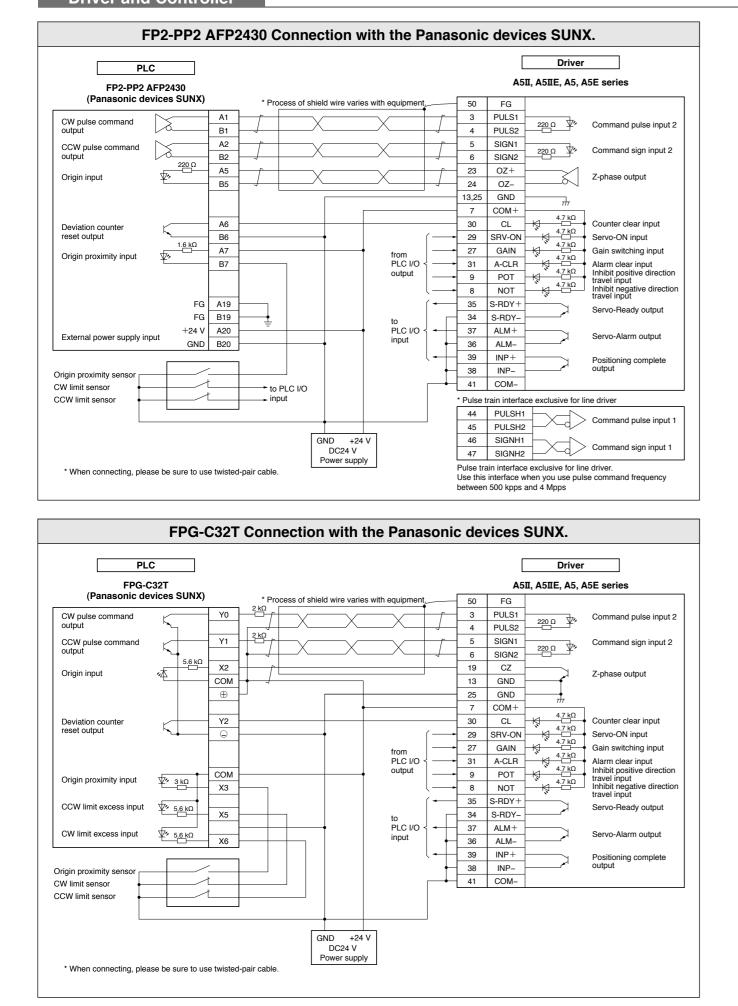
FPG-PP12	AFPO	G432	Conr	nectio	on
PLC FPG-PP12 AFPG432 (Panasonic devices SUNX)		* Proc	cess of st	nield wire	varie
CW pulse command output CCW pulse command output Origin input	A1 B1 A2 B2 A4 B3			X X X	
Deviation counter reset output Origin proximity input	A7 B7 B4 A5				
FG FG ±24 V External power supply input GND	A19 B19 A20 B20				
Origin proximity sensor CW limit sensor CCW limit sensor		to	PLC I/O		
* When connecting, please be sure to use	twisted-pa	air cable.		GND DC2 Power	

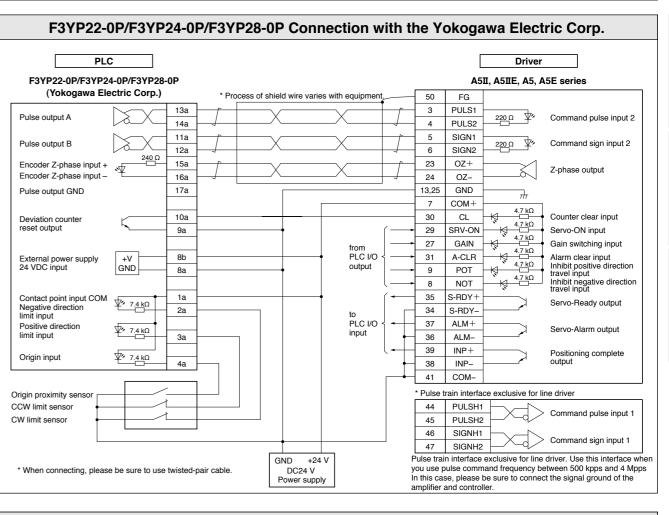
A5 Family **Connection Between Driver and Controller**

