	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.
	ig 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.
-	ty 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,
	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
-	cted action. It is highly recommended that you make a fail-safe design and secure the safety in the operative range.
If the moto	r shaft is not electrically grounded, it may cause an electrolytic corrosion to the bearing, depending on the condition
	chine and its mounting environment, and may result in the bearing noise. Checking and verification by customer is
• Failure of t	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 of 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.

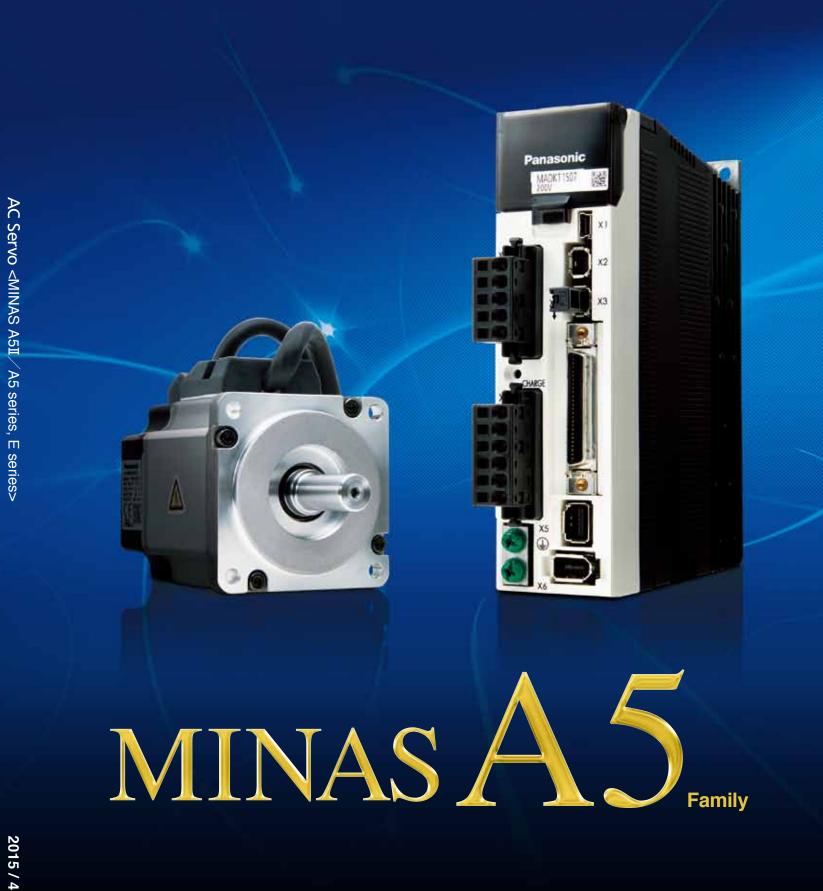
This product is for industrial equipment. Don't use this product at general household.

• 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

eries

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

series

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

DC 24 V type Special Order Produc series RTEX_



Rated output: 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

Special Order Product series



Compatible with 15.0 kW rotary AC servo motor

Drastically reduced setup time by automatic

Capacity of applying Linear motor:

Position, Speed, Thrust control

setup



Rated output: 50 W to 15.0 kW

Supports PC-based controller Passed Official EtherCAT Conformance Test Standard Ethernet cable^{*2} using

Automatic magnetic pole detection function will detect the magnetic pole position of the linear motor.

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







Contonto



	Contents	
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General-purpose RS485 communication AE-LINK support type



Two-degree-of-freedom control system

series Rated output:

Special Order Product

50 W to 5.0 kW 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

EtherCAT communication driver type

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





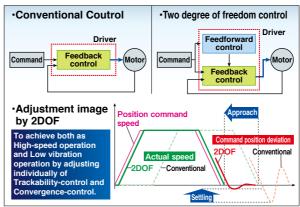


Realizes guick and accurate movement. Fast response & High-precision positioning

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

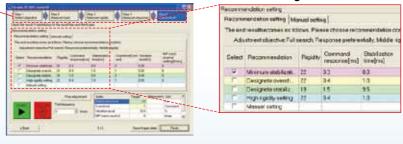
Greatly improved "operability", easy-to-use software "PANATERM".

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 in only 3 processes

· Fit gain adjustment window

(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.

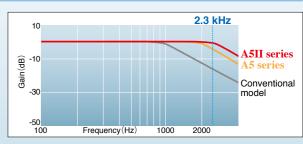
Realized low vibration and reduction of settling time. Realizes tact speed of the electronic component mounting machines, improves the accuracy of surface treatment of metal processing machines, allows for smooth operation and High speed industrial robots.

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

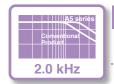
Equipped with "Fit Gain" function to realize speedy setup.

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





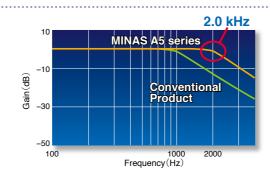


2.0 kHz Frequency Response

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.

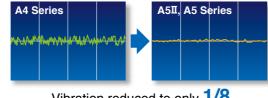


Low Cogging Torque (Excluding MSMD, MHMD, MDME 11.0 kW. 15.0 kW) A5II A5 A5IIE

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.)







Highly Functional Real-tim

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 ert mie nam vom tim en s vertical axis machines and high friction machines with belts.

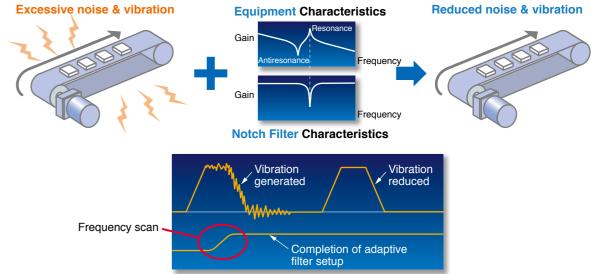
This makes it possible to perform simple optimal adjustments simply by selecting the mode and stiffness.

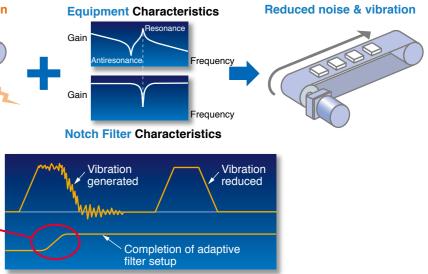


Manual/Auto Notch Filters

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

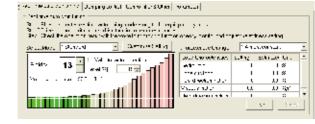






ne Auto-Gain Tuning A5II A5 A5IIE

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

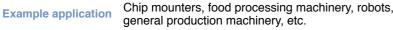
A5

A5 Fami



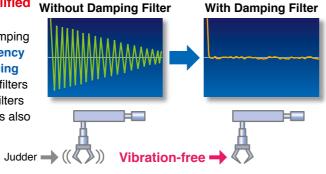
Manual/Auto Damping Filter

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.

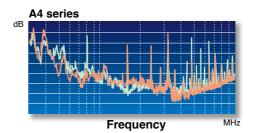
Features non-software-based independent redundant circuitry for motor power isolation. independent redundant circuitry for motor power isolation. This obviates the need for magnetic contactors to isolate



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.)





IP0/	Enclosure	нацпо	(Produ
Examp	le application	Machine	tools,

IP67 enclosure rating for increased environmental resistance

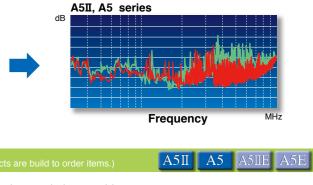
Our improved motor seals and direct-mount connectors in the motor power supply and encoder input-output areas contribute to this unit's IP67 enclosure rating.



IP67

7





robots, printing machines, etc.

- 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.

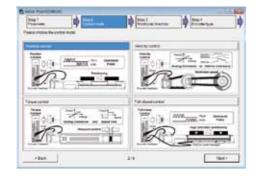


Setup Wizard

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.

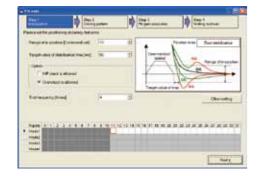


- 1) Select the adjustment method
- 2) Load measurement
- 3) Adjust gain to meet your needs by confirming results. (for A5I, A5IE)



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 :	UNF	.Dete
Exercised to an available to a	18		
Driverts mperature	34	dog-000	
Number of times of inserting testatence	0	tango	
Number of times on DB raisy changing	0	town	
Fee spendor the	0.8	b.	
Fea ile texe atorpatied utilize	08	16	
Condensative time integrated uncue	08	74.	
Lini mutan	0		

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

Encoder Temperature Monitor

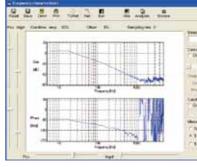
The Encoder Temperature Monitor is a new function capable of real-time measurement of the interior temperature of the encoder, something that has been difficult to achieve in the past. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided with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

Other New Function

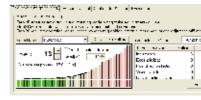
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.

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)			
Display	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

A5 Family



Command Control Mode A5II A5

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

Full-closed Control 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.

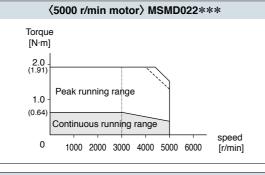
Regenerative Energy A5II A5 A5IIE A5IIE

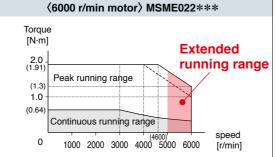
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- Frame A, B, G and frame H model drivers do not contain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

- 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.

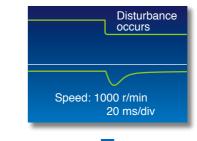
Parameter Initialization A5II A5 A5IIE A5

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

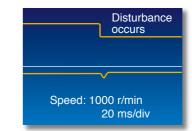
Disturbance Observer A5II A5 A5IIE A5E

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 A5

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.

Existion Toraus				
Friction Torque Compensation	A5II	A5	A5IIE	A5E

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

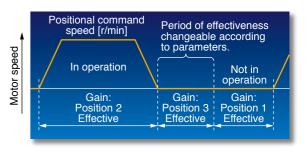
A5II A5 A5IIE A5

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			
Image: Second				
CE	c FL ® us			Applicable External Scale
			(A5II, A5 series) (A5IE, A5E series)	Parallel Type (AB-phase)
	EMC Directives	EN61000-6-2	_	
		EN61800-5-1		
EC Directives	Directives	EN61508(SIL2) EN62061(SILCL 2)	_	Serial Type (Incremental)
	safety ^{*1}			
. Standards		UL508C (E164620)		
			C22.2 No.100	
			_	
Europaischer : Electromag Underwriters I	Normen netic Compatibility _aboratories	Panasonic Testir Panasonic Sen Panasonic Mar	ng Centre vice Europe, a division of keting Europe GmbH	
-	-		-	Serial Type (Absolute)
Information re	lated to the Korea Ra	adio Law		
The user and	dealer should be awa		ierator not designed for nome use.	
		기로서 판매자		
또는 사용자는	는 이 점을 주의하시기 비 아하는 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

MINAS A5 Family **Motor Line-up**

Motor Line-up

		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					Middle capacity Suitable for the	SMT machines							
		and a	and a	e e	P	and a	9	m l	200 V	1.0 1.5 2.0 3.0	3000 (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)					010						
		1E	-	-	-	-		1.0 1.5	2000							
	MDME			2.0 3.0 4.0 5.0	(3000) 1500 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low	Conveyors Robots Machine						
	MDML		200 V 400 V	7.5 (*3)		0	0	11 00	stiffness machines with belt driven	tool etc						
Midd				11.0 ^(*3) 15.0 ^(*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	0.9 2.0 3.0 4.5 ^(°3) 6.0 ^(°3)	1000 (2000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low speed and high torque application	Conveyors Robots Textile machines etc						
	MHMD		100 V 200 V	0.2 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 onuinment						
(*4)			000000-1	7.5 (*3) r. (*2) IP67 mo	1500 (3000)	ilable (*C)		otor is''	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.

MINASA5 Family **Model Designation**

Servo Motor

/mbol ISMD ISME	Low iner		Type W to 750 W) W to 5.0 kW						specific (50 W to	ations 750 W	cial spe	, MSME	р, мнм		
MDME			00 W to 15.	/						Shaft		Holding	g brake	Oil s	seal
MFME		· ·	.5 kW to 4.5	,				Symbol	Round	D-cut	Key-way,	without	with	without	with
MGME		,	.9 kW to 6.0	,				A			center tap				
MHMD) W to 750 V	,				B	•				•	•	
MHME	J -	,	kW to 7.5 k	,				С							
				,	-			D					•		•
lotor r	ated outp	ut —						N P		•					
Symbol	Rated output	Symbol	Rated output	Voltage	specificatio	ns		Q					•		•
5A	50 W	25	2.5 kW	Symbol	Specifications	1		R		ě		-	•		•
01	100 W	30	3.0 kW	1	100 V			S							
02	200 W	40	4.0 kW	2	200 V			Т							
04	400 W	45	4.5 kW	4	400 V			U				•			•
06	600 W	50	5.0 kW	z	100 V/200 V common										
08	750 W	60	6.0 kW	2	(50 W only)						1.0 kW		kW),		
09	0.9 kW	75	7.5 kW					MDME		·	E, MHME				
10	1.0 kW			Symbol		haft		ding bral		Oil se					
15 20	1.5 kW	C5	15.0 kW					-	Round	Key-w	ay witho	ut wi	th w	ithout	with
20	2.0 kW							C D			-				•
lotarv	encoder s	pecifi	cations —					G	-	•	•				•
Symbol	Format	·	Ise counts	Resolution	Wires			H		•					•
G	Increment		20-bit	1048576	5		Desi	ign orde	er						
S	Absolute		17-bit	131072	7		Sym	<u> </u>		Sne	cification	e			
S: can	be used i	n incre	mental.				C		5 motor	She	onication	3			
							1			ASMD, N	IHMD: IP6	35)			
									(,					
Mot	or with	redu	uction g	ear											
WIOL		reat	Jelion y	cal											

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

Motor rated output Symbol Туре Symbol Rated output Low inertia 01 100 W MSMD (100 W to 750 W) 02 200 W Low inertia 04 400 W MSME (100 W to 750 W) 08 750 W High inertia (200 W to 750 W) MHMD Voltage specifications Symbol Specifications 1 100 V 2 200 V **Rotary encoder specifications** Symbol Format Pulse counts Resolution Wires G Incremental 20-bit 1048576 5 S Absolute 17-bit 131072 7 * S: can be used in incremental. Servo Driver Speed, Position, Torque, Full-closed type M A D K T 1 5 **MADKT15** Position control type Frame symbol *-Power device Max. Symbol Frame Symbol Frame current rating MAD Frame A MED Frame E Symbol Current rating MBD Frame B MFD Frame F T1 10 A MCD Frame C MGD Frame G T2 15 A MDD Frame D MHD Frame H T3 30 A * A5IIE, A5E series is up to F-frame. T4 35 A Series -T5 50 A Velocity, Position, Position control T7 75 A Symbol Torque, TA 100 A type Full-Closed type TB 150 A К A5**I** series A5∎E series TC 300 A н A5 series A5E series

* 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	utput (W)	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	*	*		
		L c)nly j	oositi	on contro	
					C	u v

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

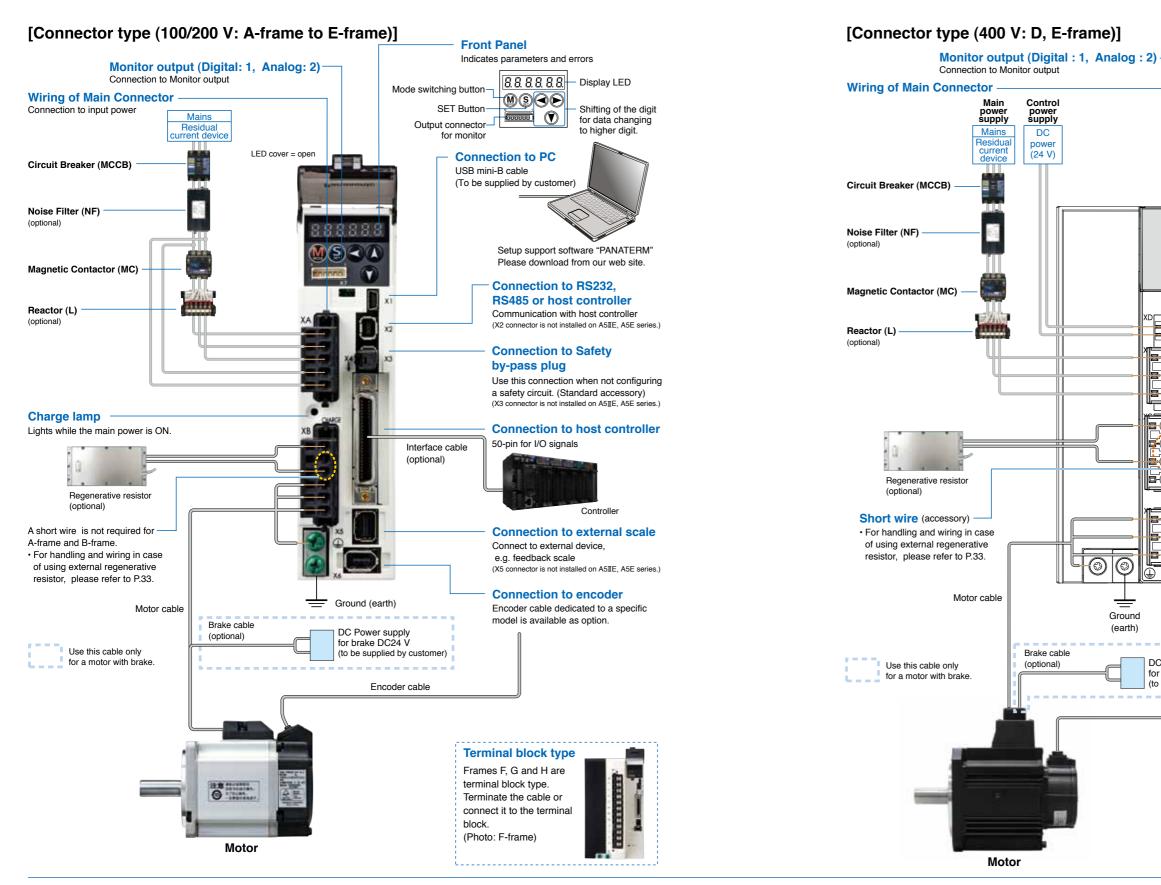
С	Current detector current rating									
S	Symbol	Specifications		Symbol	Specifications					
Γ	05	5 A		40	40 A					
	07	7.5 A		64	64 A					
Γ	10	10 A		90	90 A					
	12	12 A		A2	120 A					
Г	20	20 A		B4	240 A					
	30	30 A								