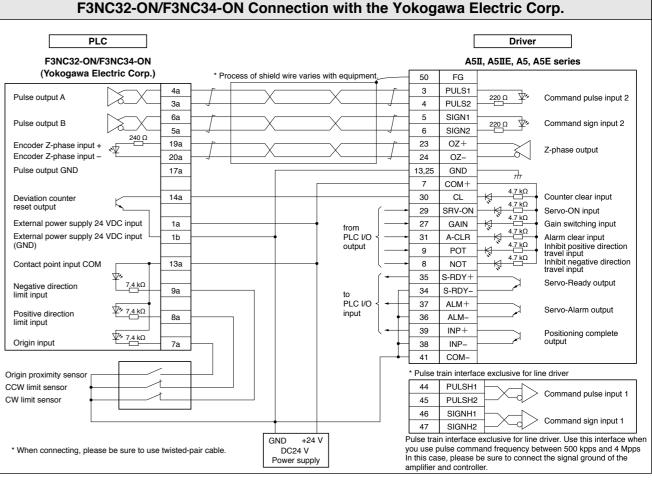
s) Connectio		the P	anasonic	devices SUN
		Г		
		L	Driver	
		A5	II, A5IIE, A5, A	5E series
ies with equipment.	50	FG		
	3	PULS1	220 Ω 🖓	0
	4	PULS2	<u>220 Ω</u> ¥*	Command pulse input 2
	- 5	SIGN1		Command sign input 0
	6	SIGN2	220 Ω ¥*	Command sign input 2
r	23	OZ+	1	Z phase output
	24	OZ-	&	Z-phase output
	13,25	GND		
	- 7	COM+		
	- 30	CL	4.7 kΩ	Counter clear input
	29	SRV-ON	4.7 kΩ	Servo-ON input
• (—	→ 27	GAIN	4.7 kΩ	Gain switching input
from PLC I/O <	→ 31	A-CLR	4.7 kΩ	Alarm clear input
output	→ 9	POT	4.7 kΩ	Inhibit positive direction travel input
	- 8	NOT	4.7 kΩ	Inhibit negative direction travel input
(-	35	S-RDY+	·	Servo-Ready output
to	34	S-RDY-	A	Servo-neady output
	37	ALM+		Servo-Alarm output
input	36	ALM-	ha	Servo-Alarm output
	- 39	INP+		Positioning complete
•	38	INP-	الم	output
	41	COM-		
	* Pulse t	train interfa	ce exclusive for li	ne driver
	44	PULSH1		Command pulse input 1
	45	PULSH2		Commanu puise input 1
4 V	46	SIGNH1		Command sign insut 1
oly	47	SIGNH2	$\vdash \land \triangleleft$	Command sign input 1
ply	Use this	interface w	e exclusive for line when you use puls and 4 Mpps	e driver. se command frequency

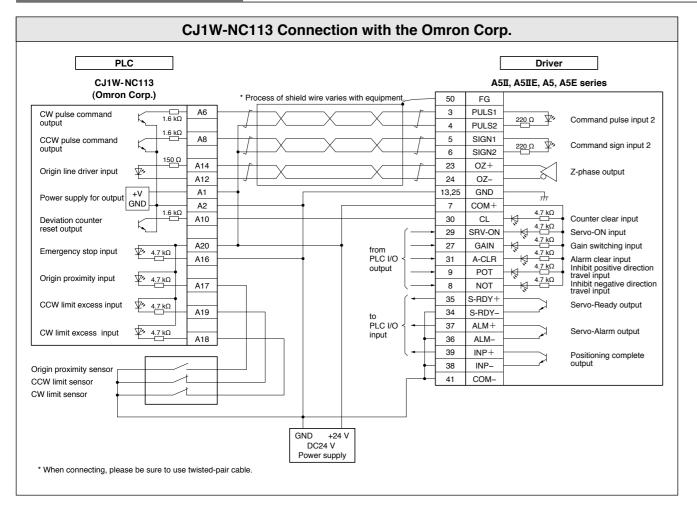
with the Panasonic devices SUNX.