Special specifications

Special specifications

E Series

Information

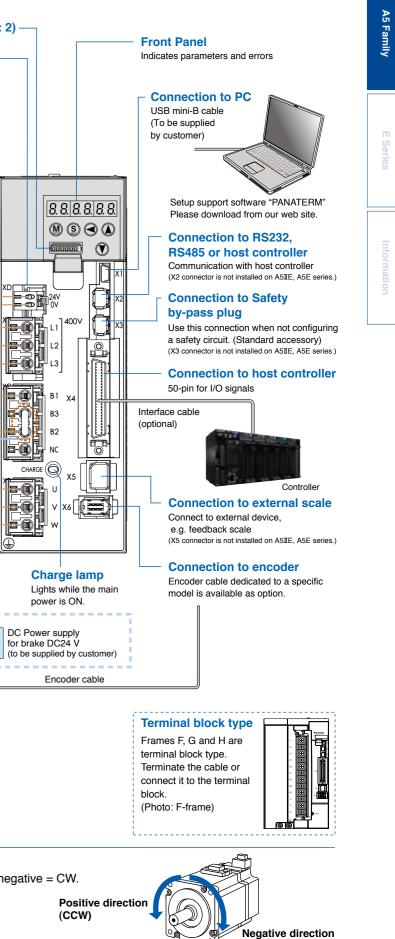


<Caution>

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 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/	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 or more				AWG18 600 VAC	AWG22 to AWG18	
	MHMD	3-phase, 200 V Single	400 W	0.9 kVA		DV0PM20042	DV0P1450					0.75 mm²/		or more	100 VAC or more	
NCDH	MSME MSMD	100 V Single/	400 W	approx. 0.9 kVA		DV0PM20042	DV0P4190					0.75 mm²/ AWG18 600 VAC or more				
ICDK	MHMD	3-phase, 200 V	750 W	approx. 1.3 kVA	15 A											
	MDME MHME		1.0 kW	approx. 1.8 kVA												
	MGME	Single/	0.9 kW	approx. 1.8 kVA			DV0P4190 DV0P1450	DV0P1460			Conr		Conr			
	MSME MHME	3-phase, 200 V	1.0 kW	approx. 1.8 kVA	20 A	DV0P4220	DV0F1430		30 A (3P+1a)		nectio		nectio			
	MDME MFME MSME		1.5 kW	approx. 2.3 kVA							Connection to exclusive connector		Connection to exclusive connector			
лddн	MDME		400 W	approx. 0.9 kVA							usive		usive			
IDDK	MDME		600 W	approx. 1.2 kVA							conne		conne	2.0 mm²/ AWG14 600V VAC or more		
	MSME MSME		750 W	approx. 1.6 kVA						20 A AWG14 (3P+1a) 600V VAC or more	ector	0.52 mm²/	ector			
	MDME MHME	3-phase, 400 V	1.0 kW	approx. 1.8 kVA	10 A	FN258L-16-07 (Recommended) component	DV0PM20050		20 A (3P+1a)			AWG20 100 VAC or more				
	MGME MSME MDME		0.9 kW 1.5 kW	approx.											0.75 mm²/ AWG18	
	MFME MHME MDME			2.3 kVA approx.				DV0P1460				0.75 mm²/				
MEDH	MSME MHME MFME	3-phase, 200 V	2.0 kW 2.5 kW	3.3 kVA approx. 3.8 kVA	30 A	DV0PM20043	DV0P1450	RJ8035 (Recommended) component *6	60 A (3P+1a)			AWG18 600 VAC or more				
MEDK N	MSME MDME		2.0 kW	approx.		FN258L-16-07						0.52 mm ² /				
	MHME	3-phase, 400 V		3.3 kVA approx.	15 A	(Recommended)	DV0PM20050	DV0P1460	30 A (3P+1a)			AWG20 100 VAC				
	MFME MGME		2.5 kW 2.0 kW	3.8 kVA approx.								or more				
	MDME		2.0	3.8 kVA					60 A		11 mm or		11 mm or			
	MHME MSME MGME MDME		3.0 kW	approx. 4.5 kVA			DV0P1450	DV0P1460 - RJ8035 (Recommended) *6	5 ded) 100 A (3P+1a)	x a)	smaller ↓ 05.3 Terminal block M5	0.75 mm²/	smaller			
	MHME MSME	3-phase, 200 V E E	4.0 kW	approx. 6.0 kVA approx.	50 A	DV0P3410						or more Term blo	/L Terminal block M5	3.5 mm ² /		
	MFME MGME MDME		4.5 kW	6.8 kVA approx.											100 VAC or more	
	MHME		5.0 kW	7.5 kVA						3.5 mm²/ AWG12				3.5 mm²/ AWG12		
MFDK	MGME MSME		2.0 kW	approx. 3.8 kVA						600 VAC or more			7 mm or smaller	600 VAC or more		
	MDME MGME MHME		3.0 kW	approx. 4.5 kVA												
	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 mm ² / AWG18 100 VAC or more				
	MFME		4.5 kW	approx. 6.8 kVA							Terminal block	5. 11010	Terminal block			
	MGME MSME MDME MHME		5.0 kW	approx. 7.5 kVA							M4		M3			
	MDME		7.5 kW	approx. 11 kVA							11 mm or	0.75 mm²/	10 mm or			
	MGME	3-phase, 200 V	6.0 kW	approx. 9.0 kVA	60 A	FS5559-60-34 (Recommended) component	DV0P1450		100 A (3P+1a)	F.C. 21	smaller	AWG18 600 VAC	smaller			
MGDH	MHME		7.5 kW	approx. 11 kVA						5.3 mm ² / AWG10	$\langle \mathbf{P} \rangle$	or more	Ø	13.3 mm ² /		
NGDK	MDME	3-phase,	7.5 kW	approx. 11 kVA approx.		FN258-42-07 or	DV02		60 A	600 VAC or more	<u>/ φ5.3</u> Terminal	0.75 mm²/ AWG18	<u>φ5.3</u> Terminal	AWG6 600 VAC or more		
	MGME MHME	400 V	6.0 kW 7.5 kW	9.0 kVA approx.	30 A	FN258-42-33 (Recommended)	DV0PM20050	DV0P1460 RJ8095	(3P+1a)		block M5	100 VAC or more	block M5			
	IVIFIIVIE		7.5 KW	11 kVA approx.	100 A	(component /		(Recommended) component						-		
		3-phase, 200 V	15 kW	17 kVA approx. 22 kVA	125 A	FS5559-80-34 (Recommended component)	DV0P1450	T400-61D (Recommended) component *6	150 A (3P+1a)		16 mm or smaller	0.75 mm ² / AWG18 600 VAC or more	10 mm or smaller	21.1 mm ² / AWG4 600 VAC	-	
MHDH MHDK	MDME		11 kW	approx. 17 kVA	50 A	FN258-42-07				13.3 mm ² / AWG6 600 VAC or more		0.75 mm ² /		or more 13.3 mm ² / AWG6 600 VAC		
		3-phase, 400 V	15 kW	approx. 22 kVA	60 A	Or FN258-42-33 (Recommended) component	DV0PM20050		100 A (3P+1a)	A or more	or more To	Terminal block M6	AWG18 100 VAC or more	Terminal block M4	or more 21.1 mm ² / AWG4 600 VAC	AC re m²/ 4

*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

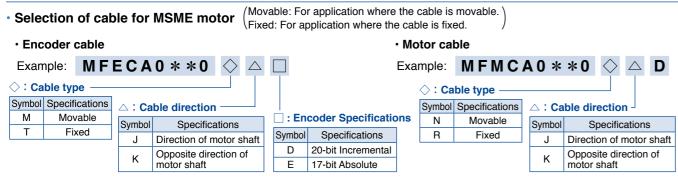
Use the attached exclusive connector for A-frame to E-frame, and maintain the peeled off length of

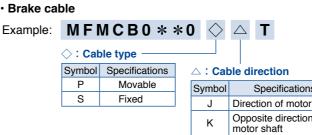
Terminal cover fastening Terminal block screw screw Fastening Fastening Nominal Nominal torque torque size size (N•m) (N•m) W M5 1.0 to 1.7 M3 0.4 to 0.6 M3 0.19 to 0.21 M4 0.7 to 1.0 NC M5 1.0 to 1.7 M3 M5 2.0 to 2.4 0.3 to 0.5 M4 0.7 to 1.0 M5 2.0 to 2.5 M6 2.2 to 2.5

 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	Pow	er		Optional	l parts					Options		
					A5I series A5 series	A5IIE series	capa	situ	er Cable	Mot	tor 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	t with Brake		Regenerative Resistor	Single phase	Single phase			DV0P4121
				u- J -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	ersion Cable	DV0P4130
		50	MSMD5AZ 🗌 1 🗴	49	MAD \bigcirc T1105	MAD \bigcirc T1105E	Appr	DX.										DV0P4131
		50		49			A-frame						DV0P4280	DV0P227				DV0P4132
	Single	100	MSMD011 [] 1 *	51	MAD 🔷 T1107	$MAD\diamondsuitT1107E$	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 rov	⁷ DV0PM20033
	100 V	200					D-frame 0.							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 0.5		MFECA 0 * * 0EAE		MFMCA * * 0EED	MFMCB				Connection		DV0P4290
3000 r/mir		100		50			Appr	- • • • = • • • •	Note) 7	0	UEED	0 * * 0GET	DV0P4281	DV0P227		Connector Kit fo Motor/Encoder		DV0P4380
5000 1/1111	Single	100	MSMD012 [] 1 *	52	MAD 🔷 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	DX.					DV0P4283			MOLOI/BIAKE CO	RS485, RS232	DV0PM20024
		400		50			0.3										Safety	DV0PM20025
		750	MSMD082 🗌 1 ∗	57	MCD \bigcirc T3520	MCD \bigcirc T3520E	C-frame Appr 1.3							DV0P220	DV0PM20042	Connector Kit	Interface	DV0P4350
		50	MSME5AZ 1 *	65	MAD \bigcirc T1105	MAD \bigcirc T1105E	Appr			М	MFMCA	MFMCB					External Scale	DV0PM20026
	0. 1						A-frame 0.4	MFECA	MFECA 0 * * 0MJE	0 *	* * 0NJD	0 * * 0PJT	DV0P4280	DV0P227			Encoder Analog Monitor Signa	DV0PM20010
	Single phase	100	MSME011 [] 1 *	67	MAD 🔷 T1107	MAD \bigcirc T1107E	0.4		For movable, direction of	di	or movable, lirection of notor shaft	(For movable, direction of motor shaft			DV0P4170	Battery For Abs	0 0	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
MONE		400	MSME041 [] 1 *	71	MCD \bigcirc T3120	MCD (> T3120E	C frame Appr	x. 0 * * 0MKD	MFECA 0 * * 0MKE		* * 0NKD pr movable, ι	0 * * 0PKT	DV0P4282	DV0P228	DV0PM20042	Mounting	A-frame	DV0PM20027
MSME	4	400		/ 1			0.3	opposite direction	For movable, opposite direction		osite direction 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 0.5		\ of motor shaft MFECA		MFMCA	MFMCB					C-Italile	MFECA0**0EAD
3000 r/mir		100	MSME012 [] 1 *	68	MAD \bigcirc T1505	MAD \bigcirc T1505E	A-frame Appr	x. 0 * * 0TJD	0 * * 0TJE	/ F	* * ORJD For fixed,)	0 * * 0SJT	DV0P4281	DV0P227				MFECA0**0EAM
	' Single phase/						A-irame 0.5	direction of	(For fixed, direction of	\m	direction of notor shaft/	direction of motor shaft/		DV0P220	DV0P4170		without Battery Box	MFECA0**0MJD
	3-phase	200	MSME022 [] 1 *	70	MAD \bigcirc T1507	MAD \bigcirc T1507E	0.5	(motor origin)	(motor shaft)		//FMCA * * 0RKD	MFMCB 0 * * 0SKT			DV0PM20042		Without Buttery Box	MFECA0**0MKD
	200 V	400	MSME042 🗌 1 *	72	MBD 🔷 T2510	MBD \diamondsuit T2510E	B-frame Appr		0 * * 0TKE	/ F	For fixed, osite direction	For fixed,	DV0P4283			Encoder Cable		MFECA0**0TJD MFECA0**0TKD
		750		70			Appr	opposite direction	opposite direction of motor shaft	\ of n	motor shaft /	of motor shaft			DV0PM20042	Licodel Cable		MFECA0**0EAE
		750	MSME082 [] 1 *	73	MCD \bigcirc T3520	MCD \bigcirc T3520E	C-frame 1.3	3		N	Note) 6			2101 220	DV0PM20042			MFECA0**0MJE
	Single	200	MHMD021 🗌 1 🗶	59	MBD 🔷 T2110	$MBD\diamondsuitT2110E$	B-frame Appr 0.5						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		400		01			0.0					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 0.5		MFECA 0 * * 0EAE		MFMCA * * 0EED	MFMCB 0 * * 0GET		DV0P220	DV0P4170			MFMCA0**0NJD
3000 r/mir	h phase/	400	MHMD042 1 *	62	MBD () T2510	MBD \bigcirc T2510E	B-frame Appr		Note) 7				DV0P4283		DV0PM20042	Motor Cable	without Brake	MFMCA0**0NKD
	3-phase 200 V				· ·	•	0.3							DV0P228				MFMCA0**0RJD
	200 1	750	MHMD082 🗌 1 🗶	63	MCD \bigcirc T3520	MCD \bigcirc T3520E	C-frame 1.3							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 ak	coluto coocificat	tion		When you us encoder, pleas							MFMCB0**0SJT
			l type can be used ii		-		ne i /-Dil al	solute specifical	uon,		Please note the						50 Ω 25 W	MFMCB0**0SKT DV0P4280
•			m, 05: 5 m, 10: 10 i			. 3 m: MFECA00	30EAM)			,	absolute encoc	•		-			100 Ω 25 W	DV0P4280
	•										Please buy the				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	tor M				e the cable is fixed											30 Ω 100 W	DV0P4284
Encoder c	able					Motor cab	le			Brake c	cable						20 Ω 130 W DV0P220, DV0P22	DV0P4285
xample:	MEEC		**0 ◇ △			Example:	MEMC	A0 * * 0		Example	MEMO	CB0 * *(\land	т		Reactor	DV0P223, DV0P224	4, DV0P225,
										Example				•			DV0P227, DV0P228 DV0P4170, DV0PM	20042
Coble tor	ationa		a alter att			○ : Cab	le type — Specifications	l .			Cumbel Cr					Noise Filter	DV0P4220, DV0PM	20043
						Symbol	nontications	$ \triangle$: Cable dire	ection -		Symbol Spe	ecifications	riangle : Cable di	rection		1		
bol Specific	able		e direction	ເ 🗀 :	Encoder Specifi		•	1	odification		P I	Mayabla	Cumbal				DV0P3410	D)/0D/1100
Cable typnbolSpecificMMovaTFix	able	mbol	Specifications irection of motor shaft	Sym	· · · · ·	cations N	Movable Fixed	Symbol Sp	ecifications on of motor shaf			Mayabla	,	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			Opti	nal parts					Options (IP6	5 motor)	
					A5I series A5 series	A5IE series		capacity	Encode	er Cable	M	tor Cable	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	withou Brake	with Brake	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter			DV0P4120 DV0P4121
					Note) 2	Note) 3,4		(it with)	Note) 5	Note) 4,5,8	Note) 5	Note) 5		,	,		Interface Conve	rsion Cable	DV0P4130
	Single	1000	MSME102 C *	74	$MDD\diamondsuitT5540$	MDD 🔷 T5540E		Approx. 1.8							DV0P228 DV0P222				DV0P4131 DV0P4132
	phase/ 3-phase						D-frame		_		MFMC	MFMCA		DV0P4284	DV0P222 DV0PM20047	DV0P4220		A-frame Single row	
	200 V	1500	MSME152 🗌 C *	75	MDD <> T5540	MDD \bigcirc T5540E		Approx. 2.3	MFECA	MFECA	0**2EC	0**2FCD			DV0P222		Connector Kit	to	
		2000	MSME202 C *	76	MED \bigcirc 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					-		DV0P224		Supply Input Connection	E-frame (200 V)	DV0PM20044
MSME	200 V	4000	MSME402 C *				-1 · · · ·	Approx. 6	_		MFMC 0**3EC	-		DV0P4285 x2 in parallel	DV0P225	DV0P3410		D-frame (400 V) E-frame (400 V)	DV0PM20051 DV0PM20052
. 3000 r/min		5000			-	MFD \bigcirc TB3A2E		Approx. 7.5			0 020	0 0101			Note) 7		Connector Kit		D V 01 1020032
			MSME084					Approx. 1.6			MFMC	MFMCE		DV0PM20048			for Control Power	D-frame and	DV0PM20053
		1500	MSME104 C *				D-indifie	Approx. 1.0 Approx. 2.3	1		0**2EC	-		DV0F10120040		Recommended	Supply Input Connection	E-frame (400 V)	2.00.0020000
	3-phase 400 V	2000	MSME204 C *	107	$MED \bigcirc T4430$	MED \bigcirc T4430E	E-frame			MFECA 0**0ESE				DV0PM20049	Note) 7	components	Connector Kit	A-frame to D-frame	DV0PM20034
	400 1		MSME304 C *				- - - - - - - - - -	Approx. 4.5		U ULUL	MFMC	MFMCA		DV0PM20049		P.252	for Motor	E-frame (200 V)	DV0PM20046
			MSME504 C *				- 1	Approx. 0 Approx. 7.5	_		0**3EC	Г 0**3FCT		×2 in parallel			Connection	D-frame (400 V)	DV0PM20054
	Single		MDME102 C *			MDD \diamondsuit T3530E		Approx. 1.8							DV0P228		Connector Kit for Regenerative	E-frame	DV0PM20045
	phase/			00			D-frame	Applox. 1.0	_		MFMC	MFMCA		DV0P4284	DV0P222	DV0P4220	Resistor	D-frame (400 V)	DV0PM20055
	3-phase 200 V	1500	MDME152 🗌 C *	81	$MDD\diamondsuitT5540$	MDD 🔷 T5540E		Approx. 2.3			0**2EC	-			DV0PM20047 DV0P222		Connector Kit f		DV0P4310 DV0P4320
		2000	MDME202 C *	00		MED 🔷 T7364E	E fromo		MFECA	MFECA 0**0ESE			_	DV0P4285	DV0P222 DV0P223	DV0PM20043	Connector Kit fo Motor/Encoder		DV0P4330
	3-phase		MDME302 C *		-					0 DESE			_	Note) 7	DV0P223 DV0P224	DV0F10120043			DV0P4340
	200 V		MDME402 C *					Approx. 4.5 Approx. 6	_		MFMC	MFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410		RS485, RS232	DV0PM20024
MDME		5000	MDME502 C *					Approx. 7.5	-		0**3EC	r 0**3FCT		×2 in parallel	Note) 7	01010410		Safety Interface	DV0PM20025 DV0P4350
2000 r/min		400	MDME044 C *	111	MDD 🔷 T2407	MDD 🔷 T2407E		Approx. 0.9							Note) 7		Connector Kit	External Scale	DV0P4350
		600	MDME064 C *	112	MDD \bigcirc T2407	MDD 🔷 T2407E	D-frame	Approx. 1.2			MFMC	MFMCE		DV0PM20048				Encoder	DV0PM20010
	3-phase	1000	MDME104 C *	113	$\frac{\text{MDD} \diamondsuit \text{T2412}}{\text{MDD} \diamondsuit \text{T3420}}$	MDD ◇ T2412 MDD ◇ T2412E Approx. 1.8 MDD ◇ T3420 MDD ◇ T3420E Approx. 2.3 MFECA 0**2ECD 0**2FCD		Recommended		Analog Monitor Signa									
	400 V		MDME204 C *		•	•	_		-	0**0ESE			-	DV0PM20049	Note) 7	components	Battery For Abs		DV0P2990 DV0P4430
:			MDME304 C *					Approx. 4.5	_		MFMC	MFMCA		DV0PM20049		P.252	Battery Box No Mounting		
			MDME404 C *				F-frame	Approx. 6 Approx. 7.5	_		0**3EC	-		×2 in parallel			Bracket	D-frame	DV0PM20030
	Single	3000		110				Appilox. 7.0									Encoder Cable	without Battery Box with Battery Box	
	phase/		MGME092 🗌 C 🜸	92	MDD 🔷 T5540	MDD \bigcirc T5540E	D-frame	Approx. 1.8			MFMC			DV0P4284	DV0P228	DV0P4220		Note) 8	MFECA0**0ESE
MGME	3-phase 200 V				Ŷ	, , , , , , , , , , , , , , , , , , ,			MFECA 0**0ESD	MFECA 0**0ESE	0**2EC) **2FCD	-		DV0P221				MFMCA0**2ECD
Low speed/ High torque	3-phase	2000	MGME202 C *	93	$MFD\diamondsuitTA390$	MFD \bigcirc TA390E	E-frame	Approx. 3.8	0 0200	0 0202	MFMC			DV0P4285	DV0P223	DV0P3410			MFMCD0**2ECE
type	200 V	3000	MGME302 C *	94	MFD \bigcirc TB3A2	MFD \bigcirc TB3A2E	I mame	Approx. 4.5			0**3EC			×2 in parallel	DV0P224	0,01,0410		without Brake	MFMCE0**2ECD
1000 r/min	3-phase	900	MGME094 🗌 C ∗	125	$MDD\diamondsuitT3420$	MDD \bigcirc T3420E	D-frame	Approx. 1.8	MFECA	MFECA	0**2EC			DV0PM20048	_	Recommended	Motor Cable		MFMCA0**3ECT
	400 V	2000	MGME204 C *					Approx. 3.8	-	0**0ESE	MFMC	MFMCA		DV0PM20049	Note) 7	components			MFMCD0**3ECT
	Cinala		MGME304 C *				-	Approx. 4.5			0**3EC	r 0**3FCT		x2 in parallel		P.252			MFMCA0**2FCD
	Single phase/	1000	MHME102 C *	97	$MDD\diamondsuitT3530$	MDD \bigcirc T3530E		Approx. 1.8			MFMC	MFMCA		DV0D 400 4	DV0P228/ DV0P222	D)/0D (000		with Brake	MFMCE0**2FCD MFMCA0**3FCT
	3-phase	1500	MHME152 🗌 C 🜸	98	MDD \bigcirc T5540	MDD (> T5540F	D-frame	Approx. 2.3			0**2EC	0 0**2FCD		DV0P4284	DV0PM20047/	DV0P4220		50 Ω 25 W	DV0P4280
	200 V								MFECA	MFECA	MFMC	MFMCE	_		DV0P222			100 Ω 25 W	DV0P4281
			MHME202 🗌 C 🗴					Approx. 3.3	0**0ESD	0**0ESE	0**2EC			DV0P4285 Note) 6	DV0P223	DV0PM20043	External	25 Ω 50 W	DV0P4282
МНМЕ	3-phase	3000	MHME302 C *	100	MFD \bigcirc TA390	MFD \bigcirc TA390E		Approx. 4.5			MFMC			DV0P4285	DV0P224		Regenerative	50 Ω 50 W 30 Ω 100 W	DV0P4283 DV0P4284
•	200 V		MHME402 C *						-		0**3EC			x2 in parallel	DV0P225	DV0P3410	Resistor	20 Ω 130 W	DV0P4284 DV0P4285
2000 r/min								Approx. 7.5						1.	Note) 7			120 Ω 80 W	DV0PM20048
			MHME104					Approx. 1.8 Approx. 2.3			0**2EC							80 Ω 190 W	DV0PM20049
	3-phase		MHME204						1	MFECA	MFMC	MFMCE		DV0PM20049	_	Recommended	Reactor	DV0P220, DV0P221 DV0P223, DV0P224	, DV0P225,
	400 V		MHME304					Approx. 4.5	0**0ESD	0**0ESE	0**2EC				Note) 7	components P.252		DV0P227, DV0P228 DV0P4170, DV0PM2	
			MHME404 C *						-		MFMC. 0**3EC			DV0PM20049		r.202	Noise Filter	DV0P4170, DV0PM2 DV0P4220, DV0PM2	
						MFD 🔿 TA464E		Approx. 7.5]		U3EC	0 3FCI		×2 in parallel				DV0P3410	
		-	·					11.							_				
		pecificat	ions: 🗌 Motor spec	ificatio	on: * (refer to P.	.16)					,			kist, and refer to		ils.		Single phase	DV0P4190
ote) 2 💠 : Driv	vers series	becificat K: A5	·	ificatio eries	on: * (refer to P. Note) 3 \diamondsuit :	16) Drivers series	K: A5II	E series			Note) 7	Reactor shou	ld be pre	tist, and refer to pared by the us attery is not se	ser.		Surge Absorber	Single phase 3-phase (200 V) 3-phase (400 V)	DV0P4190 DV0P1450 DV0PM20050