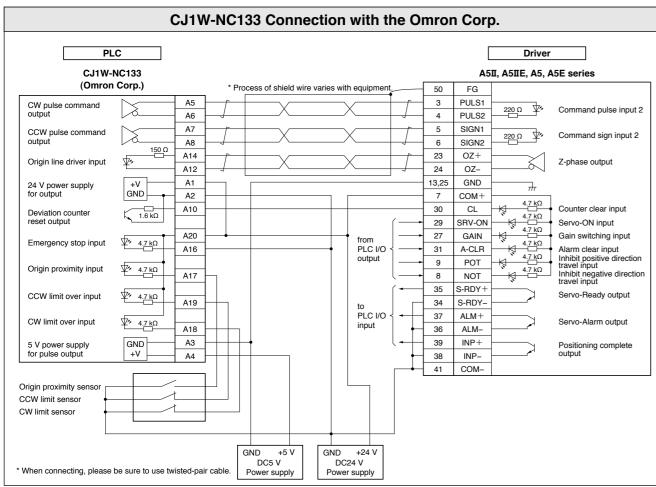


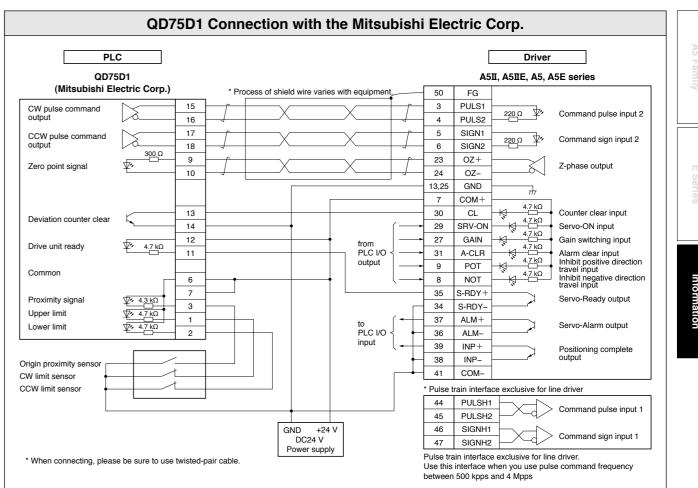


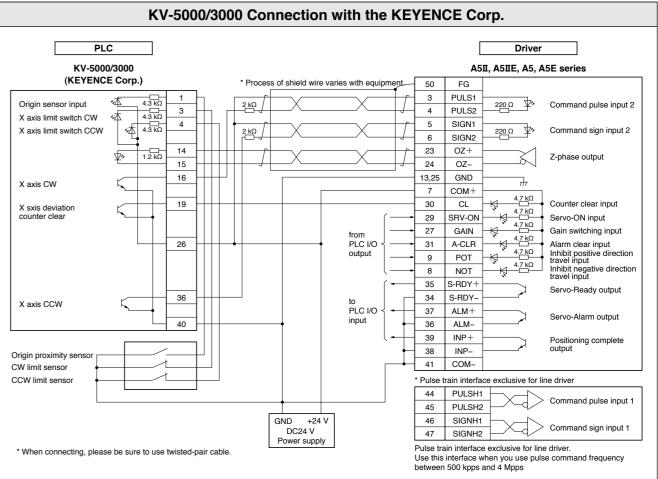






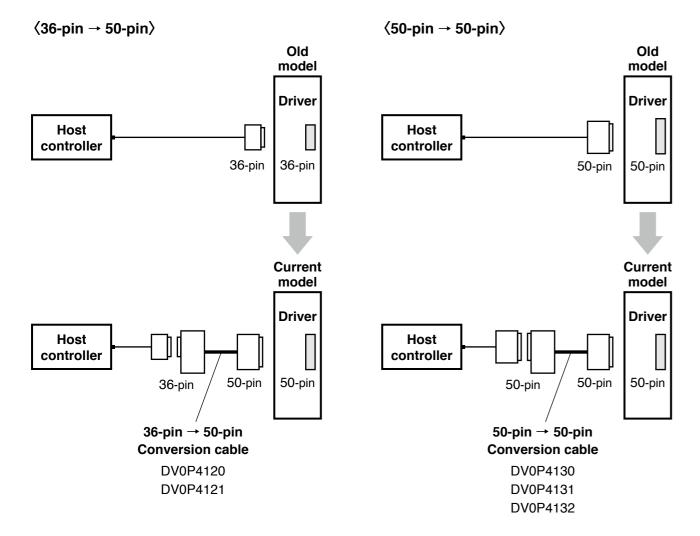






Replacing Old Model Servo Driver with MINAS A5II, A5 series

For easier replacement of old driver (MINAS X/XX/V series) with A5II, A5 series, use the interface conversion connector.