A5 Family

E Series

Information

400 W to 15.0 kW IP67 motor (MSME MDME)

		Motor				Driver		Power			Optio	onal par	ts					Options (IP6		
					A5I series	A5IIE series		capacity	Encode	ar Cabla	Na	tor Cob		Brake					Title	Part No.
	_	0.1	Part No.	Rating/	A5 series Part No.	A5E series		/ at \	Encode	er Cable	MO	tor Cab	bie	Cable	External	Reactor		Interface Cable		DV0P4360
otor series	Power supply		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		with Brake Note) 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				DV0P4131 DV0P4132
	3-phase 200 V)	MSME152 🗌 1 ∗	75	MDD 🔷 T5540		D-frame	Approx. 2.3			MFMCE 0**2ECE		MFMCA **2FCD		DV0P4284 -	DV0PM20047	DV0P4220	Connector Kit	A-frame Single row type	
		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 row type E-frame (200 V)	DV0PM20033 DV0PM20044
MSME	3-phase 200 V		MSME302				F-frame	Approx. 4.5 Approx. 6	-		MFMCA		IFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410	Connection	D-frame (400 V) E-frame (400 V)	DV0PM20051 DV0PM20052
3000 r/mir	۱ 	5000 750	MSME502 🗌 1 * MSME084 🗌 1 *	79 104	MFD \rightarrow TB3A2 MDD \rightarrow T2412	MFD \bigcirc TB3A2E MDD \bigcirc T2412E		Approx. 7.5 Approx. 1.6			0**3EC	Г 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		106	$MDD \diamondsuit T3420$	$MDD\diamondsuitT3420E$		Approx. 2.3	MFECA	MFECA	MFMCE 0**2ECE		IFMCE **2FCD		DV0PM20048 DV0PM20049	_	Recommended components	Connection Connector Kit for Motor	A-frame to D-frame E-frame (200 V)	DV0PM20034 DV0PM20046
	400 V	3000 4000	MSME304 🗌 1 * MSME404 🗌 1 *	108 109	MFD 🔷 T5440 MFD 🔷 TA464	MFD 🔷 T5440E MFD 🔷 TA464E		Approx. 4.5 Approx. 6	0^^0ETD	0**0ETE	MFMCA 0**3EC		IFMCA **3FCT		DV0PM20049 ×2 in parallel	Note) 8	P.252	Connection Connector Kit for Regenerative	D-frame (400 V) E-frame D-frame (400 V)	DV0PM20054 DV0PM20045 DV0PM20055
	Single phase/		MSME504 🗌 1 * MDME102 🗌 1 *		·	•	D-frame	Approx. 7.5 Approx. 1.8							DV0P4284	DV0P228 DV0P222	DV0P4220	Resistor Connector Kit fc Motor/Encoder	r	DV0PM20036 DV0PM20037
	3-phase 200 V	1500				-		Approx. 2.3	-		MFMCE 0**2ECE		IFMCA **2FCD		DV0F4284	DV0PM20047 DV0P222			RS485, RS232	DV0PM20038 DV0PM20039 DV0PM20024
			MDME202 [] 1 * MDME302 [] 1 * MDME402 [] 1 *	83	MFD \bigcirc TA390			Approx. 4.5	MFFCA	MFECA 0**0ETE	MFMCA		IFMCA	-	DV0P4285	DV0P223 DV0P224 DV0P225	DV0PM20043 DV0P3410	Connector Kit	Safety Interface External Scale	DV0PM20025 DV0P4350 DV0PM20026
	3-phase 200 V	5000	MDME402 1 *	85				E-frame Approx. 6 Approx. 7.5 G-frame Approx. 11	5		0**3EC	Γ 0'	**3FCT		×2 in parallel – DV0P4285	_	Recommended	Battery For Abs	Encoder Analog Monitor Signa	DV0PM20010 al DV0PM2003 DV0P2990
						_	Ginamo				_		-		×3 in parallel	Note) 8	components	Battery Box No		DV0P2330
MDME 2000 r/mir		15000	MDMEC12 1 * MDMEC52 1 *	88			H-frame	Approx. 17 Approx. 22	-		Note) 6	1	Note) 6		DV0PM20058		P.252	Mounting Bracket	D-frame	DV0PM20030
2000 1/111	1	600	MDME044 [] 1 * MDME064 [] 1 * MDME104 [] 1 *	112		MDD \bigcirc T2407E MDD \bigcirc T2412E	D-frame	Approx. 0.9 Approx. 1.2 Approx. 1.8			MFMCE		IFMCE		DV0PM20048			Encoder Cable	without Battery Box with Battery Box Note) 9	MFECA0**0E
	0 shaa	2000	MDME204 [] 1 *	115	MED 🔆 T4430	MED 🔷 T4430E	E-frame	Approx. 2.3 Approx. 3.3		MEEOA	0**2ECI	5 0'	**2FCD		DV0PM20049		Recommended			MFMCA0**2E MFMCD0**2E MFMCE0**2E
	3-phase 400 V	4000 5000	MDME304 1 * MDME404 1 * MDME504 1 *	117 118	MFD 🔷 TA464 MFD 🔷 TA464	$MFD\diamondsuitTA464E$		Approx. 7.5	0**0ETD	MFECA 0**0ETE	MFMCA 0**3EC		/FMCA **3FCT		DV0PM20049 ×2 in parallel DV0PM20049	Note) 8	components P.252	Motor Cable	without Brake	MFMCF0**2E MFMCA0**3E MFMCD0**3E
		11000	MDME754 [] 1 * MDMEC14 [] 1 * MDMEC54 [] 1 *	120	MHD \bigcirc TB4A2	_	G-frame H-frame	Approx. 11 Approx. 17 Approx. 22	-		 Note) 6	1	 Note) 6		×3 in parallel DV0PM20059				with Brake 50 Ω 25 W	MFMCA0**2F MFMCE0**2F MFMCA0**3F
	Single phase/ 3-phase	, 1500	MFME152 🗌 1 🗴	89	MDD \diamondsuit T5540	MDD 🔷 T5540E	D-frame				MFMCA 0**2ECI		IFMCA **2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220	External	100 Ω 25 W 25 Ω 50 W 50 Ω 50 W	DV0P4280 DV0P4281 DV0P4282 DV0P4283
MFME (Flat type)	200 V 3-phase 200 V	2500	MFME252 [] 1 *	90	MED 🔷 T7364	MED 🔷 T7364E	E-frame	Approx. 3.8	MFECA 0**0ETD	MFECA 0**0ETE	MFMCF 0**2ECI) O,	MFMCE **2FCD	-	DV0P4285 Note) 7		DV0PM20043	Regenerative Resistor	30 Ω 100 W 20 Ω 130 W 120 Ω 80 W	DV0P4283 DV0P4284 DV0P4285 DV0PM2004
2000 r/mir			MFME452 [] 1 *		Ť	·					MFMCE 0**3EC MFMCF	Г 0 [;]	MFMCA **3FCT MFMCE		DV0P4285 ×2 in parallel DV0PM20048	Note) 8	DV0P3410		80 Ω 190 W DV0P220, DV0P221	DV0PM2004
	3-phase 400 V	2500	MFME254 🗌 1 * MFME454 🗌 1 *	123	MED 🔷 T4430	MED 🔷 T4430E	E-frame	Approx. 3.8	MFECA 0**0FTD	MFECA 0**0ETE	0**2ECI MFMCE 0**3EC	0°	**2FCD //FMCA **3FCT	_	DV0PM20049 DV0PM20049 ×2 in parallel	Note) 8	Recommended components P.252	Reactor	DV0P223, DV0P224 DV0P227, DV0P228 DV0P4170, DV0PM DV0P4220, DV0PM	3, DV0PM2004 20042
? ◇: Dr	ivers series	K:A5	tions: Motor spe SI series H: A5 s	eries	Note) 3 🔷 :	Drivers series k					Note) 6 Note) 7	Recorr Other	nmend to g	ons exi	connector kit o st, and refer to	P.210 for deta	ils.	Noise Filter	DV0P3410 Single phase	DV0P4190
			es drivers (dedicate e can be used in co		,	o not support the	17-bit a	absolute s	specification	l,					pared by the use attery is not su		er with 17-bit	Surge Absorber	3-phase (200V) 3-phase (400V)	DV0P1450 DV0PM200

A5 Family

E Series

0.9 kW to 7.5 kW IP67 motor (MGME)

			Motor				Driver		D			Option	nal parts					• Options (IP6	7 motor)		
						A5I series	A5IIE series		- Power capacity	Encode	er Cable	Moto	tor Cable	Brake					Title	Part No.	Page
		Power	Output	Part No.	Rating/	A5 series Part No.	A5E series Part No.		/at \	LIICOU		Moto		Cable	External	Reactor		Interface Cable		DV0P4360	_
I	lotor series	supply	(W)	Note) 1	Spec.	Speed, Position,	(Position control)	Frame	(rated load	20-bit	17-bit	without			Regenerative	Single phase	Noise Filter			DV0P4120	-
					(page)	Torque, Full-Closed type	(type)		(kVA)	Incremental		Brake	Brake	Note) 5	Resistor	3-phase		late de la Orana		DV0P4121	197
						Note) 2	Note) 3,4			Note) 5	Note) 4,5,9	Note) 5	Note) 5					Interface Conve		DV0P4130 DV0P4131	-
		Single phase/										MFMCD	MFMCA			DV0P228				DV0P4132	-
		3-phase	900	MGME092 🗌 1 ∗	92	MDD 🔿 T5540	MDD \bigcirc T5540E	D-frame	Approx. 1.8			0**2ECD			DV0P4284	DV0P221	DV0P4220			DV0PM20032	
		200 V														2.10. 22.			to A-frame type		_
			2000	MGME202 🗌 1 ∗		V	V		Approx. 3.8		MFECA				DV0D 4005	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		DV0PM20044	200
-	MGME	3-phase	4500	MGME452 🗌 1 ∗				_	Approx. 7.5	1		0 0201	0 01 01					Connection	· · · ·	DV0PM20051	-
Middle		200 V														_	Recommended		E-frame (400 V)	DV0PM20052	
	Low speed/ High torque		6000	MGME602 🗌 1 ∗	96	MGD \bigcirc TC3B4	_	G-frame	Approx. 9.0			Note) 6	Note) 6		DV0P4285 ×3 in parallel	Note) 7	components	Connector Kit			
inertia	type /											Note) 6	Note) 0		x3 in paraller		P.252	for Control Power	D-frame and	DV0PM20053	
rtia	1000 r/min		900	MGME094 □ 1 *	125			D from	Annroy 1.8			MFMCD			DV0PM20048			Supply Input Connection	E-frame (400 V)		
						·	·					0**2ECD	0 0**2FCD	_				Connector Kit	A-frame to D-frame	DV0PM20034	- 001
		0 phood		MGME204 🗌 1 ∗				_	Approx. 3.8	MFECA	MFECA	MFMCA	MFMCA		DV0PM20049		Recommended	for Motor		DV0PM20046	- 201
		3-phase 400 V	3000	MGME304 🗌 1 ∗	127	MFD 🔷 TA464	MFD \bigcirc TA464E	F-frame	Approx. 4.5	0**0ETD		0**3ECT		-	×2 in parallel	Note) 7	components	Connection	D-frame (400 V)	DV0PM20054	
			4500	MGME454 🗌 1 ∗	128	MFD 🔷 TA464	MFD \bigcirc TA464E		Approx. 7.5						· · · · · · · · · · · · · · · · · · ·	,	P.252	Connector Kit		DV0PM20045	
			6000	MGME604 🗌 1 *	120		_	Grow	Approx. 9.0			_	-		DV0PM20049			for Regenerative Resistor	D-frame (400 V)	DV0PM20055	
			0000		125			G-irailie	Approx. 3.0			Note) 6	Note) 6		×3 in parallel					DV0PM20036	203
		Single	1000	MHME102 🗌 1 ∗	97				Approx. 1.8							DV0P228		Connector Kit fo		DV0PM20037	204
		phase/	1000		07			D-frame				MFMCD	MFMCA		DV0P4284	DV0P222	DV0P4220	Motor/Encoder		DV0PM20038	
		3-phase	1500									0**2ECD	0**2FCD		DV0F4204	DV0PM20047	DV0F4220			DV0PM20039	205
		200 V	1500	MHME152 🗌 1 *	98	MDD 🗘 15540	MDD \bigcirc 15540E		Approx. 2.3							DV0P222			· · · · · · · · · · · · · · · · · · ·	DV0PM20024 DV0PM20025	198
			0000					- .				MFMCE	MFMCE	-	DV0P4285	DV/0D000	D) (0 D) (000 (0			DV0P4350	- 130
			2000	MHME202 🗌 1 *	99	MED 🔷 17364	MED 🔷 T7364E	E-frame		MFECA	MFECA	0**2ECD	*2ECD 0**2FCD N		Note) 8	DV0P223	DV0PM20043	Connector Kit		DV0PM20026	
			3000	MHME302 🗌 1 🜸	100	MFD \diamondsuit TA390	MFD \diamondsuit TA390E		Approx. 4.5	0**0ETD	0**0ETE					DV0P224			Encoder	DV0PM20010	199
		3-phase	4000	MHME402 🗌 1 🗴	101	MFD \bigcirc TB3A2	MFD \bigcirc TB3A2E	F-frame	Approx. 6		MFMCA 0**3ECT			DV0P4285 x2 in parallel	DV0P225	DV0P3410		Analog Monitor Signal			
-		200 V	5000	MHME502 🗌 1 🗴	102	MFD \bigcirc TB3A2	MFD \bigcirc TB3A2E		Approx. 7.5			0 3201	0 5101					Battery For Abs		DV0P2990	207
High	МНМЕ															_	Recommended	Battery Box No	te) 9	DV0P4430	
ine	2000 r/min		7500	MHME752 🗌 1 🗴	103	MGD \bigcirc TC3B4	_	G-frame	Approx. 11			Note) 6	— Noto) 6		DV0P4285	Note) 7	components	Mounting Bracket	D-frame	DV0PM20030	208
inertia	2000 1/11											Note) 6	Note) 6		×3 in parallel		P.252		without Battery Box	MFECA0**0ETD	
-			1000	MHME104 🗌 1 🗴	130	$MDD \diamondsuit T2412$	MDD \diamondsuit T2412E	D-frame	Approx. 1.8			MFMCD)					Encoder Cable	with Battery Box	MFECA0**0ETE	190
			1500	MHME154 🗌 1 🗴	131	MDD 🔷 T3420	MDD 🔿 T3420E	D-trame	Approx. 2.3			0**2ECD	MFMCE		DV0PM20048				Note) 9		
			2000	MHME204 🗌 1 *	120			E (MFMCE	0**2FCD		DV0PM20049					MFMCA0**2ECD MFMCD0**2ECD	
		0	2000		132			⊏-trame	Approx. 3.3	MFECA	MFECA	0**2ECD)		DV0F1v120049		Recommended			MFMCE0**2ECD	
		3-phase 400 V	3000	MHME304 🗌 1 ∗	133	MFD 🔷 T5440	MFD \bigcirc T5440E		Approx. 4.5	0**0ETD		MEMOA	MFMCA	-	DV0PM20049	Note) 7	components		WITHOUT Brake	MFMCF0**2ECD	
			4000	MHME404 🗌 1 ∗	134	MFD 🔷 TA464	MFD \bigcirc TA464E	F-frame	Approx. 6			MFMCA 0**3ECT			×2 in parallel	,	P.252	Motor Cable		MFMCA0**3ECT	10'4
			5000	MHME504 🗌 1 ∗	135	MFD \bigcirc TA464	MFD \bigcirc TA464E		Approx. 7.5											MFMCD0**3ECT	
			7500	MHME754 🗌 1 *	136		_	G.fram	Approx. 9.0			_	-		DV0PM20049				with Broke	MFMCA0**2FCD MFMCE0**2FCD	194
												Note) 6	Note) 6		×3 in parallel				with Brake	MFMCE0**2FCD MFMCA0**3FCT	105
Not	e) 1 Rotary e	ncoder sp	ecificat	ions: 🗌 Motor spe	cificati	on: * (refer to P	2.16)													DV0P4280	
Not	e) 2 🛇 : Drive	ers series	K: A5	I series H: A5 s	eries															DV0P4281	1
Not	e) 3 🔆 : Drive	ers series	K: A5	IE series H: A5E	series	3												E dames!	25 Ω 50 W	DV0P4282	
Not				es drivers (dedicat		-) do not support	the 17	-bit absolu	ite specific	ation,							External Regenerative		DV0P4283	210
	-			ype can be used ir														Resistor		DV0P4284	_
		•		05: 5 m, 10: 10 m,) m), (Example.	3 m: MFECA003	DEAM)												DV0P4285 DV0PM20048	-
	,	-		nnector kit of option	ns.															DV0PM20048 DV0PM20049	-
				ed by the user.	·	- 11-													DV0P220, DV0P221,		+
	,		,	and refer to P.210			to opender ophic	(hattanıhas	4								Reactor	DV0P223, DV0P224,		209
NOT	,			is not supplied tog			ute encoder cable	e (with	battery box	().									DV0P227, DV0P228, DV0P4170, DV0PM2		
	Please b	buy the ba	ttery pa	rt number "DV0P29	990" Se	eparately.												Noise Filter	DV0P4170, DV0PM2 DV0P4220, DV0PM2		250
																			DV0P3410		251
																			<u> </u>	DV0P4190	17
																		Surge Absorber	,	DV0P1450	253
																		Noise Filter for	,	DV0PM20050	054
																		NOISE FILLER IOF	DIGITAL LITTES	DV0P1460	254

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	200 V	Control	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	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	nod		IGBT PWM Sinusoidal wave drive							
Ва	Enc	coder feed	dback		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							
	P	Ocietical	-i	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	aianal	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.							
		nmunicat ction	tion	RS232	1 : 1 communication							
	iun			RS485	1 : n communication up to 31 axes to a host.							
	Saf	Safety function			Used for functional safety.							
	Front 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	ike		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 antrol in a		(1) Deviation
		Control inpu	It	(3) Electric g
		Control outp	out	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 dela
		Analog	Torque limit command input	Individual tor
		input	Torque feed forward input	Analog volta
			us Speed Observer	Available
		Damping Co		Available
		2DOF settin	igs	Only available
		Control inpu	ıt	(1) Selectionsetup 2(3) Selection
		Control outp	out	Speed arriva
	Sp	Analog	Velocity command input	Speed comn Parameters (6 V/Rated r
	ee.	input	Torque limit command input	Individual tor
	Speed control		Torque feed forward input	Analog volta
		Internal velo	city command	Switching the
			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
	orq	Control outp	Speed arriva	
	Torque control	Analog	Torque command input	Speed comn Parameters
	ntrol *2	input Spood limit		torque Defa
-	10	Speed limit	Speed limit v	
		Control inpu	(1) Deviation(3) Commanswitching e	
		Control outp	out	Full-closed p
	Fu		Max. command pulse frequency	Exclusive int Exclusive int
	- Clo	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 cale	1/40 times to
		100000000000000000000000000000000000000	Available	
		Damping Co	ontrol	Available
-			ontrol	The load ine operating ac set up suppo
-	Cor	Damping Co		The load ine operating ac set up suppo accordance
-	Comm	Damping Co	encoder feedback pulse	The load ine operating ac set up suppo accordance Set up of an
-	Common	Damping Co Auto tuning Division of e Protective		The load ine operating active set up support accordance Set up of any Over-voltage over-heat, ov
-	Common	Damping Co Auto tuning Division of e Protective function	encoder feedback pulse	The load ine operating ac 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)

		100.1/	Main	circuit	Single phase, 100 V to 120 V $^{+10\%}_{-15\%}$ 50 Hz/60 Hz					
		100 V	Contro	l 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 power	200 V	circuit	E-frame to F-frame	3-phase, 200 V to 230 V +10 % -15 % 50 Hz/60 Hz					
	oower	200 V	Control	A-frame to D-frame	Single phase, 200 V to 240 V $^{+10\%}_{-15\%}$ 50 Hz/60 Hz					
			circuit	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 %					
Bas			tempe	erature	Ambient temperature: 0 °C to 50 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation ^{*1})					
iic Sp	Env	ironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation ^{*1})					
Basic Specifications		Alt		tude	Lower than 1000 m					
ation			Vibr	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)					
S	Cor	ntrol meth	od		IGBT PWM Sinusoidal wave drive					
	Enc	oder 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.					
	Parallel I/O	Control	Signal	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.					
				Input	none					
	connector			Output	2 outputs (Analog monitor: 2 output)					
	for	Pulse signal		Input	2 inputs (Photo-coupler input, Line receiver input)					
				Output	4 outputs (Line driver: 3 output, open collector: 1 output)					
	Communication USI function		USB	Connection with PC etc.						
	Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)					
	Reg	generatio	n		A, B-frame: no built-in regenerative resistor (external resistor only) C-fram to F-frame: Built-in regenerative resistor (external resistor is also enabled.)					
	Dyr	namic bra	ke		Built-in					
	Cor	ntrol mode	e		(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control					

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

		Control inpu	t	 (1) Deviation (3) Electric
		Control outp	put	Positioning
			Max. command pulse frequency	Exclusive ir Exclusive ir
	Position control	Pulse	Input pulse signal format	Differential ((1) Positive direction)
	control	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 time
п			Smoothing filter	Primary del
Function		Instantaneo	us Speed Observer	Available
Ы		Damping Co	Available	
		2DOF settin	gs	Only availab
		Auto tuning		The load in operating a up support The gain is
	Co	Division of e	encoder feedback pulse	Set up of a
	Common	Protective	Hard error	Over-voltag over-heat, o
		function	Soft error	Excess pos etc.
		Traceability	of alarm data	The alarm of

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

g complete (In-position) etc.

interface for Photo-coupler: 500 kpps interface for line driver : 4 Mpps

l input

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

es to 1000 times

elay filter or FIR type filter is adaptable to the command input

ole at A5**I**E Series

inertia is identified in real time by the driving state of the motor according to the command given by the controlling device and set rt software "PANATERM".

s set automatically in accordance with the rigidity setting.

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

age, under-voltage, over-speed, over-load, , over-current and encoder error etc.

osition deviation, command pulse division error, EEPROM error

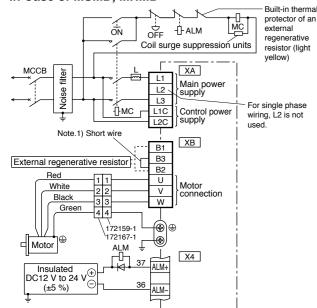
h data history can be referred to.

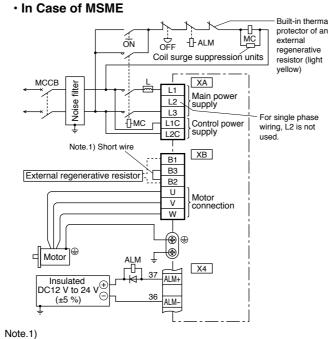
Wiring Diagram

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

Frame	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	without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open between B2-B3			
C-frame D-frame			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			

- Built-in therma

protector of an

. external

In case of not using

an external regenerative resistor.

Shorted between B2-B3 with an

attached short wire

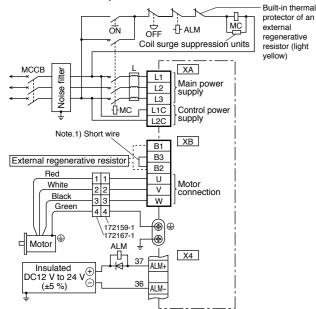
Always open between B2-B3

+ 0 +

ЦЙС

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

In Case of MSMD, MHMD



		+	ON OFF UPALM CON Coil surge suppression units	regenerative resistor (light
* *	MCCB		L XA Main power L3 Image: Main power L3 Control power L23 Control power L20	yellow)
		Note.1) Sh		
E	External re	egenerative	e resistor	
			W W Motor	
	□ Motor]		
	DC12 \	lated / to 24 V⊖ 5 %)		
Note.1	1)			
Frame	Short wire	Built-in	Connection of the connector XB	

In case of using

Connect an external regeneration

een B2-B3

an external regenerative res

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

Connect an external rege

resistor between B1-B2

without

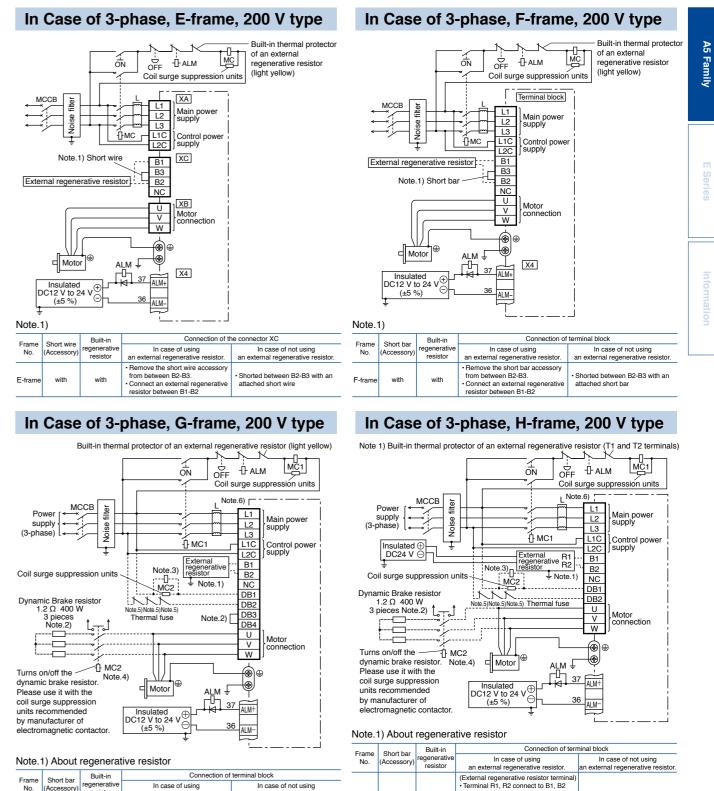
with

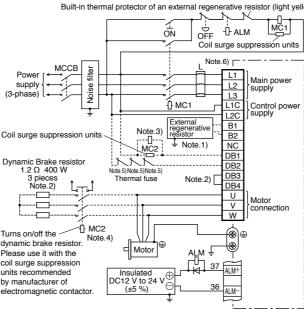
σŇ

In Case of MSME

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

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





	,					,	resistor	an external regenerative resistor.	an external regenerative resistor.				
Frame	Short bar	Built-in	uilt-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, I		Terminal R1, R2 connect to B1, B2 Terminal T1, T2 connection as shown	1				
G-frame	without	without	Connect an external regenerative resistor between B1-B2	Open between B1-B2	H-frame	H-frame without		without	H-frame without with	without with	without without	Terminal 24 V, 0 V connect to DC	Open between B1-B2
Note.2	Note.2) About dynamic brake resistor						power supply of DC24 V. • E terminal connect to the ground						
France	Built-in Connection of terminal block			terminal block	Specification of external regenerative resistor, please refer to P.139, "Options Components"								
No.	Frame Short bar No. (Accessory) dynamic brake resistor.		In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.	Note.2) About dyna			Note.2) About dynamic brake resistor					
		Remove attached short bar		Fromo	Chart har	Built-in	Connection of	erminal block					
G-frame	with	with	between DB3-DB4. • Connect external dynamic brake	 Shorted with attached short bar between DB3-DB4 Open between DB1-DB2 					dynamic brak resistor.	in case of doing	In case of not using an external dynamic brake resistor.		
	non for (3 & H fram	resistor as shown above.		H-frame	without	without	Connect external dynamic brake resistor as shown above.	Open between DB1-DB2				

mmon 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

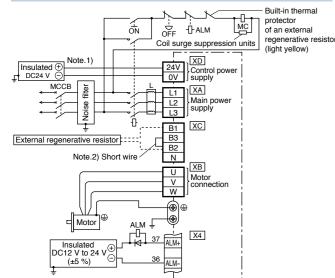
without

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		ne 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

Built-in thermal protector of an external regenerative resistor (light yellow MC1 ÓŇ Coil surge suppression units Note.7) мссв Main powe vlaque supply (3-phase) Note.3) . ☐ MC1 Control power Insulated ⊕ DC24 V ⊖ supply Power supply External regenerative resistor - Note.1) (Neutral point) The AC voltage across DB1 and DB2 must be 300 V or below. Note.4) Dynamic Brake resistor 4.8 Ω 400 W Note.6)Note.6)Note.6) Thermal fuse Note.2) 3 pieces Note.2) ----U Motor V onnection w ћ мс2 Turns on/off the Note.5) dynamic brake resistor. Motor ALM Please use it with the 37 ALM+ coil surge suppression Insulated units reco DC12 V to 24 V (±5 %) by manufacturer of 36 ALM-Note.1) About regenerative resistor Built-in Connection of terminal block Short ha In case of not using In case of using generativ resistor an external regenerative an external regenerative resistor Connect an external regenerative without Open between B1-B2 G-frame without resistor between B1-B2 Note.2) About dynamic brake resisto Built-in Connection of Frame No. Short bar namic brak In case of using an external dynamic brake resistor In case of not using ccesso resistor an external dynamic brake resistor Remove attached short bar

Built-in the protector б'n of an externa regenerative resisto Coil surge suppression units (light yellow) Terminal block 24V DC24 V Control power supply 0V MCCB L1 Main nower lague MC External regenerative resistor Note.2) Short bar Motor W ALM 1 Motor X4 37 ALM+ DC12 V to 24 V (±5 %) ALM-

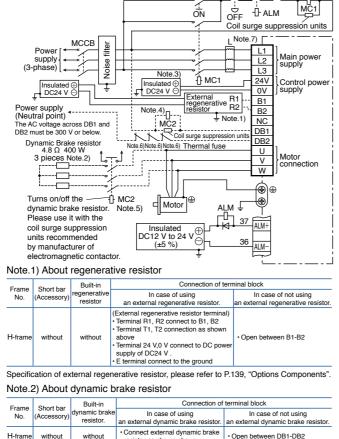
In Case of 3-phase, F-frame, 400 V type

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

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

In Case of 3-phase, 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.

Shorted with attached short bar

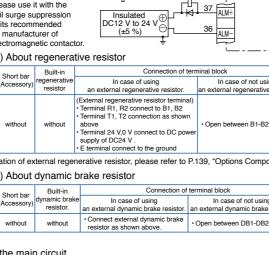
between DB3-DB4 • Open between DB1-DB2

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

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

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)

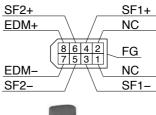
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit). When STO function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

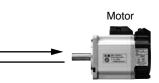
Panasonic Corporation Emergency stop switch

STO signal (Safe torque off)

EDM output





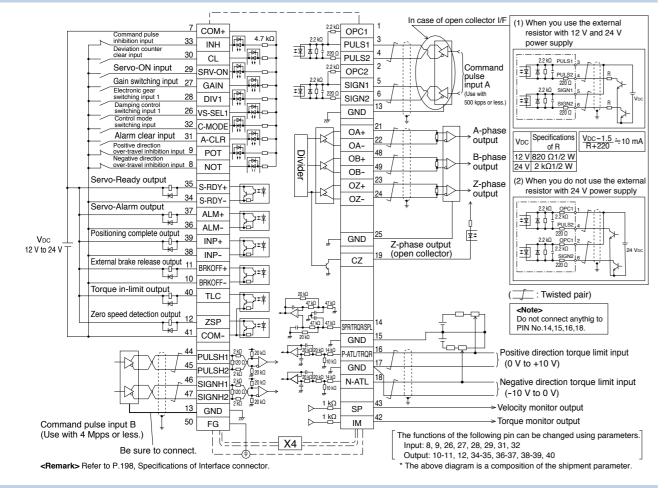


Panasonic Corporation Automotive & Industrial Systems Company http://panasonic.net/id/

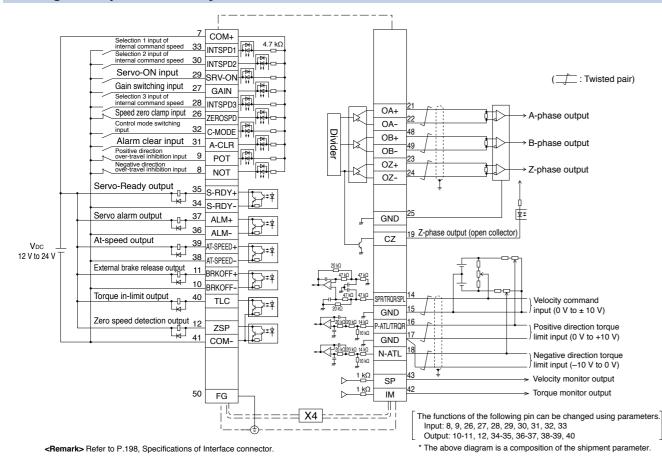
A5 Family

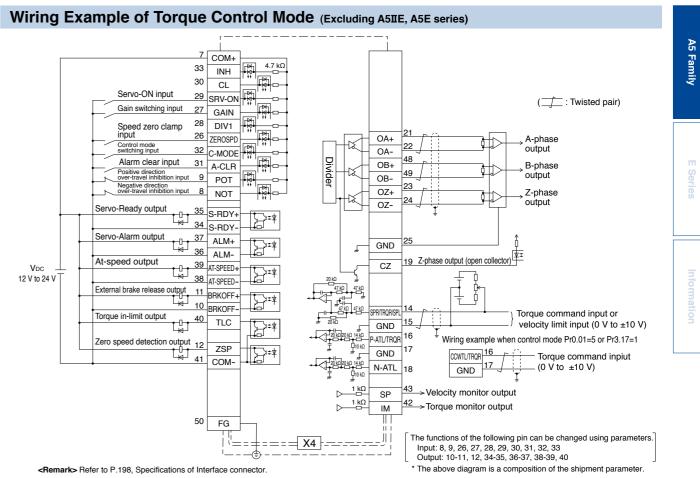
Wiring to the Connector, X4 **Control Circuit Diagram**

Wiring Example of Position Control Mode

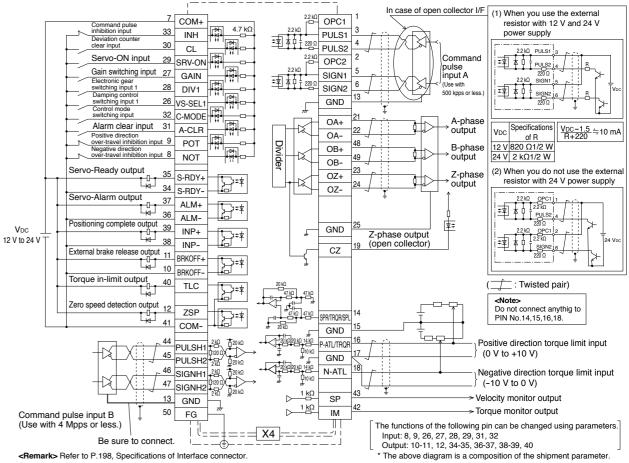


Wiring Example of Velocity Control Mode (Excluding A5IIE, A5E series)





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



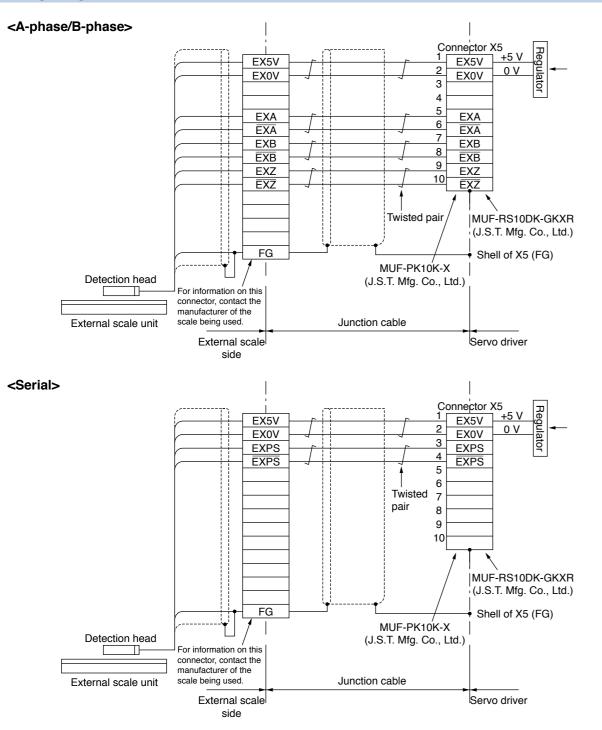
Wiring to the Connector, X5 (Excluding A5IIE, A5E series) **Control Circuit Diagram**

Applicable External Scale

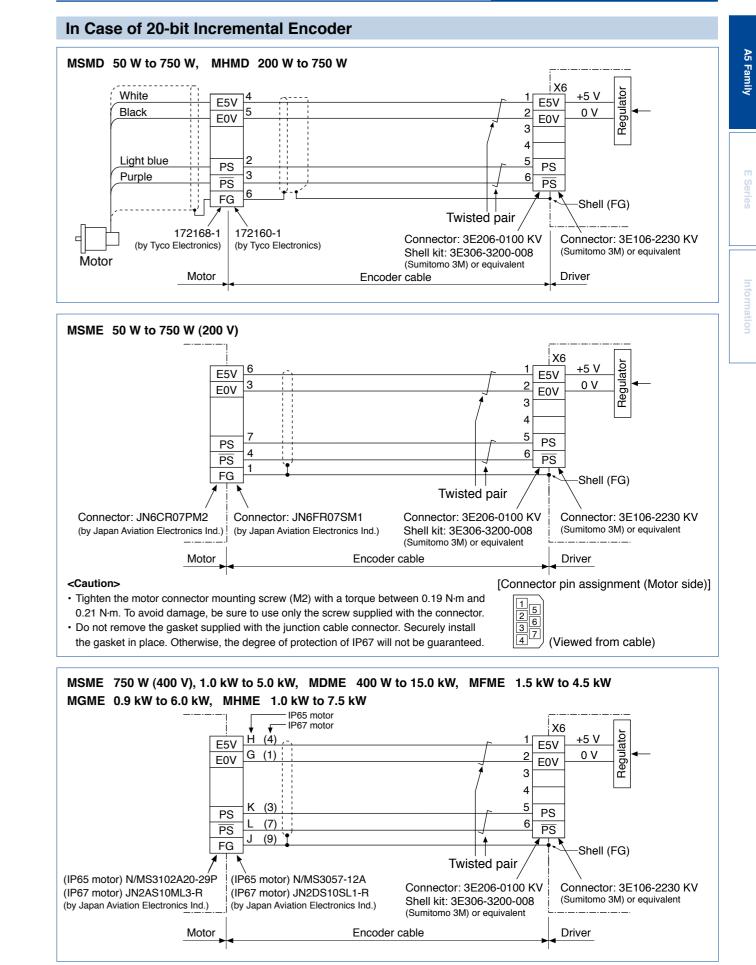
The manufacturers applicable external scales for this product are as follows.

- 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



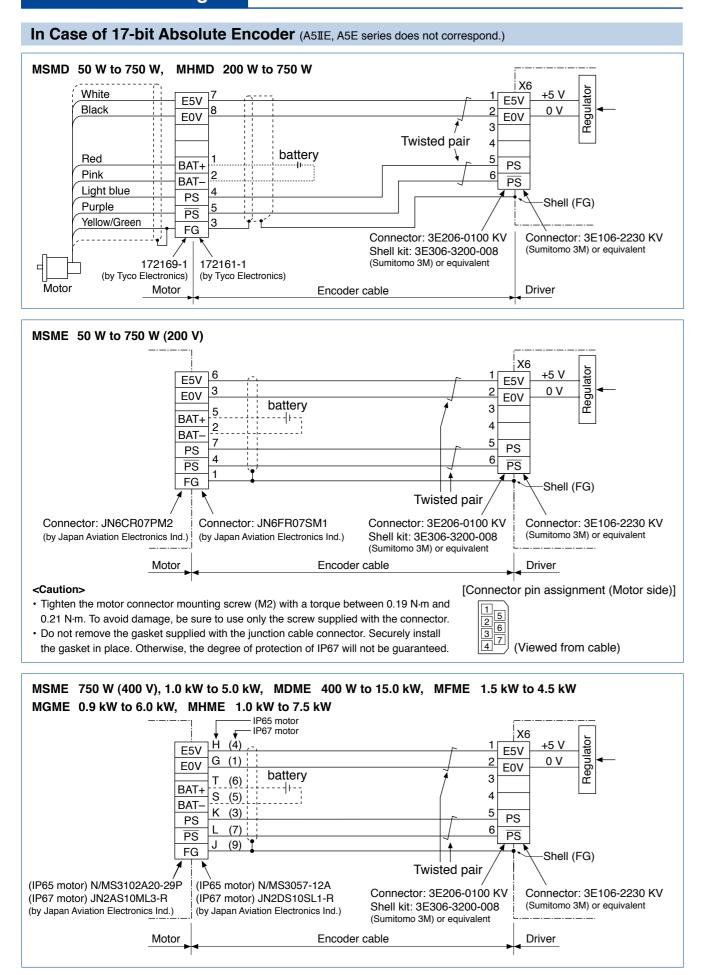
Wiring to the Connector, X6



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

A5 Family **Control Circuit Diagram**

Control Circuit Diagram Wiring to the Connector, X6

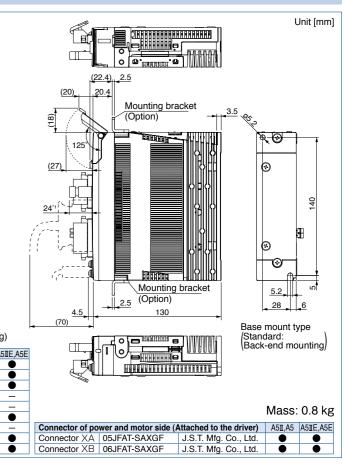


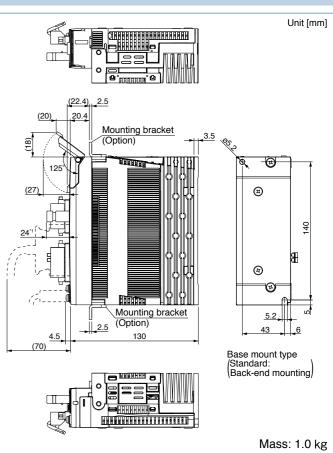
[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

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.

A5 Family Dimensions of Driver





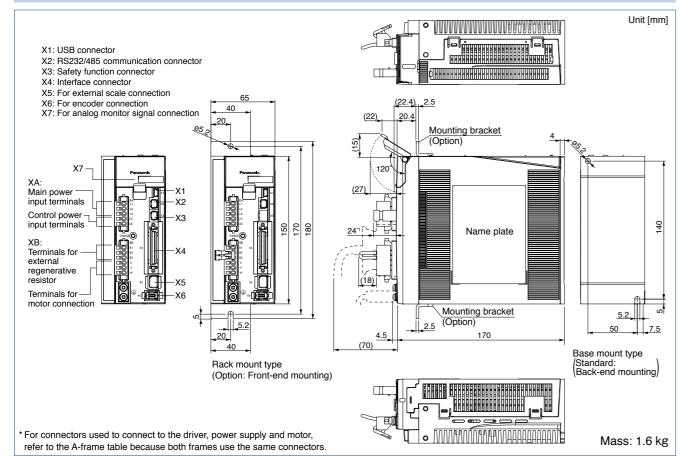


A5 Family

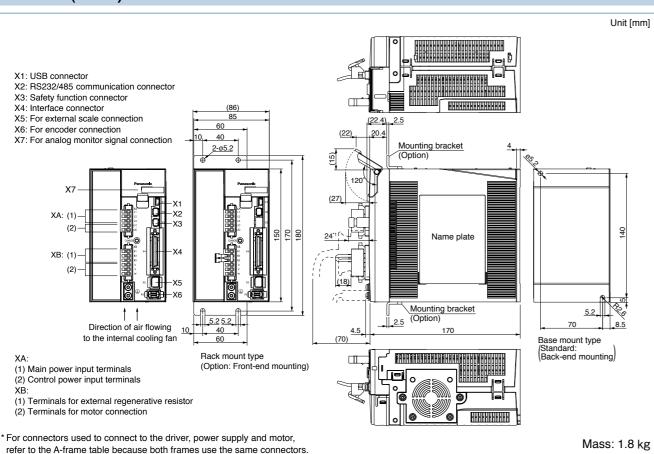
Dimensions of Driver

 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)



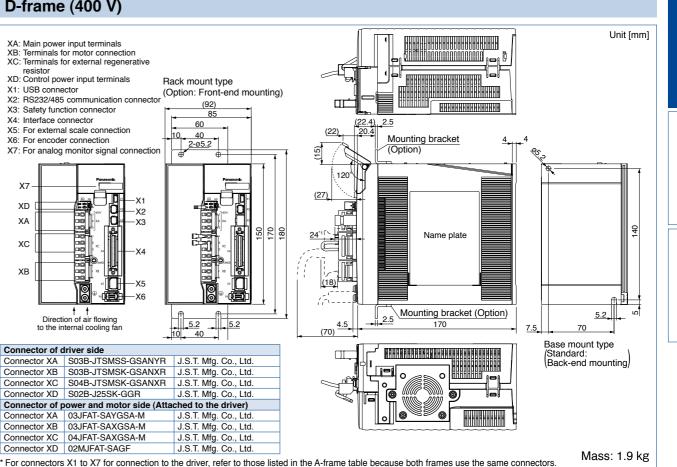
XA: Main power input terminals XB: Terminals for motor connection XC: Terminals for external regenerative resistor XD: Control power input terminals Rack mount type X1: USB connector (Option: Front-end mounting) X2: RS232/485 communication connector (92)X3: Safety function connector X4: Interface connector 60 X5: For external scale connection 40 X6: For encoder connection <u>2-ø5.2</u> X7: For analog monitor signal connection X7 <u>, O</u> -X1 XD -X2 XA -X3 24 XC 00 00 X4 XB -X5 to the internal cooling fan 5.2 10 40 Connector of driver side Connector XA S03B-JTSMSS-GSANYR J.S.T. Mfg. Co., Ltd. Connector XB S03B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XD S02B-J25SK-GGR J.S.T. Mfg. Co., Ltd. Connector of power and motor side (Attached to the driver) Connector XA 03JFAT-SAYGSA-M J.S.T. Mfg. Co., Ltd. Connector XB 03JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd. Connector XC 04JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd.