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	F.20U	
	Position control	DV0P4130	P.281	
V series (50-pin)	Velocity control	DV0P4131	- F.201	
	Torque control	DV0P4132	P.282	

* For external dimensions, refer to P.197.

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	Symbo
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+
2	24	Z-phase output	OZ-	24	Z-phase output	OZ–
3	13	Signal ground	GND	13	Signal ground	GND
4	19	Z-phase output	CZ	19	Z-phase output	CZ
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL
14	14	Speed command input	SPR	NC		
15	15	Signal ground	GND	15	Signal ground	GND
16	43	Speed monitor output	SP	43	Speed monitor output	SP
17	25	Signal ground	GND	25	Signal ground	GND
18	50	Frame ground	FG	50	Frame ground	FG
19	21	A-phase output	OA+	21	A-phase output	OA+
20	22	A-phase output	OA-	22	A-phase output	OA-
21	48	B-phase output	OB+	48	B-phase output	OB+
22	49	B-phase output	OB-	49	B-phase output	OB-
23	NC			NC		
24	NC			NC		
25	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+
	34	Positioning complete output (-) Speed arrival output (-)	COIN- AT-SPEED-	34	Positioning complete output (-) Speed arrival output (-)	COIN- AT-SPEED
28	36	Servo-Alarm output (-)	ALM-	36	Servo-Alarm output (-)	ALM–
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (-)	S-RDY-
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR
35	17	Signal ground	GND	17	Signal ground	GND
36	42	Torque monitor output	IM	42	Torque monitor output	IM

* "NC" is no connect.

A5 Family

E Series

Information

A5 Family Connection Between Driver and Controller

Replacing Old Model Servo Driver with MINAS A5II, A5 series

		DV0P4130			DV0P4131	
Pin No. on Old Model	Pin No. on Current 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		
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 NC	Power supply for control signal (+)	COM+	7 NC	Power supply for control signal (+)	COM+
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		02	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	Provide the second seco	
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		0.1211	NC		0.112.1.1
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+
38	NC			NC		7 121111
39	39	Positioning complete output	COIN+	39	Speed arrival output	AT-SPEED+
40	40	Torque in-limit signal output	TLC	40	Torque in-limit signal output	TLC
	10	External brake release signal (-)	BRK-OFF-	10	External brake release signal (-)	BRK-OFF-
	34	Positioning complete output (-)	COIN-	34	Speed arrival output (-)	AT-SPEED-
41	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (-)	ALM-
	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			NC		
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

		DV0P4132	
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbo
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 NC		
10 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		120
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 27	26 27	Speed zero clamp input	GAIN
27	NC	Gain switching input	GAIN
20	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 46	25 25	Signal ground Signal ground	GND
40	25 NC		
47	48	B-phase output	OB+
49	49	B-phase output	OB-
50	50	Frame ground	FG
* "NC" is		-	1

* "NC" is no connect.