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

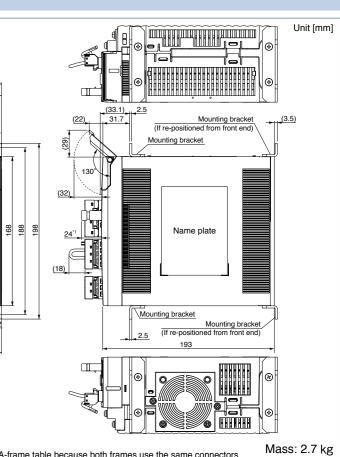
D-frame (400 V)

Connector XD 02MJFAT-SAGF

E-frame (200 V) X1: USB connector X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector X5: For external scale connection X6: For encoder connection 85 X7: For analog monitor signal connection 50 17.5 XA: (1) Main power input terminals 42.5 (2) Control power input terminals XB: Terminals for motor connection 5.2 6 XC: Terminals for external regenerative resistor X7 -X1 D -X2 XA: (1 ХЗ XA: (2 XC -X5 R XB -X6 A A 11 5. Direction of air flowing 42.5 17.5 to the internal cooling fan Connector of driver side Connector XA S05B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XB S03B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSLSS-GSANXR J.S.T. Mfg. Co., Ltd. Connector of power and motor side (Attached to the driver) Connector XA 05JFAT-SAXGSA-L J.S.T. Mfg. Co., Ltd. Connector XB 03JFAT-SAXGSA-L J.S.T. Mfg. Co., Ltd. Connector XC 04JFAT-SAXGSA-L J.S.T. Mfg. Co., Ltd. * For connectors X1 to X7 for connection to the driver, refer to those listed in the A-frame table because both frames use the same connectors.

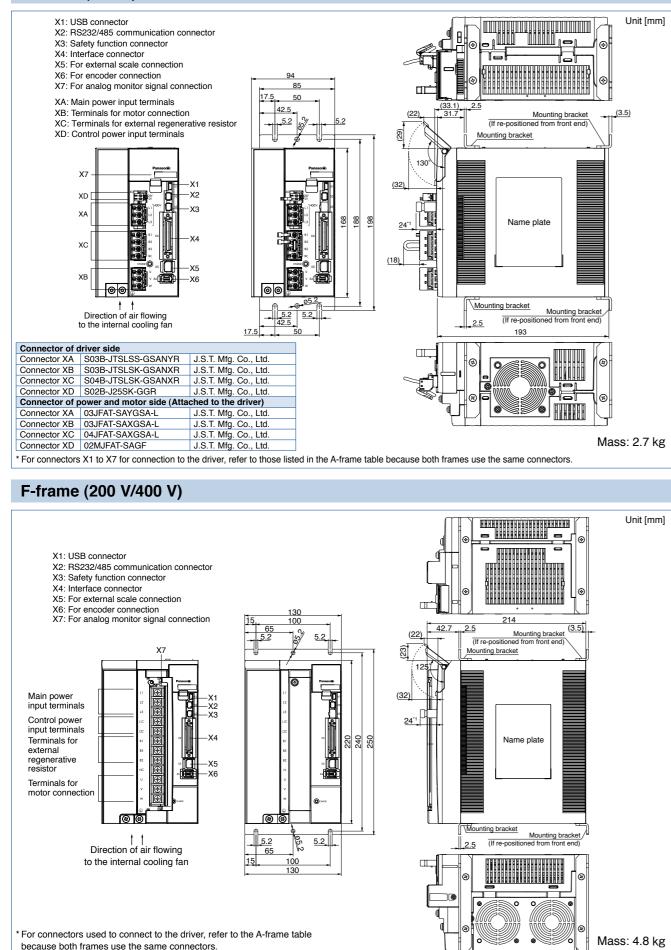


A5 Family



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.

45

Connector X7: For analog monitor signal connection

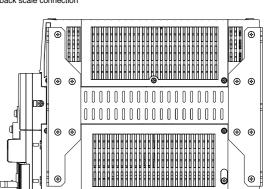
Connector X1: USB connector

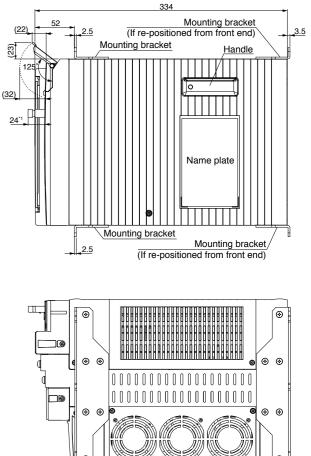
Connector X2: RS232/485 communication connector

-Connector X3: Safety function connector

Connector X4: Parallel I/O connector

Connector X5: For feedback scale connection





Mass: 13.5 kg

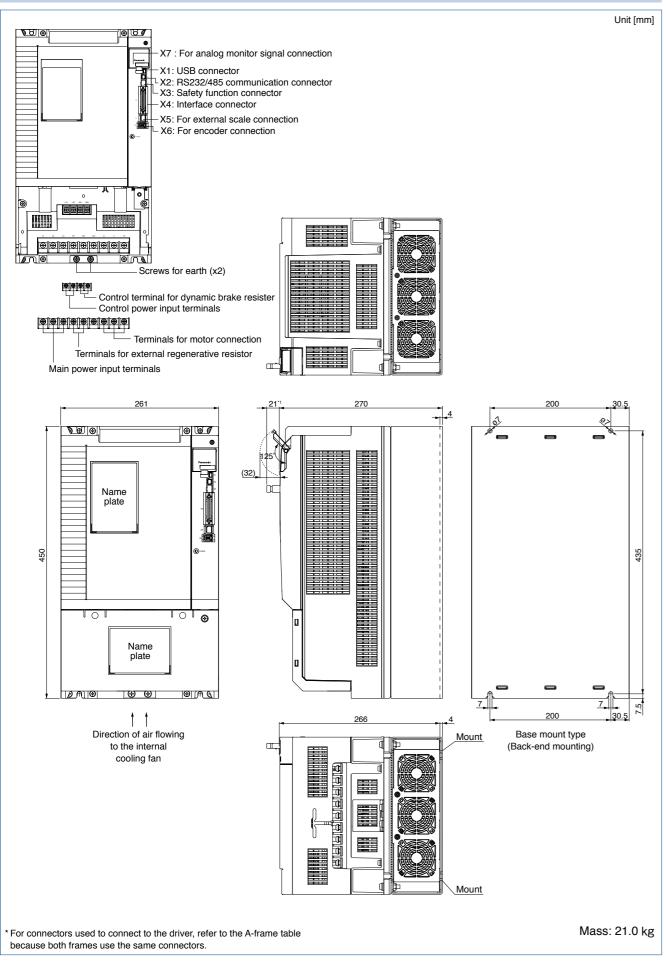
A5 Family

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)

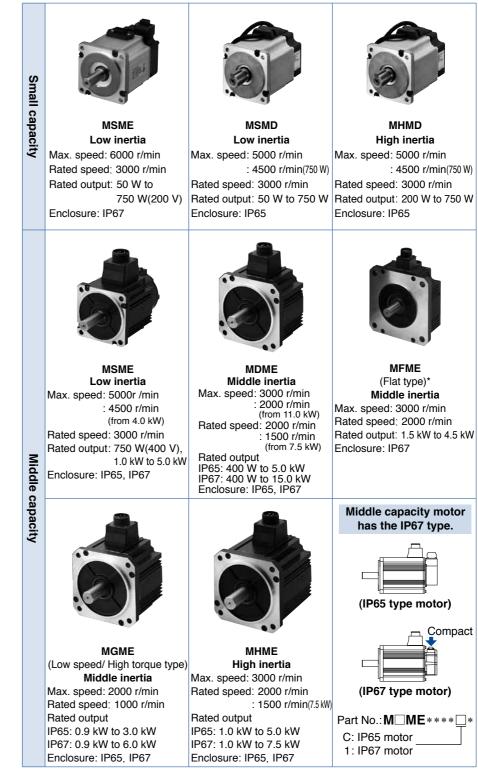


Features/Lineup

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

Motor Specifications

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

Specifications

				AC100 V		
Motor model	IP65			MSMD5AZG1	MSMD5AZS1	
		IP67		-	-	
Annlinghle	Model	A5II, A5 ser	ies	MAD	T1105	
Applicable driver *2	No.	A5IIE, A5E	series	MAD \bigcirc T1105E	-	
diver	Fr	ame symbol	I	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(r	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)	30	00	
Max. rotationa	al speed	(r/	/min)	5000		
Moment of ine	ertia	Without brake		0.025		
of rotor (×10 ⁻⁴	kg∙m²)	With bra	ke	0.027		
	Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
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)	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			

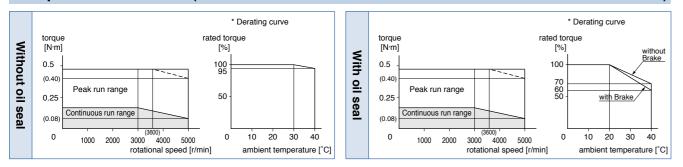
• Permissible load (For details, refer to P.183)

. .	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° 3h9 M3 depth 6 26.5 * For the dimensions with brake, refer to the right page.

[Unit: mm]

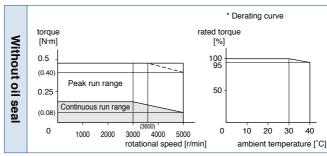
Mass: 0.32 kg

<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

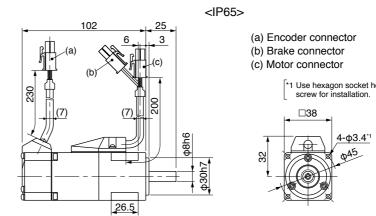
Specifi	cation	S						
			AC2	00 V	• Brake specifications (For details, refer to P.183			
Motor model		IP65	MSMD5AZG1 MSMD5AZS1			ake will be released when it is e use this for braking the motor in		
wotor mode *		IP67	-	_	Static fri	ction torque (N·m)	0.29 or more	
	Model	A5II, A5 series	MAD	T1505	Engagin	g time (ms)	35 or less	
Applicable driver *	No.	A5IIE, A5E series	MAD \bigcirc T1505E	-	Releasir	ig time (ms) Note)4	20 or less	
unver	F	ame symbol	A-fr	ame	Exciting	current (DC) (A)	0.3	
Power supp	y capacit	y (kVA)	0	.5	Releasir	ig voltage (DC) (V)	1 or more	
Rated outpu	t	(W)	5	0	Excitina	voltage (DC) (V)	24±1.2	
Rated torqu	Rated torque (N·m)		0.16					
Momentary	Momentary Max. peak torque (N·m)		0.48		 Permi 	ssible load (For details, refe	er to P.183)	
Rated curre	nt	(A(rms))	1.1			Radial load P-direction (N)	147	
Max. curren	t	(A(o-p))	4.7		During	Thrust load A-direction (N)	88	
Regenerativ		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	117.6	
frequency (tim	es/min) Note)1	DV0P4281	No lim	it Note)2	During	Radial load P-direction (N)	68.6	
Rated rotati	onal spee	d (r/min)	3000		During operation	()		
Max. rotatio	nal speed	(r/min)	50	000		Thrust load A, B-direction (N)	58.8	
Moment of i		Without brake	0.025		For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10	^{−4} kg·m²)	With brake	0.0)27	Dimensions of Driver, refer to P.42. *1 Motor specifications:			
	Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		 *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 17-bit Incremental Absolute		Detail of model designation, refer to P.16. *3 \bigcirc in number of applicable driver represents the			
	Resolutio	n per single turn	1048576	131072	series. For more information about the part num			

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] [% [%] vithou 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.

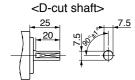
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

A5 Family **Motor Specifications**

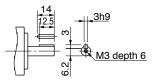
- please refer to P.16.

Mass: 0.53 kg





<Key way, center tap shaft>



[Unit: mm]

A5 Family

Motor Specifications

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

Specifications

				AC1	00 V	
Motor model	IP65		I	MSMD011G1	MSMD011S1	
		IP67		-	-	
Amplicable	Model	A5II, A5 series		MAD	>T1107	
Applicable driver *2	No.	A5IIE, A5E serie	s	MAD 	-	
unver	Fi	ame symbol		A-fra	ame	
Power supply	capacit	y (kVA)	0	.4	
Rated output		(W)	10	00	
Rated torque		(N·m)	0.3	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	orake	Without option		No limit Note)2		
frequency (times	min) Note)1	DV0P4280		No limit Note)2		
Rated rotation	nal spee	d (r/min)	3000		
Max. rotationa	al speed	(r/min)	5000		
Moment of ine	ertia	Without brake		0.0	0.051	
of rotor (×10 ⁻²	kg∙m²)	With brake		0.0)54	
Recommended moment of inertia ratio of the load and the rotor Note)3			3	30 times or less		
Rotary encoder specifications		fications Note)	5	20-bit 17-bit Incremental Absolut		
Resolution		n per single turn		1048576	131072	

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

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

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

During assembly 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

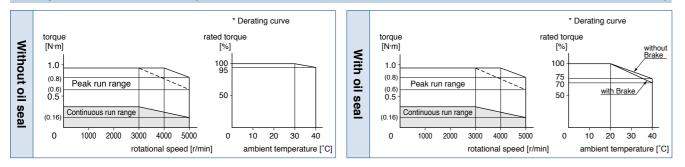
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · 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

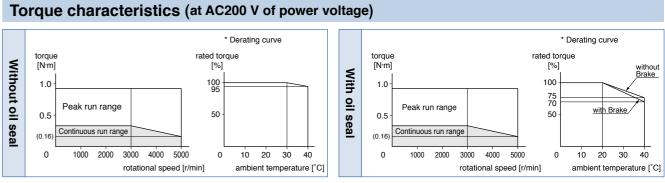
<Without Brake> <IP65> <D-cut shaft> 25 (a) Encoder connector 3 (b) Motor connector 20 1 Use hexagon socket head screw for installation □38 <Key way, center tap shaft> 4-**0**3.4° M3 depth 46.5 * For the dimensions with brake, refer to the right page.

<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]

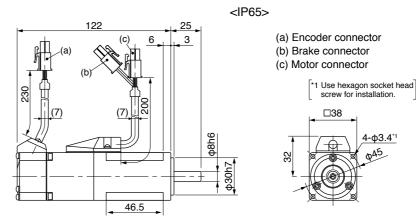
Specifications

Specifica		3						
			AC2	00 V	Brake specifications (For details, refer to P. (This brake will be released when it is energized.)			
Motor model		IP65	MSMD012G1	MSMD012S1		use this for braking the motor in		
*1		IP67	-	-	Static fri	ction torque (N·m)	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	
diver	Fr	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)	1(00	Exciting	voltage (DC) (V)	24±1.2	
Rated torque		(N·m)	0.	32				
Momentary M	ax. pea	k torque (N·m)	0.95 • Permissible load (For details, re		er 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 b		Without option		İt Note)2	assembly	Thrust load B-direction (N)	117.6	
frequency (times/	, ,	DV01 4201		it Note)2	During	Radial load P-direction (N)	68.6	
Rated rotation		. ,		000	operation	Thrust load A, B-direction (N)	58.8	
Max. rotationa	l speed	()	50	000	· ·	, , , , ,		
Moment of ine		Without brake	0.051		For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10 ⁻⁴ kg·m ²) With brake		0.054		 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". 				
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less						
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 \bigcirc 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

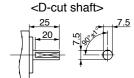
<With Brake>



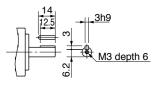
* For the dimensions without brake, refer to the left page. <Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

A5 Family Motor Specifications

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		
		IP67		-	-	
Amplicable	Model	A5II, A5	series	MBD	T2110	
Applicable driver *2	No.	A5IIE, A	5E series	MBD OT2110E	-	
diffen	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 M	ax. pea	k torque	(N·m)	1.91		
Rated current		(A(rms))	2.5		
Max. current			(A(o-p))	10.6		
Regenerative I	orake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	0.14		
of rotor (×10 ⁻⁴	kg∙m²)	With t	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			
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)

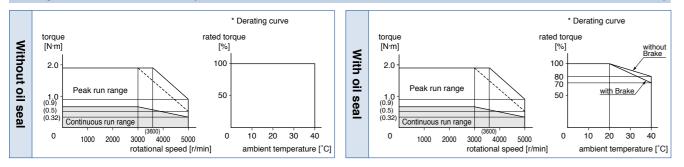
During assembly During operation	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

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

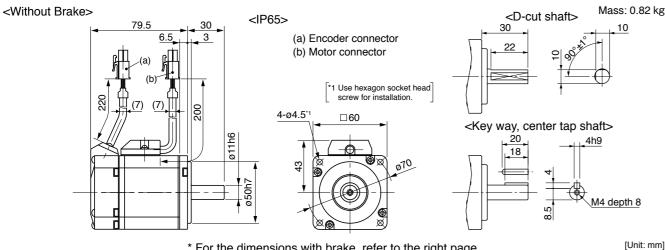
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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



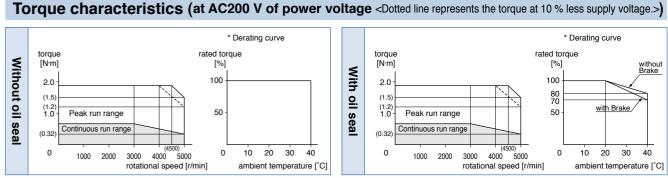
* For the dimensions with brake, refer to the right page. Reduce the moment of inertia ratio if high speed response operation is required.

<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]

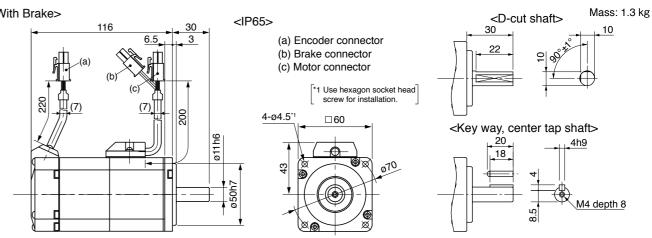
. ...

Specific	ation	S						
			AC2	AC200 V		• Brake specifications (For details, refer to P.183		
Motor mode		IP65	MSMD022G1 MSMD022S1			(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	MAD	T1507	Engagin	g time (ms)	50 or less	
Applicable driver *2	No.	A5IIE, A5E series	MAD \bigcirc T1507E	-	Releasir	ng time (ms) Note)4	15 or less	
	F	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	t	(W)	20	00	Exciting voltage (DC) (V) 24±1.2		24±1.2	
Rated torque)	(N·m)	N·m) 0.64					
Momentary I	Max. pea	k torque (N·m)	1.91		Permi	ssible load (For details, refe	er to P.183)	
Rated currer	nt	(A(rms))	1.	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 (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)	30	00	During operation			
Max. rotation	nal speed	(r/min)	50	00	operation	Thrust load A, B-direction (N)	98	
Moment of ir	nertia	Without brake	0.	14	 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.	16				
	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 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 t		P.16.	
Resolution per single turn			1048576	131072	series. For more information about the part numb			



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**

ts the number please refer to P.16.

[Unit: mm]

Motor Specifications

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

Specifications

				AC1	00 V	
Motor model		IP65		MSMD041G1	MSMD041S1	
WOLOF MODEI *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. rotation	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	0.26		
of rotor (×10-	¹ kg∙m²)	With b	orake	0.	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less		
Rotary encoder specifications No		Note)5	20-bit Incremental	17-bit Absolute		
Resolutio		n per sing	le turn	1048576	131072	

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

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

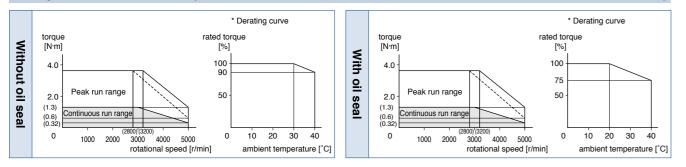
• Permissible load (For details, refer to P.183)

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

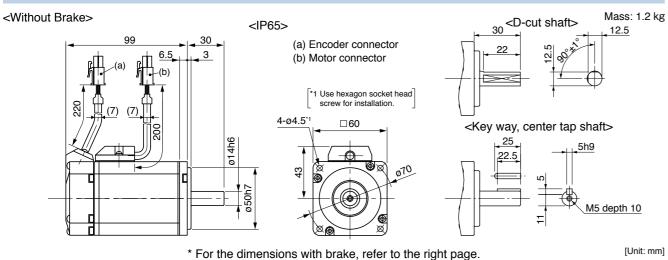
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · 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.>)



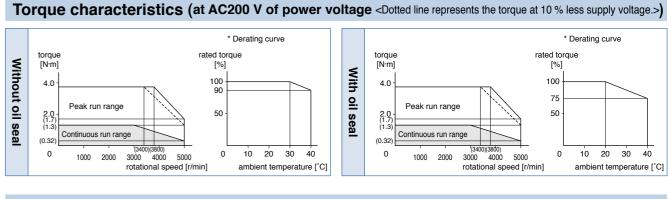
Dimensions



<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.

Specific	ation	S						
			AC2	00 V		specifications (For details	,	
Motor mode		IP65	MSMD042G1	MSMD042S1	Impose (This brake will be released will be released will be not use this for braking the braking the braking the brake will be released			
		IP67	_	-	Static friction 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	
	F	rame symbol	B-fr	ame	Exciting	current (DC) (A)	0.36	
Power suppl	y capacit	y (kVA)	0.9		Releasir	ng voltage (DC) (V)	1 or more	
Rated outpu	1	(W)	400		Exciting	Exciting voltage (DC) (V)		
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 currer	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 lim	it Note)2	assembly	Thrust load B-direction (N)	196	
frequency (time	s/min) Note)1	DV0P4283	No limit Note)2			Radial load P-direction (N)	245	
Rated rotation	nal spee	d (r/min)	3000		During operation		-	
Max. rotation	al speed	l (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.18		o P.182, P.183.	
of rotor (×10	⁻⁴ kg·m²)	With brake	0.	28		ions of Driver, refer to P.42.		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		*2 The p	specifications: roduct that the end of driver m nation has "E" is "Position con	iodel trol 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.		
Resolution per single turn		1048576	131072	series. For more information about the part number				

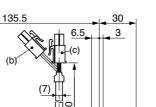


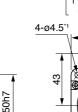
Dimensions

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<With Brake>

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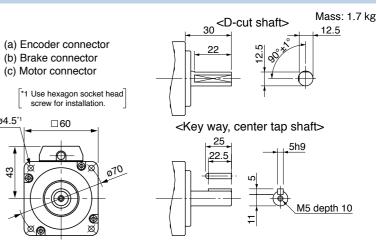
<IP65>

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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]

Motor Specifications

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

Specifications

			AC2	00 V		
Motor model	IP65			MSMD082G1	MSMD082S1	
	IP67					
Anniesekie	Model	A5II, A5	series	MCD<	T3520	
Applicable driver *2	No.	A5IIE, A	5E series	MCD \bigcirc T3520E	-	
diver	Fi	ame 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		4283	No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	4500		
Moment of ine	ertia	Without brake		0.87		
of rotor (×10 ⁻⁴	kg∙m²)	With t	orake	0.97		
Recommender ratio of the loa			20 times or less			
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn				1048576	131072	

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

Static friction torque (N·m)	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

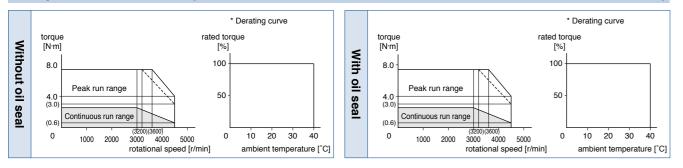
• For details of Note 1 to Note 5, refer to P.182, P.183.

Dimensions of Driver, refer to P.43.

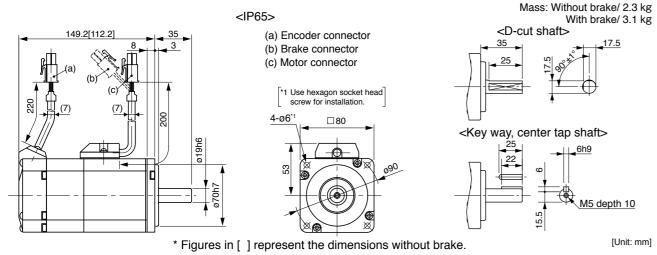
*1 Motor specifications:

- *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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A5 Family

Motor Specifications

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

Specifications

			AC100 V			
Motor model	IP65			MHMD021G1	MHMD021S1	
WOLOF MODEI *1		IP67		-	-	
Annelisseels	Model	A5II, A5	series	MBD	T2110	
Applicable driver *2	No.	A5IIE, A	5E series	MBD 	_	
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			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	0.42		
of rotor (×10-	¹ kg∙m²)	With b	orake	0.45		
Recommender ratio of the loa			30 times or less			
Rotary encoder specifications			Note)5	20-bit Incremental	17-bit Absolute	
Resolution 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

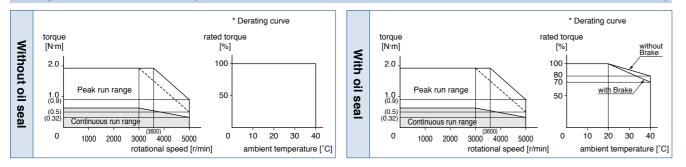
• Permissible load (For details, refer to P.183)

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

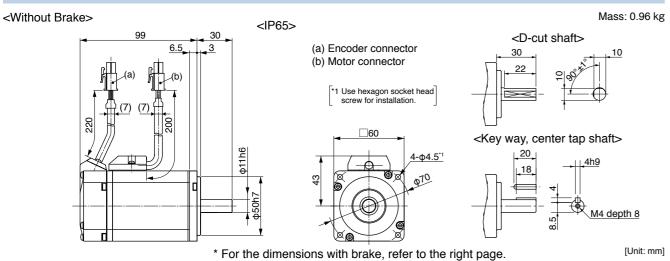
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.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

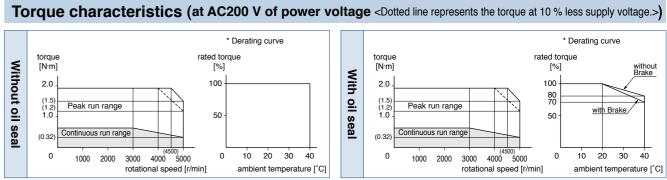


<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

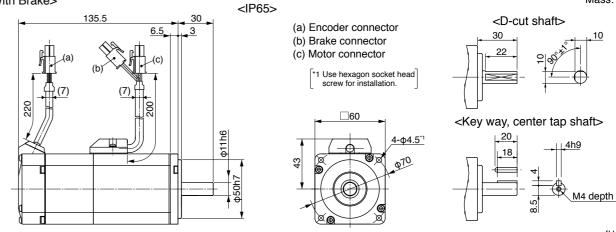
Specifications

Specific	alion	5					
	AC200 V • Brake specifications (F				•	. ,	
Motor model	IP65		MHMD022G1	MHMD022S1	(This brake will be released when it is energized. Do not use this for braking the motor in motion.		
*1	IP67		_	-	Static friction torque (N·m) 1		1.27 or more
	Model A5I, A5 series		MAD	MAD T1507 Enga		g time (ms)	50 or less
Applicable driver *2	No.	A5IIE, A5E series	MAD \bigcirc T1507E	-	Releasing time (ms) Note)4		15 or less
	Fi	ame symbol	A-frame		Exciting	current (DC) (A)	0.36
Power supply	capacit	y (kVA)	0	.5	Releasir	ig voltage (DC) (V)	1 or more
Rated output		(W)	200		Excitina	voltage (DC) (V)	24±1.2
Rated torque		(N·m)	0.64				
Momentary M	ax. pea	k torque (N·m)	1.91		 Permi 	ssible load (For details, refe	er to P.183)
Rated current		(A(rms))				Radial load P-direction (N)	392
Max. current		(A(o-p))	6	.9	During	Thrust load A-direction (N)	147
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	196
frequency (times	, ,	D V 01 4200	No limit Note)2		During	Radial load P-direction (N)	245
Rated rotation		()	3000		operation	Thrust load A, B-direction (N)	98
Max. rotationa	al speed	()	5000		·	, (,	
Moment of ine		Without brake		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·m ²) With brake		0.45		*1 Motor specifications:		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		*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			
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.

Mass: 1.4 kg

[Unit: mm]

A5 Family

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	n) Note)1 DV0P4282		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotation	al speed		(r/min)	5000		
Moment of ine	ertia	Without	t brake	0.67		
of rotor (×10-	¹ kg∙m²)	With t	orake	0.70		
Recommender ratio of the los			30 times or less			
Rotary encod	fications	Note)5	20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072	

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

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

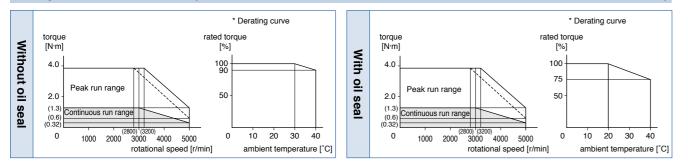
• Permissible load (For details, refer to P.183)

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

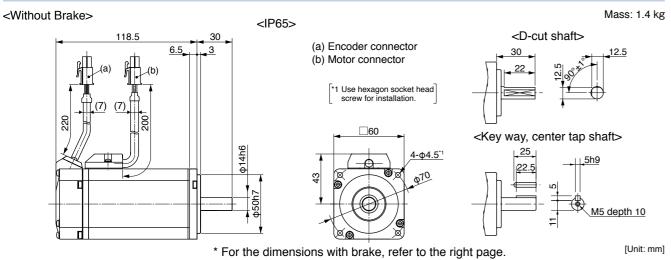
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · Dimensions of Driver, refer to P.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.>)



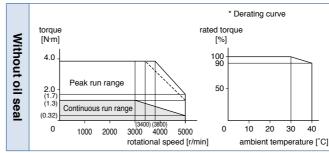
Dimensions



<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]

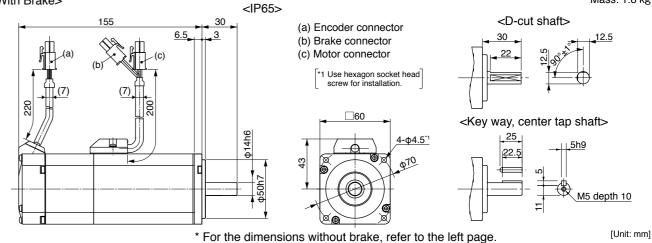
Specifications							
			AC200 V			• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)	
Motor mode		IP65	MHMD042G1	MHMD042S1	Do not use this for braking the motor in motion.		
		IP67	_	_	Static friction torque (N·m) 1.27 or m		1.27 or more
Annilisahla	Model	A5II, A5 series	MBD	T2510	Engaging time (ms) 50 o		50 or less
Applicable driver *2	No.	A5IIE, A5E series	MBD OT2510E	-	Releas	Releasing time (ms) Note)4	
	Fr	ame symbol	B-fr	ame	Excitin	g current (DC) (A)	0.36
Power suppl	y capacit	y (kVA)	0	.9	Releas	sing voltage (DC) (V)	1 or more
Rated outpu	1	(W)	400		Excitin	Exciting voltage (DC) (V)	
Rated torque		(N·m)	1.3				
Momentary I	/lax. peal	k torque (N·m)	3.8		• Perm	 Permissible load (For details, refer to P.183) 	
Rated currer	ıt	(A(rms))	2.6			Radial load P-direction (N)	392
Max. current		(A(o-p))			During	Thrust load A-direction (N)	147
Regenerative		Without option	No lim	it Note)2	assembly	Thrust load B-direction (N)	196
frequency (time	s/min) Note)1	DV0P4283	No limit Note)2		During	Radial load P-direction (N)	245
Rated rotation	nal spee	d (r/min)	3000		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		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		p P.16.	
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 oil seal 75 Peak run rang 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>



<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**

A5 Family

please refer to P.16.

Mass: 1.8 kg

Motor Specifications

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

Specifications

			AC200 V			
Motor model		IP65		MHMD082G1	MHMD082S1	
*1		IP67		-	-	
Applicable	Model	A5II, A5	series	MCD	> T3520	
Applicable driver *2	No.	A5IIE, A	5E series	MCD \bigcirc T3520E	-	
unver	Fi	rame sym	bol	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 (times	/min) Note)1	Note)1 DV0P4283		No limit Note)2		
Rated rotatio	nal spee	d	(r/min)	3000		
Max. rotation	al speed		(r/min)	4500		
Moment of in	ertia	Without	t brake	1.51		
of rotor (×10 ⁻	⁴ kg·m²)	With t	orake	1.61		
Recommender ratio of the lo			20 times or less			
Rotary encoc	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn				1048576	131072	

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

Static friction torque (N·m)	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

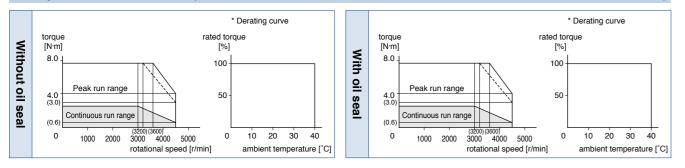
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

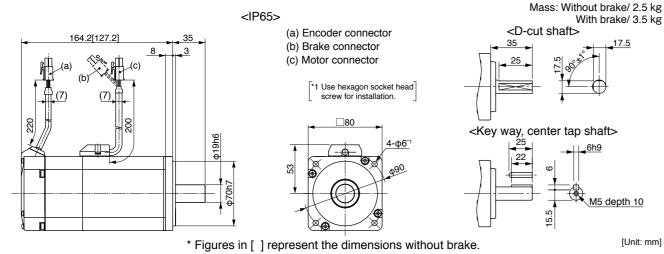
*1 Motor specifications:

- *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 \diamond 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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A5 Family

Motor Specifications

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

Specifications

				AC100 V		
Motor model	IP65		-	-		
*1	IP67		MSME5AZG1	MSME5AZS1		
Applicable	Model	Model A5I, A5 series		MAD	T1105	
Applicable driver *2	No.	A5IIE, A5	5E series	MAD \bigcirc T1105E	-	
unver	Fi	rame syml	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	nin) Note)1 DV0P4280		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	6000		
Moment of ine	ertia	Without	brake	0.025		
of rotor (×10 ⁻²	kg∙m²)	With b	rake	0.027		
Recommender ratio of the loa			30 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072		

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

	,
Static friction torque (N·m)	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

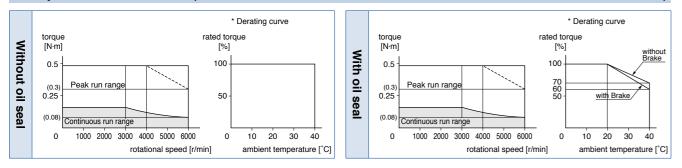
• Permissible load (For details, refer to P.183)

	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.

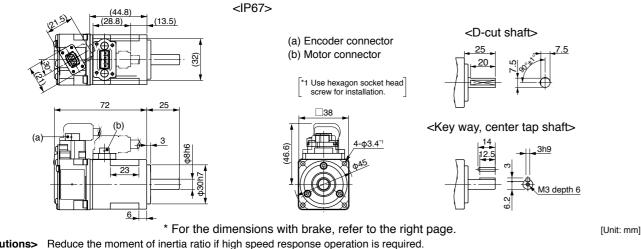
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



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.

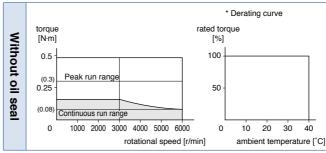
Mass: 0.31 kg



<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]

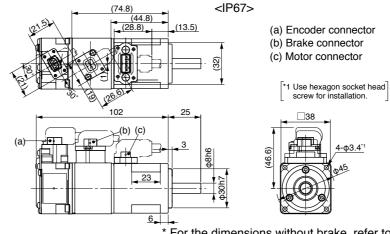
Specifications								
			AC200 V			• Brake specifications (For details, refer to P.183)		
Motor model	IP65		-	-		(This brake will be released when it is energized Do not use this for braking the motor in motion.		
*1	IP67		MSME5AZG1	MSME5AZS1	Static fri	Static friction torque (N·m)		
	Model	A5II, A5 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	ig voltage (DC) (V)	1 or more	
Rated output		(W)	5	0	Exciting	Exciting voltage (DC) (V)		
Rated torque		(N·m)	0.16		Exciting voltage (DC) (V) 24±1.2			
Momentary M	ax. peal	k torque (N·m)	0.48		Permi	ssible load (For details, refe	er 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 limit Note)2			Radial load P-direction (N)	68.6	
Rated rotation	nal spee	d (r/min)	3000		During	()		
Max. rotationa	al speed	(r/min)	6000		operation	Thrust load A, B-direction (N)	58.8	
Moment of ine	ertia	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. 		
of rotor (×10-	kg∙m²)	With brake	0.0)27				
Recommended moment of inertia ratio of the load and the rotor Note)3		30 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 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 th		P.16.		
Resolution per single turn		1048576	131072	series. For more information about the part number				

Torque characteristics (at AC200V of power voltage) * Derating curv * Derating curve torque [N·m] torque [N·m] rated torque rated torque [%] [%] With oil 0.5 0.5 100 100 -70 60 Peak run ran Peak run rand (0.3 (0.3 50 0.2 seal 0.25 with Brake (0.08 Continuous run range Continuous run range 1000 2000 3000 4000 5000 6000 10 20 30 40 1000 2000 3000 4000 5000 6000 10 20 30 40 0 0 0 0 ambient temperature [°C] rotational speed [r/min] ambient temperature [°C] rotational speed [r/min]



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.



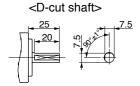
* For the dimensions without brake, refer to the left page. <Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

A5 Family **Motor Specifications**

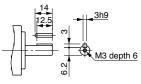
nber please refer to P.16.



Mass: 0.51 kg



<Key way, center tap shaft>



[Unit: mm]

A5 Fa

Motor Specifications

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

Specifications

			AC1	00 V		
Motor model		IP65		-	-	
wotor model *1		IP67		MSME011G1	MSME011S1	
Annlinghle	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	lax. pea	k torque	(N·m)	0.95		
Rated current	:	(.	A(rms))	1.6		
Max. current		((A(o-p))	6.9		
Regenerative	brake	Without option		No limit Note)2		
frequency (times	/min) Note)1	in) Note)1 DV0P4280		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotation	al speed	l	(r/min)	6000		
Moment of in	ertia	Without	brake	0.051		
of rotor (×10-	¹ kg∙m²)	With b	orake	0.054		
Recommender ratio of the los			30 times or less			
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.

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

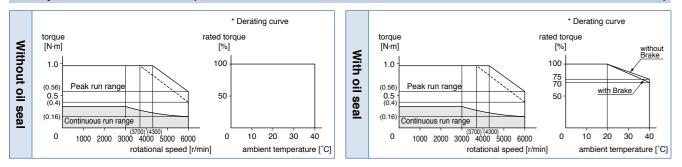
• Permissible load (For details, refer to P.183)

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.

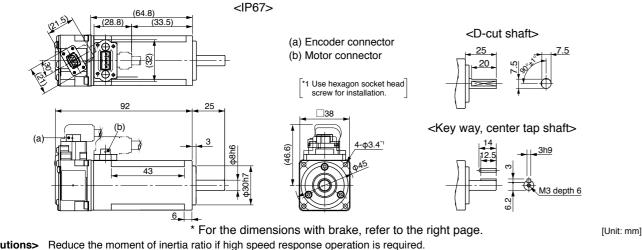
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



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

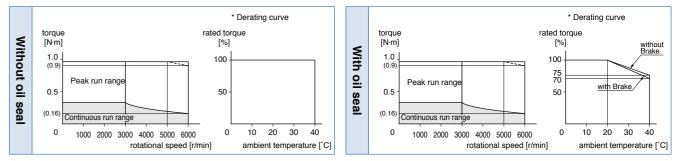


<Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MSME 100 W [Low inertia, Small capacity]

A 141 11

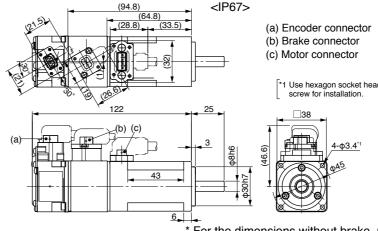
Specifications							
			AC2	00 V	• Brake specifications (For details, refer to P.183)		
Motor model	IP65				(This brake will be released when it is energized. Do not use this for braking the motor in motion.)		
WOTOL THOOLEI *1	IP67		MSME012G1	MSME012S1	Static friction torque (N·m)		0.29 or more
	Model	A5II, A5 series	MAD\>T1505		Engaging time (ms)		35 or less
Applicable driver *2	No.	A5IIE, A5E series	MAD \bigcirc T1505E	-	Releasir	ng time (ms) Note)4	20 or less
	Frame symbol		A-frame		Exciting	Exciting current (DC) (A)	
Power supply	capacit	y (kVA)	0.5		Releasing voltage (DC) (V)		1 or more
Rated output		(W)	100		Exciting voltage (DC) (V)		24±1.2
Rated torque		(N·m)					
Momentary Max. peak torque (N·m)		0.95		• Permissible load (For details, refer to P.183)			
Rated current (A(rms))		1.1			Radial load P-direction (N)	147	
Max. current			4.7 No limit Note)2		During assembly	Thrust load A-direction (N)	88
Regenerative t						Thrust load B-direction (N)	117.6
frequency (times/	min) Note)1	DV0P4280	No limit Note)2			Radial load P-direction (N)	68.6
Rated rotational speed (r/min)		3000		During operation			
Max. rotational speed (r/min)		6000		operation	Thrust load A, B-direction (N)	58.8	
Moment of inertia With		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·m ²) 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 represe		P.16. presents the	
Resolution per single turn			1048576	131072	series. For more information about the part number please refer to P.16.		
piease relet to F. TO.							

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.

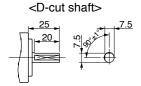


* For the dimensions without brake, refer to the left page. <Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

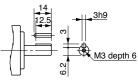
A5 Family **Motor Specifications**



1 Use hexagon socket head



<Key way, center tap shaft>



[Unit: mm]

Motor Specifications

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

Specifications

				AC100 V		
Motor mode		IP65		-	-	
	;1	IP67		MSME021G1 MSME021S		
Annlinghla	Model	A5II, A5 series		MBD 		
Applicable driver *	No.	A5IIE, A	A5IIE, A5E series MBD T2110E		-	
unver	Fr	Frame symbol		B-frame		
Power supp	ly capacit	у	(kVA) 0.5			
Rated outpu	ut	(W)		200		
Rated torqu	Rated torque (N·m)			0.64		
Momentary	Momentary Max. peak torque (N·m)			1.91		
Rated curre	Rated current (A(rms))			2.5		
Max. curren	nt		(A(o-p))) 10.6		
Regenerativ	Regenerative brake		option	No limit Note)2		
frequency (tim	nes/min) Note)1	DV0P	4283	No limit Note)2		
Rated rotational spee		d (r/min) 300		00		
Max. rotatio	nal speed		(r/min)) 6000		
Moment of i	inertia	Without brake		0.14		
of rotor (×10	0 ⁻⁴ kg∙m²)	kg·m²) With brake		0.16		
Recomment ratio of the I				30 times or less		
Rotary encoder specif		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.