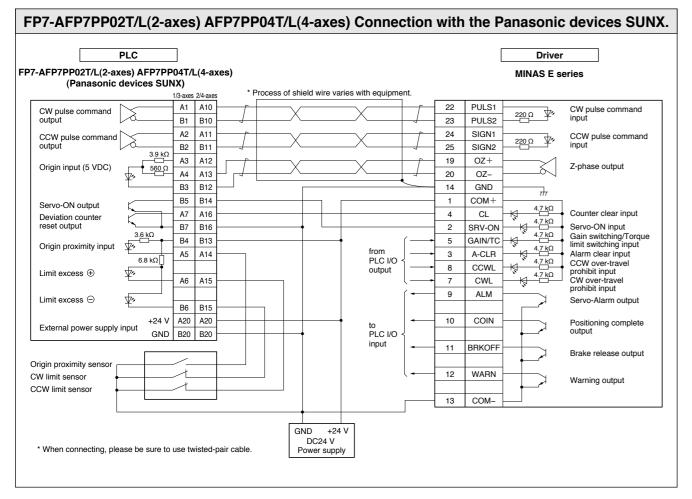


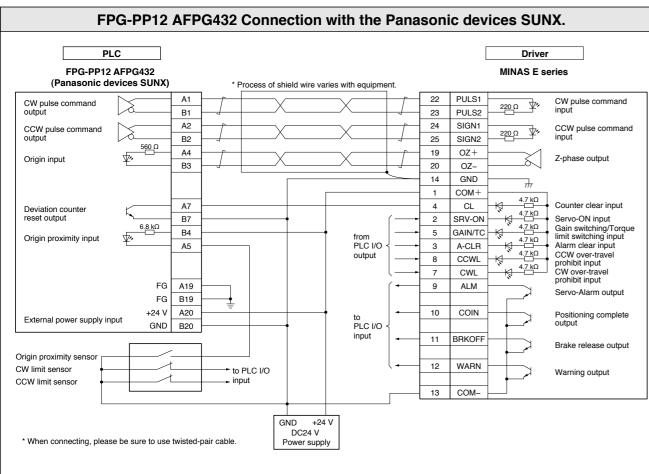
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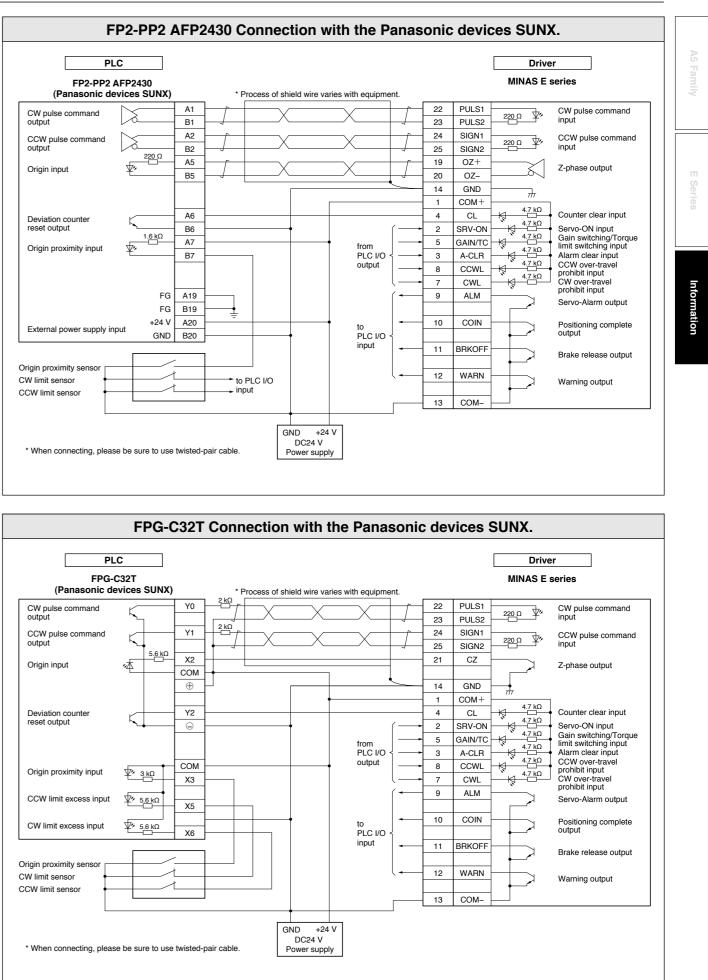
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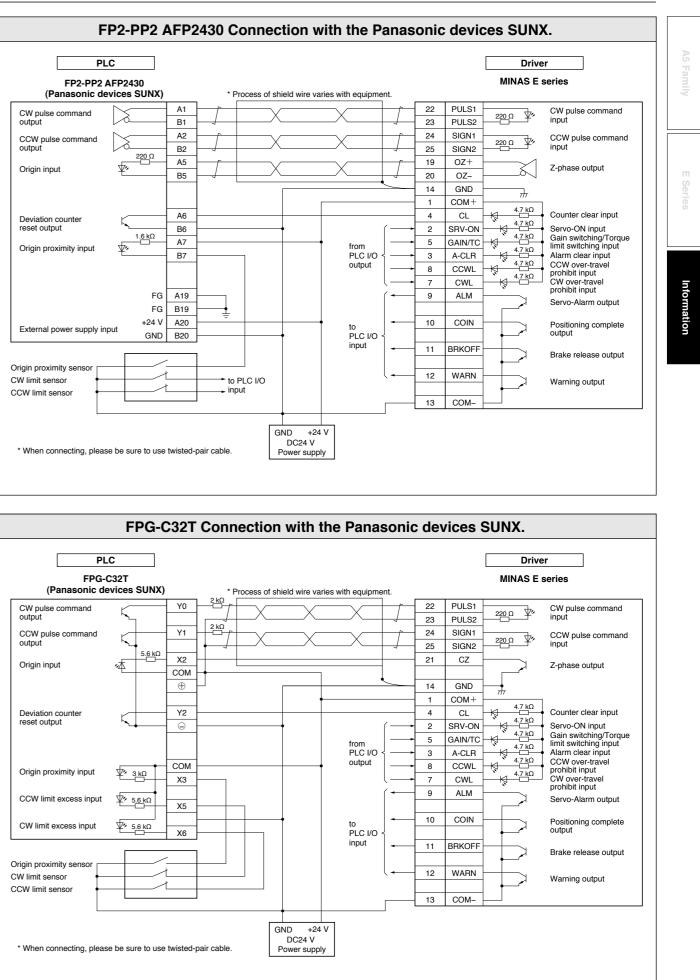
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Connection Between Driver and Controller