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		

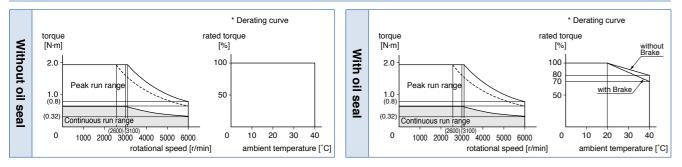
• Permissible load (For details, refer to P.183)

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

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

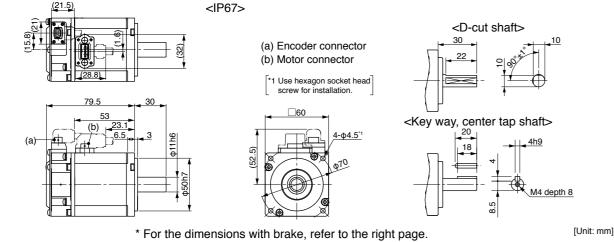
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about 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 <In Case of Without Brake, Cable direction to output shaft.>

Mass: 0.78 kg



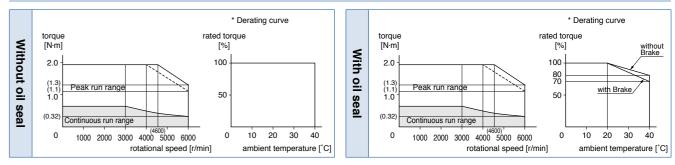
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

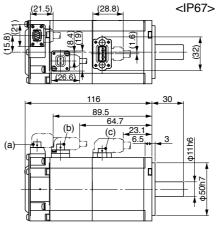
Specification

Specifications								
			AC2	00 V	Brake specifications (For details,			
Motor mode	IP65				(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
	IP67		MSME022G1	MSME022S1	Static friction torque (N·m)		1.27 or more	
A 15 1 1	Mode	A5I, A5 series	MAD\T1507		Engagin	Engaging time (ms)		
Applicable driver *2	No.	A5IIE, A5E series	MAD _{OT1507} E	-	Releasing time (ms) Note)4		15 or less	
	Frame symbol		A-frame		Exciting	Exciting current (DC) (A)		
Power suppl	er supply capacity (kVA) 0.5 Releasing vo		ng voltage (DC) (V)	1 or more				
Rated outpu	:	(W)	200		Exciting	Exciting voltage (DC) (V)		
Rated torque		(N·m)	0.64		Exciting voltage (DC) (V) 24±1.2			
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			6.5 No limit Note)2		During	Thrust load A-direction (N)	147	
Regenerative					assembly	Thrust load B-direction (N)	196	
frequency (time	s/min) Note	^{b)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) 600		00	operation	Thrust load A, B-direction (N)	98			
Moment of inertia Without		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.	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". 				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	Detail	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents th			
Resolution 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.>)



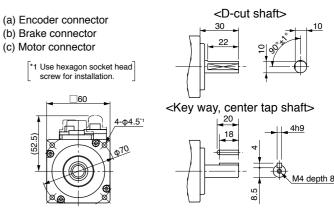
Dimensions <In Case of With Brake, Cable direction to output shaft.>



* 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

			AC100 V			
Motor mode		IP65		-	-	
Motor mode	∄I ⊧1	IP67		MSME041G1	MSME041S1	
Angliaghte	Model	A5II, A5	series	MCD	T3120	
Applicable driver *	^{∗2} 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)	4(00	
Rated torqu	ie		(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)	30	00	
Max. rotatio	nal speed		(r/min)	6000		
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 Note)3			30 times	s or less	
Rotary enco	Rotary encoder specification			20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072	

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

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

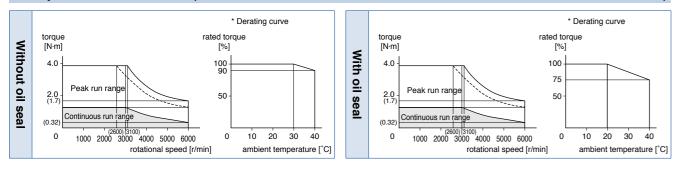
• Permissible load (For details, refer to P.183)

	_ .		392
	Thrust load A-direction (N)	147	
	accombry	Thrust load B-direction (N)	196
	During	Radial load P-direction (N)	245
U U	operation	Thrust load A, B-direction (N)	98

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

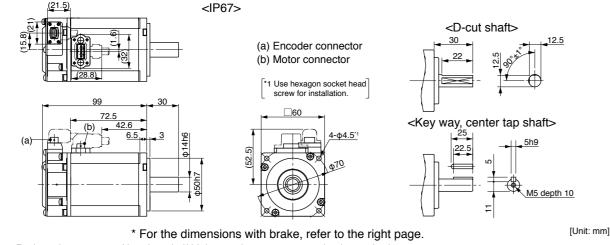
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

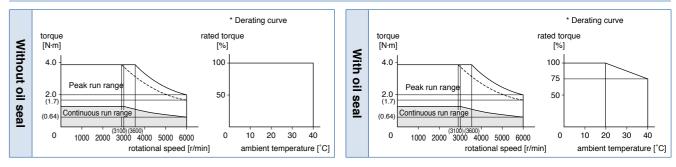


<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

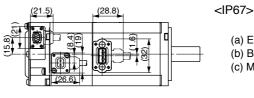
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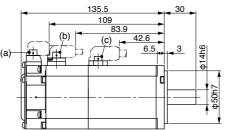
AC200 V Motor model *1 IP65 - - Applicable driver *2 IP65 - - Motor model *1 IP67 MSME042G1 MSME042S1 Static friction torque (N-m) 1.27 or more Applicable driver *2 Model No. ASIL A Series MBD\T2510 - - Frame symbol B-frame B-frame - - Static friction torque (N-m) 1.27 or more Rated output (KVA) 0.9 - Static friction torque (N-m) 1.5 or less Rated output (N/M) 400 - Exciting current (DC) (A) 0.36 Releasing woltage (DC) (V) 1 or more Exciting voltage (DC) (V) 1 or more Rated current (A(m)) 1.0.2 - - Max. current (A(o-p)) 10.2 - - Max. current (Imestimin Noteij2 0V0P4283 No limit Noteij2 - - Max. rotational speet of rotor (x10 ⁻⁴ kgm?) With orake 0.28 - - Max. rotational speet of rotor (x10 ⁻⁴ kgm?) With orake 0.28 - -	Specifications								
Motor model IP65 - - Motor model IP67 MSME042G1 MSME042S1 Static friction torque (N-m) 1.27 or more Applicable driver Model ASII, A5 series MBD <t2510< th=""> - Engaging time (ms) 50 or less Power supply rame symbol BBD<t2510< th=""> - Releasing time (ms) Notej4 15 or less Power supply rame symbol BBT MBD - Releasing time (ms) Notej4 15 or less Rated output (W1) 400 Releasing time (ms) Notej4 1 or more Rated torque (N-m) 1.3 Releasing voltage (DC) (V) 24±1.2 Momentary Max. current (A(orp)) 2.4 Relial load P-direction (N) 392 Rated current (A(orp)) 10.2 Radial load P-direction (N) 392 Rated rotational spector (rimesimin) Notej1 Without option No limit Notej2 Radial load P-direction (N) 392 Rated rotational spector (r/min) 0600 Soution (r/min) 300 times/2 Radial load P-direction (N) 98 Prove datilis of Note 1 to Note 5, refer to P.182, P.183. Dimensions of</t2510<></t2510<>			AC2	200 V		•			
**1IP67MSME042G1MSME042S1Static friction torque (N-m)1.27 or moreApplicable driver*2A5I, A5 seriesMBD T2510E-Engaging time (ms)50 or lessApplicable driver*2 $A5I, A5E$ seriesMBD T2510E-Engaging time (ms)Note)415 or lessPower supply capacity(N/m) $B-fraceExciting current (DC) (A)0.360.36Power supply capacity(N/m)1.3Releasing voltage (DC) (V)1 or moreRated output(N/m)1.3Momentary Max. current(A(ms))2.4Max. current(A(ms))2.4Rated current (Memioni) Note)No limit Note)2Rated rotational spector (memioni) Note)No limit Note)2Rated rotational spector (rimerini) Note)Moment of inertiaratio of the load and trot of inertia$									
Applicable driver No. ASIE, ASE series MBD T2510E - Frame symbol B-frame - Releasing time (ms) Note)4 15 or less Power supply capacity (kVA) 0.9 Releasing time (ms) Note)4 10 or more Rated output (W) 400 Releasing time (ms) Note)4 10 or more Rated torque (N·m) 1.3 Releasing voltage (DC) (V) 24±1.2 Momentary Max. peak torque (N·m) 3.8 Releasing voltage (DC) (V) 24±1.2 Max. current (A(o-p)) 10.2 Permissible load (For details, refer to P.183) Permissible load -direction (N) 392 Regenerative brake frequency (imes/min) Note)1 Without option No limit Note)2 No limit Note)2 Ratial load P-direction (N) 147 Rated rotational speed (r/min) 3000 98 - For details of Note 1 to Note 5, refer to P.182, P.183. - Moment of inertia ratio of the load and the rotor Note)3 20-bit 17-bit - - - - Recommended moment of inertia ratio of the load and the rotor Note)3 20-bit 17-bit - - -			IP67	MSME042G1	MSME042S1	Static fri	ction torque (N·m)	1.27 or more	
driver *2 No. ASIIE, ASE series MBD \T2ST0E - Frame symbol B-frame	Annlinghle	Model	A5II, A5 series	MBD	T2510	Engagin	g time (ms)	50 or less	
Frame symbolB-framePower supply capacity(kVA)0.9Rated output(W)400Rated output(W)400Rated torque(N·m)1.3Momentary Max. peak torque(N·m)3.8Rated current(A(rms))2.4Max. current(A(o-p))10.2Regenerative brake frequency (times/min) Note)Without optionNo limit Note)2Rated rotational speed(r/min)300Moment of inertia of rotor (x10 ⁻⁴ kg·m ²)Without brake0.26Moment of local and the load and the rotor ratio of the load and the rotor30 times or lessRotary encoder specticationsNolejs17-bit AbsoluteRotary encoder specticationsNolejs17-bit AbsoluteResolution to resign turn1048576131072		No.	A5IIE, A5E series	MBD OT2510E	-	Releasir	ng time (ms) Note)4	15 or less	
Rated output (W) 400 Rated output (W) 400 Rated output (W) 1.3 Momentary Max. peak torque (N·m) 3.8 Rated current (A(rms)) 2.4 Max. current (A(o-p)) 10.2 Regenerative brake frequency (times/min) Note)1 Without option No limit Note)2 Ratial load P-direction (N) 392 Rated rotational speed frequency (times/min) Note)1 Without option No limit Note)2 Ratial load P-direction (N) 147 Moment of inertia ratio of the load and the rotor With brake 0.26 Thrust load A, B-direction (N) 245 Recommended moment of inertia ratio of the load and the rotor With brake 0.28 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, refer to P.16. Rotary encoder specifications 20-bit Incremental Absolute 31072 *3 (in number of applicable driver represents the series. For more information about the part number,		F	rame symbol	B-fr	ame	Exciting	current (DC) (A)	0.36	
Rated torque (N·m) 1.3 Rated torque (N·m) 1.3 Momentary Max. peak torque (N·m) 3.8 Rated current (A(rms)) 2.4 Max. current (A(o-p)) 10.2 Regenerative brake frequency (times/min) Note)1 Without option No limit Note)2 Radial load P-direction (N) 392 Rated rotational speed (r/min) 3000 Radial load P-direction (N) 147 Moment of inertia ratio of the load and the rotor With brake 0.26 Recommended moment of inertia ratio of the load and the rotor So times or less For details of Note 1 to Note 5, refer to P.182, P.183. Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute 17-bit Absolute 17-bit an number of applicable driver represents the series. For more information about the part number,	Power supply	/ capacit	ty (kVA)	0	.9	Releasir	ng voltage (DC) (V)	1 or more	
Rated torque (N·m) 1.3 Momentary Max. peak torque (N·m) 3.8 Rated current (A(rms)) 2.4 Max. current (A(o-p)) 10.2 Regenerative brake frequency (times/min) Note)1 Without option No limit Note)2 Rated rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m ²) Without brake 0.26 Recommended moment of inertia ratio of the load and the rotor 30 times or less 30 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute 17-bit Absolute 17-bit assertion 17-bit noremental 17-bit Absolute 17-bit assertion 1048576 131072	Rated output		(W)	400		Exciting	voltage (DC) (V)	24±1.2	
Rated current (A(rms)) 2.4 Max. current (A(o-p)) 10.2 Regenerative brake frequency (times/min) Note)1 Without option No limit Note)2 DVOP4283 No limit Note)2 DvoP4283 No limit Note)2 Rated rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) Without brake 0.26 Recommended moment of inertia ratio of the load and the rotor Withous 0.28 Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute 17-bit Absolute 17-bit Resolution per single turn 1048576 131072 Actional speed Gradial code P-direction (N) 392 Resolution per single turn 1048576 131072 For details of Note 1 to Note 5, refer to P.182, P.183. P.182, P.183.	Rated torque		(N·m)	1.3			0 ()()		
Max. current(A(o-p))10.2Radial load P-direction (N)392Max. current(A(o-p))10.2Thrust load A-direction (N)147Regenerative brake frequency (times/min) Note)1DV0P4283No limit Note)2Thrust load B-direction (N)196Rated rotational speed Max. rotational speed of rotor (x10 ⁻⁴ kg·m ²)DV0P4283No limit Note)2During 3000Radial load P-direction (N)245Moment of inertia ratio of the load and the rotor Note)3Moither of the load and the rotor Note)30.28For details of Note 1 to Note 5, refer to P.182, P.183. • Dimensions of Driver, refer to P.42.• For details of Note 1 to Note 5, refer to P.182, P.183. • Dimensions of Driver, refer to P.42.Rotary encoder specifications Resolution per single turn1048576131072* 3 \circ in number of applicable driver represents the series. For more information about the part number,	Momentary N	lax. pea	k torque (N·m)	3.8		 Permi 	 Permissible load (For details, refer to P.183) 		
Induct outron (r(c p)) Induct option No limit Note) Regenerative brake frequency (times/min) Note)1 Without option No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 6000 Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) Without brake 0.26 Recommended moment of inertia ratio of the load and the rotor Withou's 17-bit Incremental Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute Resolution per single turn 1048576 131072 *3 (in number of applicable driver represents the series. For more information about the part number,	Rated curren	t	(A(rms))	2.4			Radial load P-direction (N)	392	
Hegenerative brake frequency (times/min) Note)1 Without option1 Notinit Note)2 Thrust load B-direction (N) 196 Rated rotational speed (r/min) 3000 Badial load P-direction (N) 245 Max. rotational speed (r/min) 6000 Thrust load A, B-direction (N) 98 Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) With brake 0.26 For details of Note 1 to Note 5, refer to P.182, P.183. Recommended moment of inertia ratio of the load and the rotor Note)3 30 times or less *1 Motor specifications: □ Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute 17-bit Absolute Resolution per single turn 1048576 131072 *3 ◇ in number of applicable driver represents the series. For more information about the part number,	Max. current		(A(o-p))	10.2		Ŭ	Thrust load A-direction (N)	147	
Trequency (times/min) Note)1 DV0P4283 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 6000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) With brake 0.26 Recommended moment of inertia ratio of the load and the rotor Note)5 20-bit Incremental 17-bit Absolute Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute 75 or more information about the part number,	0		· · ·			assembly	Thrust load B-direction (N)	196	
Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 6000 Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) Without brake 0.26 Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) With brake 0.28 Recommended moment of inertia ratio of the load and the rotor Note)3 20-bit Incremental 17-bit Absolute 17-bit Absolute 17-bit Absolute *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,	frequency (time	s/min) Note)	1 DV0P4283			D .		245	
Max. rotational speed (r/min) 6000 Moment of inertia of rotor (×10 ⁻⁴ kg·m ²) Without brake 0.26 Recommended moment of inertia ratio of the load and the rotor 30 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute Resolution per single turn 1048576 131072	Rated rotatio	nal spee	ed (r/min)	3000		Ű			
Minimum of rotation (x10 ⁻⁴ kg·m ²) With brake 0.28 • Dimensions of Driver, refer to P.42. Recommended moment of inertia ratio of the load and the rotor 30 times or less *1 Motor specifications: □ Rotary encoder specifications Note)5 20-bit Incremental Absolute 17-bit Absolute Resolution per single turn 1048576 131072 *3 ◇ in number of applicable driver represents the series. For more information about the part number,	Max. rotation	al speed	d (r/min)	60	000	operation	Thrust load A, B-direction (N)	98	
Recommended moment of inertia ratio of the load and the rotor 30 times or less *1 Motor specifications: □ Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute Resolution per single turn 1048576 131072	Moment of in	ertia	Without brake	0.	26				
Recommended moment of inertia ratio of the load and the rotor Note)3 30 times or less *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16. Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16. Resolution per single turn 1048576 131072 *3 ◇ in number of applicable driver represents the series. For more information about the part number,	of rotor (×10	⁴ kg·m²)	With brake	0.	28				
Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute Detail of model designation, refer to P.16. Resolution per single turn 1048576 131072 *3 in number of applicable driver represents the series. For more information about the part number,			30 times or less		*2 The product that the end of driver model				
	Rotary encod	ler spec	ifications Note)5		20-bit 17-bit Detail of model designation, refer to P.1		P.16.		
		Resolutio	on per single turn	1048576	1048576 131072 series. For more information about the part nur			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.>

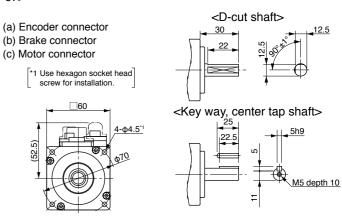




* For the dimensions without brake, refer to the left page. Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand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

A5 Family **Motor Specifications**





A5 Family

Motor Specifications

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

Specifications

				AC2	00 V	
Motor mode		IP65		-	-	
Motor mode *	∃I ⊧1	IP67		MSME082G1	MSME082S1	
Annlinghle	Model	A5II, A5	series	MCD<	T3520	
Applicable driver	^{₽2} No.	A5IIE, A	5E series	MCD \ T3520E	-	
unver	Fr	ame sym	Ibol	C-fr	ame	
Power supp	oly capacit	у	(kVA)	1	.3	
Rated outp	ut		(W)	75	50	
Rated torqu	le		(N·m)	2	.4	
Momentary	Max. peal	k torque	(N·m)	7.1		
Rated curre	ent	(A(rms))	4.1		
Max. currer	nt		(A(o-p))	17.4		
Regenerativ	e brake	Without option		No limit Note)2		
frequency (tin	nes/min) Note)1	DV0P4283		No limit Note)2		
Rated rotat	ional spee	d	(r/min)	30	00	
Max. rotatic	onal speed		(r/min)	6000		
Moment of	inertia	Without	t brake	0.87		
of rotor (×1	0 ⁻⁴ kg·m²)	With I	orake	0.	97	
	Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary enco	Rotary encoder specific			20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072	

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

	,
Static friction torque (N·m)	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

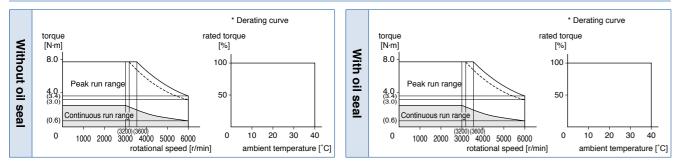
• Permissible load (For details, refer to P.183)

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

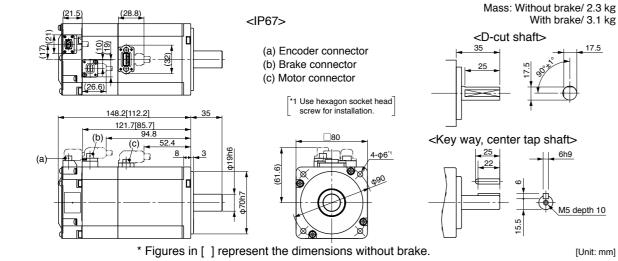
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · 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.>

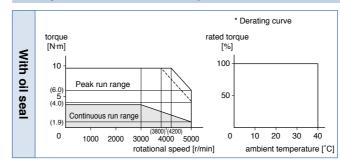


Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

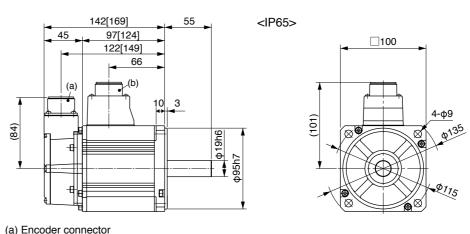
200 V MSME 1.0 kW [Low inertia, Middle capacity]

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		IP67	MSME102G1	E102G1 MSME102S1 S		ction torque (N·m)	7.8 or more
Annlinghis	М	odel	A5II, A5 series	MDD	T5540	Engagir	g time (ms)	50 or less
Applicable driver *	2 No	0.	A5IIE, A5E series	MDD O T5540E	-	Releasi	ng time (ms) Note)4	15 or less
		Fra	ame symbol	D-fr	ame	Exciting	current (DC) (A)	0.81±10 %
Power supp	oly cap	pacity	/ (kVA)	1	.8	Releasi	ng voltage (DC) (V)	2 or more
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4
Rated torqu			(N·m)					
Momentary		peak	1 ()	9.55		• Permissible load (For details, refer to P.183)		
Rated curre	ent		(A(rms))	6.6			Radial load P-direction (N)	980
Max. currer	nt		(A(o-p))		8	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	DV0P4284	No limit Note)2		D .	Radial load P-direction (N)	490
Rated rotat	onals	speed	d (r/min)	3000		During operation		
Max. rotatio	nal sp	peed	(r/min)	5000		operation	Thrust load A, B-direction (N)	196
Moment of	inertia	a –	Without brake	2.03		• For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×1	0 ⁻⁴ kg	·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 enco	Rotary encoder specifications Note)5		ications Note)5	20-bit Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 \bigcirc in number of applicable driver represents the		
	Reso	olutior	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



Dimensions



(b) Motor/Brake connector

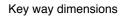
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

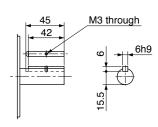
A5 Family **Motor Specifications**

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

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

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





* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC200 V		
Matar madal		IP65		MSME152GC	MSME152SC	
Motor model *1		IP67		MSME152G1	MSME152S1	
Amplicable	Model	A5II, A5 se	ries	MDD	T5540	
Applicable driver *2	No.	A5IIE, A5E	series	MDD O T5540E	-	
unver	Fi	ame symbo	bl	D-fr	ame	
Power supply	capacit	у	(kVA)	2	.3	
Rated output			(W)	15	00	
Rated torque			(N·m)	4.	77	
Momentary M	ax. pea	k torque	(N·m)	14.3		
Rated current		(A(rms))	8.2		
Max. current		(A	(o-p))	35		
Regenerative	orake	Without option		No limi	t Note)2	
frequency (times	min) Note)1	DV0P4284		No limit Note)2		
Rated rotation	nal spee	d (I	r/min)	3000		
Max. rotationa	al speed	()	r/min)	50	00	
Moment of ine	ertia	Without b	rake	2.84		
of rotor (×10 ⁻²	kg∙m²)	With bra	ıke	3.17		
	Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	Rotary encoder specif			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)	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	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.137.)