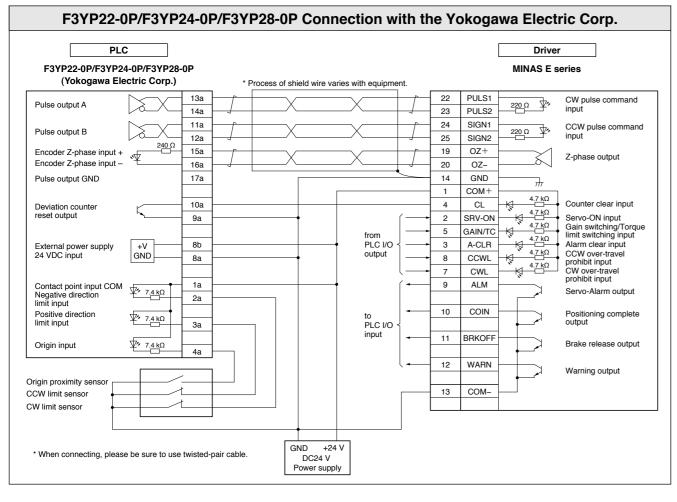


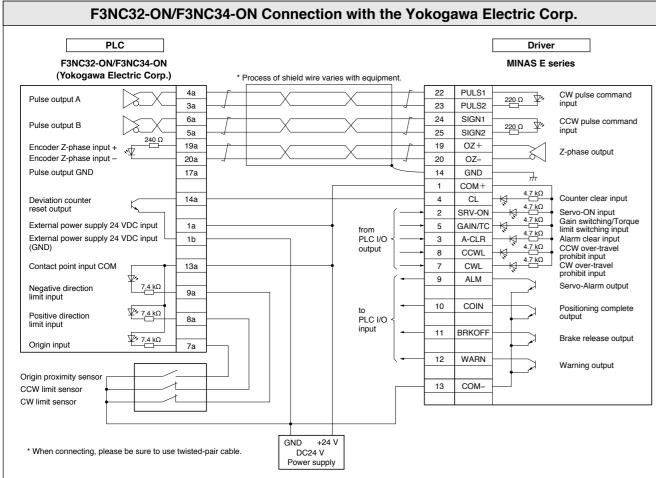


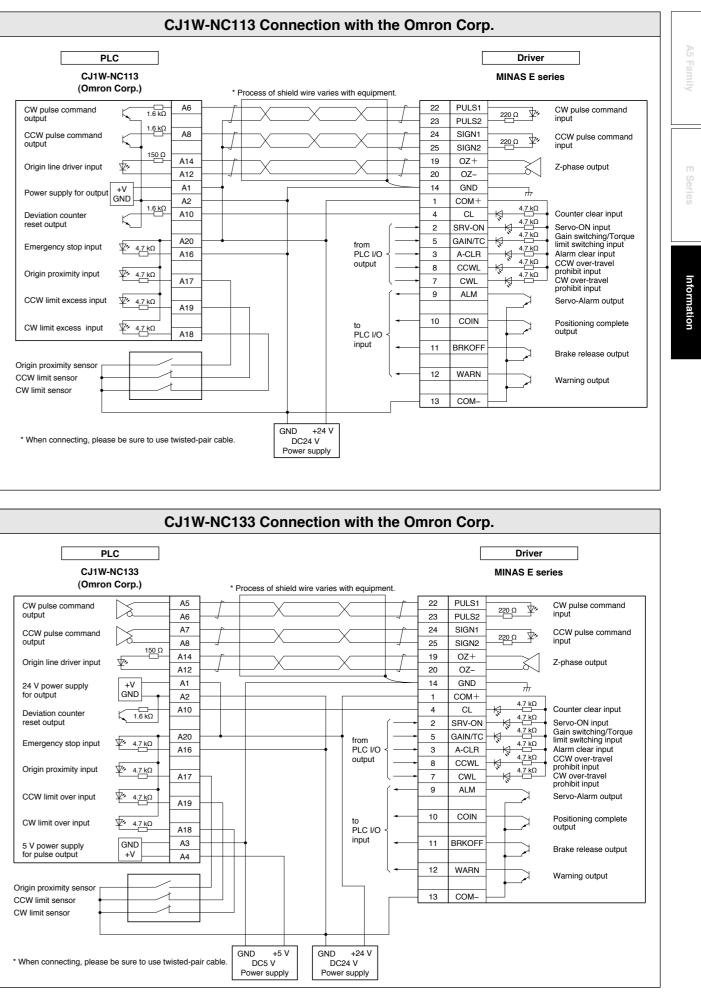


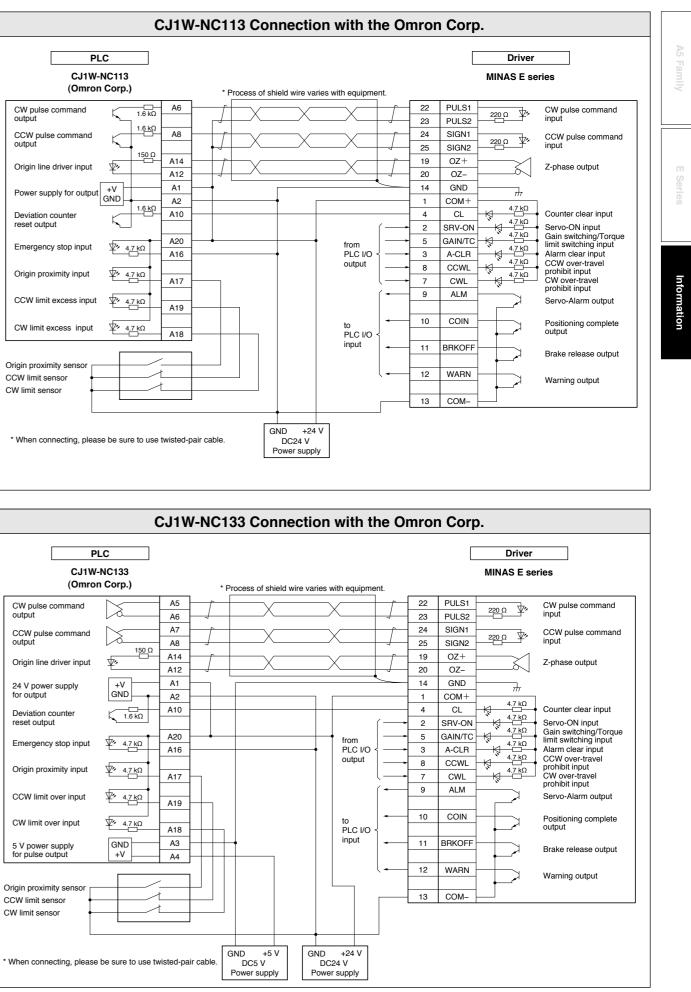


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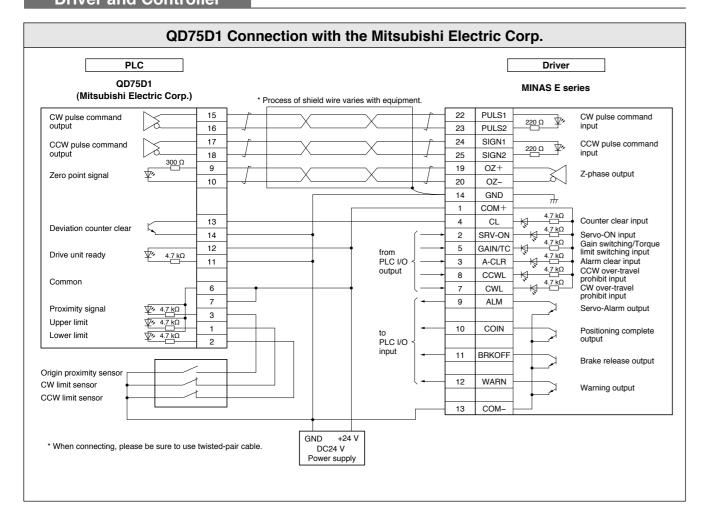






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