Mass: Without brake/ 4.4 kg

M3 through

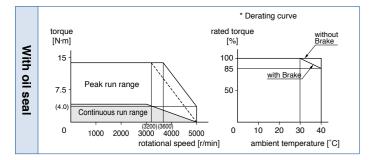
6h9

[Unit: mm]

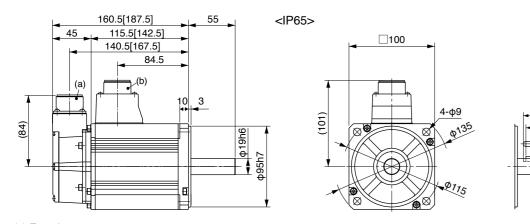
Key way dimensions

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

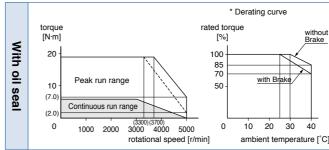
(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

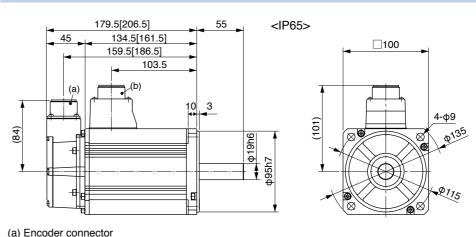
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

Specifications								
			AC2	00 V		• Brake specifications (For details, refer to P.183)		
Motor model		IP65	MSME202GC MSME202SC		(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)			
*1		IP67	MSME202G1	02G1 MSME202S1		iction torque (N·m)	7.8 or more	
Annelissahla	Model	A5II, A5 series	MED	T7364	Engagir	ng time (ms)	50 or less	
Applicable driver *2	No.	A5IIE, A5E series	MED \bigcirc T7364E	-	Releasi	ng time (ms) Note)4	15 or less	
	F	rame symbol	E-fr	ame	Exciting	current (DC) (A)	0.81±10 %	
Power supply	capacit	y (kVA)	3	.3	Releasi	ng voltage (DC) (V)	2 or more	
Rated output		(W)	2000		Exciting	voltage (DC) (V)	24±2.4	
Rated torque		(N·m)	6.37			J		
Momentary N	lax. pea	k torque (N·m)	19.1		 Permi 	Permissible load (For details, refer to P.183)		
Rated curren	t	(A(rms))	11.3			Radial load P-direction (N)	980	
Max. current		(A(o-p))	4	8	During	Thrust load A-direction (N)	588	
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (times	/min) Note)1	DV0P4285	No limit Note)2		During	Radial load P-direction (N)	490	
Rated rotatio	nal spee	d (r/min)	3000		During operation		196	
Max. rotation	al speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	190	
Moment of in	ertia	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 designation has "E" is "Position control type". 				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	'-bit Detail of model designation, refer to P.16.		P.16.		
F	Resolutio	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.			



Dimensions



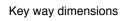
(b) Motor/Brake connector

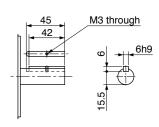
A5 Family **Motor Specifications**

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/ 5.3 kg With brake/ 6.3 kg





* Figures in [] represent the dimensions with brake.

[Unit: mm]

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<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 capacity (kVA)				4	.5		
Rated output			(W)	30	00		
Rated torque	Rated torque (N·m)				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)	30	3000		
Max. rotationa	al speed		(r/min)	50	00		
Moment of ine	ertia	Without	t brake	6.50			
of rotor (×10 ⁻⁴	kg∙m²)	With t	orake	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.

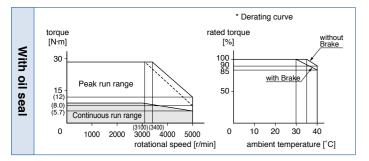
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

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

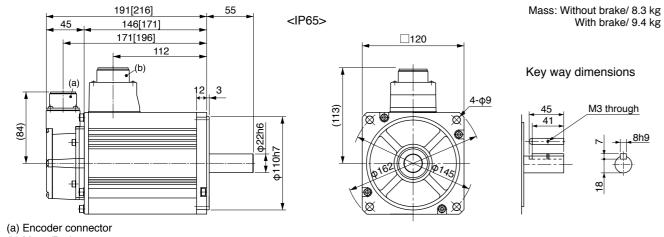
8h9

[Unit: mm]

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



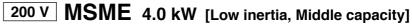
Dimensions



(b) Motor/Brake connector

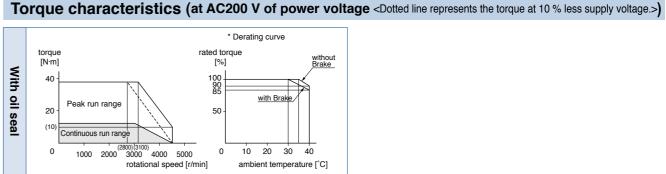
* Figures in [] represent the dimensions with brake.

<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.

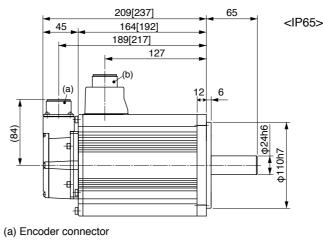


Specifications

Specific	ation	IS						
		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.)				
*1	Motor model *1 IP67		MSME402G1	MSME402S1	Static fri	ction torque (N·m)	16.2 or more	
A 11 1 1	Model	A5II, A5 series	MFD🛇	TB3A2	Engagin	g time (ms)	110 or less	
Applicable driver *2	No.	A5IIE, A5E series	MFD 	-	Releasir	ng time (ms) Note)4	50 or less	
dilvei	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	0.90±10 %	
Power supply	capaci	ty (kVA)	6	.0	Releasir	ng voltage (DC) (V)	2 or more	
Rated output	Rated output (W)			4000		voltage (DC) (V)	24±2.4	
Rated torque (N·m)								
Momentary N	Momentary Max. peak torque (N·m)			38.2		• Permissible load (For details, refer to P.183)		
Rated current		(A(rms))				Radial load P-direction (N)	980	
Max. current		(A(o-p))	8	3	During	Thrust load A-direction (N)	588	
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (times	/min) Note)	DV0P4285×2	No limit Note)2			Radial load P-direction (N)	784	
Rated rotation	nal spee	ed (r/min)	3000		During	()		
Max. rotationa	al speed	d (r/min)	4500		operation	Thrust load A, B-direction (N)	343	
Moment of ine	ertia	Without brake	12.9		For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10-	¹ kg∙m²)	With brake	14	1.2		ons of Driver, refer to P.45.		
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 encod	Rotary encoder specifications 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	on per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.			



Dimensions



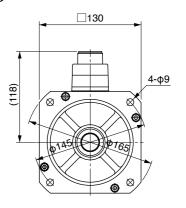
(b) Motor/Brake connector

<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.

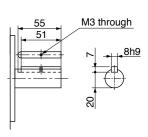
A5 Family **Motor Specifications**

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

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



Key way dimensions



* Figures in [] represent the dimensions with brake.

[Unit: mm]

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Motor Specifications

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

Specifications

			AC2	00 V		
Matar		IP65	MSME502GC	MSME502SC		
Motor model *1		IP67	MSME502G1	MSME502S1		
.	Model	A5II, A5 series	MFD🛇	TB3A2		
Applicable driver *2	No.	A5IIE, A5E series	MFD OTB3A2E	-		
unver	Fi	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 M	ax. pea	k torque (N·m)	47.7			
Rated current		(A(rms))	24.0			
Max. current		(A(o-p))	1(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. rotationa	al speed	(r/min)	45	00		
Moment of ine	ertia	Without brake	17.4			
of rotor (×10-	[↓] kg·m²)	With brake	18.6			
	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 single turn	1048576	131072		

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

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

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

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
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:

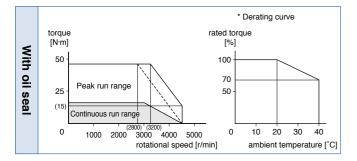
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

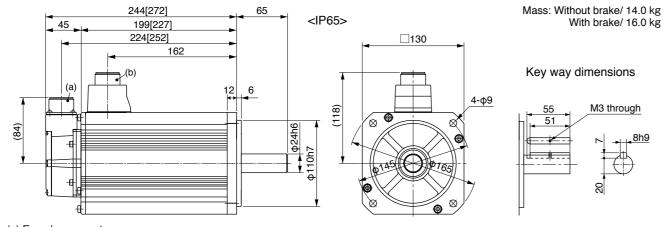
8h9

[Unit: mm]

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



Dimensions

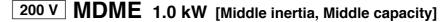


⁽a) Encoder connector

(b) Motor/Brake connector

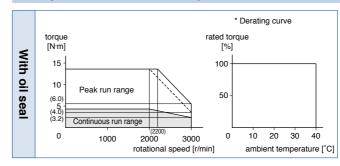
* Figures in [] represent the dimensions with brake.

<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.

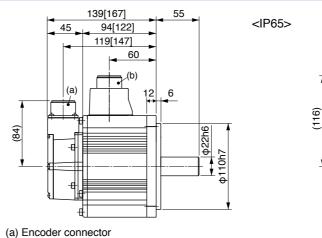


Specifications

Specini	Jane	113						
				AC2	00 V		e specifications (For detai brake will be released when it is	
Motor mode	IP65 MDME102GC MDME102SC *1 IP67 MDME102G1 MDME102S1		MDME102GC MDME102SC		(Do not use this for braking the motor in motion.)			
			Static f	friction torque (N·m)	4.9 or more			
A	Мо	del	A5II, A5 series	MDD	>T3530	Engagi	ing time (ms)	80 or less
Applicable driver *	2 No.		A5IIE, A5E series	MDD OT3530E	-	Releas	sing time (ms) Note)4	70 or less
		Fra	me symbol	D-fr	ame	Excitin	g current (DC) (A)	0.59±10 %
Power supp	<i>·</i> ·	city	(kVA)		.8	Releas	sing voltage (DC) (V)	2 or more
Rated outpu			(W)			Excitin	g voltage (DC) (V)	24±2.4
Rated torque (N·m)			· · · · · ·		4.77			
Momentary Max. peak torque (N·m)		14.3		• Perm	nissible load (For details, re	fer to P.183)		
Rated curre	current (A(rms))		5.7			Radial load P-direction (N)	980	
Max. curren	t		(A(o-p))	2	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) No	ite)1	DV0P4284	No limit Note)2			Radial load P-direction (N)	490
Rated rotati	onal sp	eed	(r/min)	2000		During		
Max. rotatio	nal spe	ed	(r/min)	3000		operatior	Thrust load A, B-direction (N)	196
Moment of i	nertia		Without brake	4.60		 For de 	tails of Note 1 to Note 5, refer	to P.182, P.18
of rotor (×10)⁻⁴ kg·n	1²)	With brake	5.90			sions of Driver, refer to P.43.	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		*2 The p	or specifications: product that the end of driver r gnation has "E" is "Position con	nodel		
Rotary encoder specifications Note)5		20-bit 17-bit Detail of model designation, reference Incremental Absolute *3 ◇ in number of applicable driver			il of model designation, refer t	o P.16.		
	Resolu	ition	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.

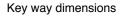
A5 Family

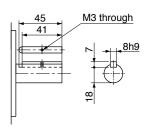
Motor Specifications

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





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* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC2	00 V		
Matarimodal		IP65		MDME152GC	MDME152SC		
	Motor model *1			MDME152G1	MDME152S1		
Amplicable	Model	A5 I , A5 s	eries	MDD¢	T5540		
Applicable driver *2	No.	A5IIE, A5	E series	MDD O T5540E	-		
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	(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)	3000			
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				s or less		
Rotary encode	Rotary encoder specifications			20-bit Incremental	17-bit Absolute		
F	lesolutio	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)	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>

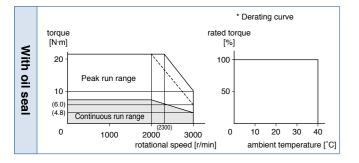
With brake/ 8.2 kg

M3 through

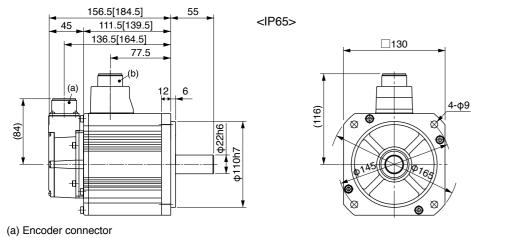
.8h9

[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

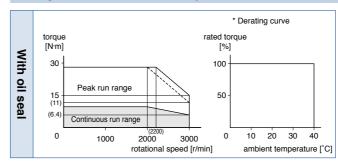
* Figures in [] represent the dimensions with brake.

<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.

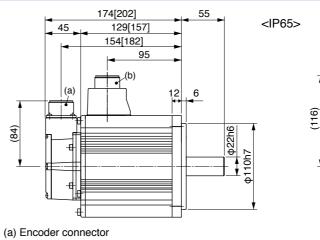
200 V MDME 2.0 kW [Middle inertia, Middle capacity]

Specifications

Specin	cau		•							
				AC2	00 V			specifications (For details		
IP65		MDME202GC MDME202SC		(This brake will be released when it is energized.) Do not use this for braking the motor in motion.						
Motor mode	∂I ⊧1		IP67	MDME202G1	MDME202S1	Stat	Static friction torque (N·m)		13.7 or more	
Annelissiste	M	odel	A5II, A5 series	MED	T7364	Eng	agin	g time (ms)	100 or less	
Applicable driver	⊧2 No	0.	A5IIE, A5E series	MED \bigcirc T7364E	-	Rele	easir	g time (ms) Note)4	50 or less	
		Fra	ame symbol	E-fr	ame	Exci	iting	current (DC) (A)	0.79±10 %	
Power supp	<i>,</i> ,	pacity	· · · · · · · · · · · · · · · · · · ·		.3	Rele	easir	ig voltage (DC) (V)	2 or more	
Rated outp			(W)			Exci	iting	voltage (DC) (V)	24±2.4	
Rated torque (N·m)			()	9.55						
Momentary Max. peak torque (N·m)		28.6		• Pe	rmi	ssible load (For details, refe	er to P.183)			
Rated curre	ent	nt (A(rms))		11.5				Radial load P-direction (N)	980	
Max. currer	nt		(A(o-p))	4	.9	Durinę		Thrust load A-direction (N)	588	
Regenerativ		- F	Without option	No limit Note)2		assen	noiy	Thrust load B-direction (N)	686	
frequency (tin	nes/min)	Note)1	DV0P4285	No limit Note)2						
Rated rotat	ional s	speed	l (r/min)	2000		During	~	Radial load P-direction (N)	490	
Max. rotatio	onal sp	peed	(r/min)	3000		opera	tion	Thrust load A, B-direction (N)	196	
Moment of	inertia	a	Without brake	8.72		For details of Note 1 to Note 5, refer to P.182, P.1			o P.182, P.18	
of rotor (×1	0 ⁻⁴ kg	∵m²)	With brake	10.0				ons 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 enco	oder s	specif	cations Note)5	20-bit Incremental	20-bit 17-bit Detail of model designation, refer to P.16.			P.16.		
Γ	Reso	olutior	n per single turn	1048576	131072	se	ries.	For more information about to 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.

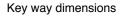
A5 Family

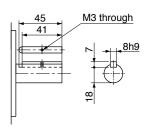
Motor Specifications

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/ 8.0 kg With brake/ 9.5 kg





130 1-Φ

* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

				AC2	00 V		
Matarimodal		IP65		MDME302GC	MDME302SC		
Motor model *1		IP67		MDME302G1	MDME302S1		
A 11 1.1	Model	A5II, A5 s	series	MFD🛇	TA390		
Applicable driver *2	No.	A5IIE, A5	E series	MFD OTA390E	-		
unver	Fr	ame symb	ool	F-fra	ame		
Power supply	Power supply capacity (kVA			4	.5		
Rated output			(W)	30	00		
Rated torque			(N·m)	14.3			
Momentary M	ax. peal	k torque	(N·m)	43.0			
Rated current		(/	A(rms))	17.4			
Max. current		(A(o-p))	74			
Regenerative	orake	Without option		No limit Note)2			
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	12.9			
of rotor (×10 ⁻²	kg∙m²)	With b	rake	14	.2		
	Recommended moment of ine ratio of the load and the rotor		tia 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.

	,
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.139.)

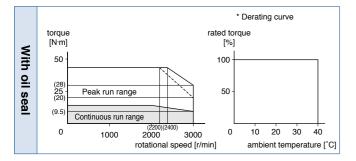
With brake/ 12.6 kg

M3 through

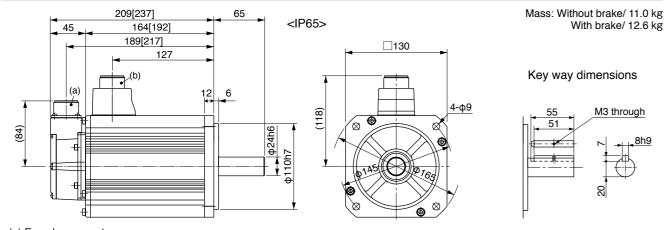
8h9

[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.

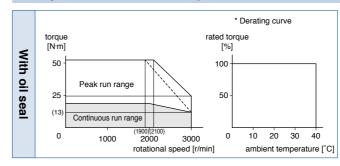
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



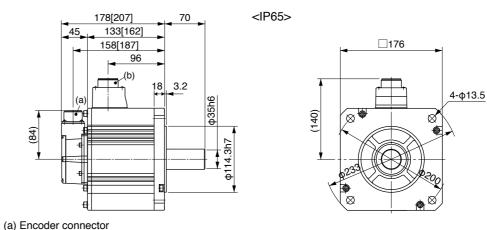
Specifications

Specifi	Lation	3						
			AC2	00 V		specifications (For details ake will be released when it is e		
Motor model		MDME402GC	MDME402SC		use this for braking the motor in			
*		IP67	MDME402G1	MDME402S1	Static fri	Static friction torque (N·m)		
Annlinghla	Model	A5II, A5 series	MFD🛇	TB3A2	Engagin	g time (ms)	80 or less	
Applicable driver *	2 No.	A5IIE, A5E series	MFD OTB3A2E	-	Releasir	ng time (ms) Note)4	25 or less	
anvoi	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 outpu	it	(W)	4000		Exciting	voltage (DC) (V)	24±2.4	
Rated torque (N·m)			19.1			0 ()()		
Momentary	· ·	,	57.3		• Permissible load (For details, refer 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	
Regenerativ		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)	784	
Rated rotati	onal spee	d (r/min)	2000		During			
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.183			
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.			
Γ	Resolutio	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

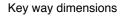
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

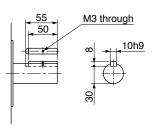
A5 Family

Motor Specifications

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

Mass: Without brake/ 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	
Motor model *1		IP67		MDME502G1	MDME502S1	
Annlinghle	Model	A5II, A5 serie	s	MFD🛇	TB3A2	
Applicable driver *2	No.	A5IIE, A5E s	eries	MFD \bigcirc TB3A2E	-	
unver	Fr	ame symbol		F-fra	ame	
Power supply	Power supply capacity (kVA)			7	.5	
Rated output			(W)	50	00	
Rated torque (N				23.9		
Momentary M	ax. peal	k torque (N	l∙m)	71.6		
Rated current		(A(rr	ns))	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	l (r/min)		2000		
Max. rotationa	l speed	(r/r	nin)	3000		
Moment of ine	ertia	Without bra	ke	48.0		
of rotor (×10 ⁻⁴	kg∙m²)	With brak	е	53.3		
	Recommended moment of ratio of the load and the rote		ote)3	10 times	s or less	
Rotary encode	er speci	fications N	ote)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single tu	ırn	1048576	131072	

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

(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
accombry	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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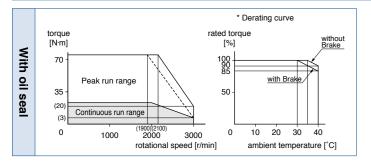
With brake/ 21.8 kg

M3 through

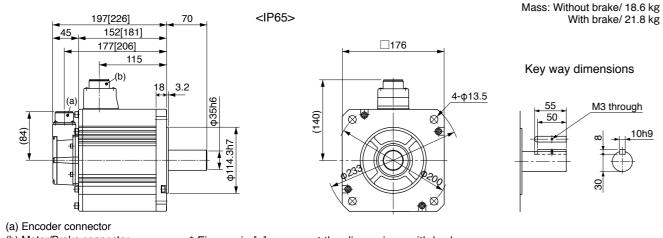
10h9

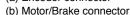
[Unit: mm]

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



Dimensions





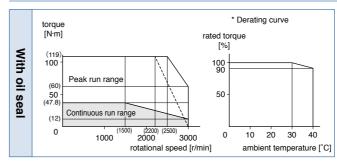
* Figures in [] represent the dimensions with brake.

<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.

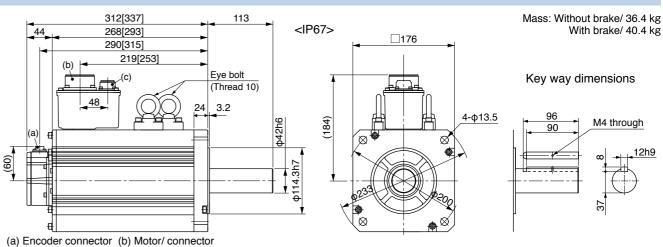
200 V MDME 7.5 kW [Middle inertia, Middle capacity]

Creations

Specif	ICa	tion	S					
				AC2	00 V		specifications (For details ake will be released when it is e	-
Motor model		-	-		use this for braking the motor in			
			MDME752G1	MDME752S1 Static friction torque (N·m)		ction torque (N·m)	58.8 or more	
Annelisatela		Model	A5II, 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
anvoi		Fi	rame symbol	G-fr	ame	Exciting	current (DC) (A)	1.4±10 %
Power sup		capacit	,		1	Releasir	ng voltage (DC) (V)	2 or more
	Rated output (W)		,			Exciting	voltage (DC) (V)	24±2.4
Rated torque (N·m)				47.8		- Der:		
Momentary Max. peak torque (N·m)		119		• Permi	ssible load (For details, refe	er to P.183)		
Rated curre			(A(rms))		44.0		Radial load P-direction (N)	2058
Max. curre	nt		(A(o-p))	1	65	During assembly	Thrust load A-direction (N)	980
Regenerativ			Without option	No limit Note)2		assembly	Thrust load B-direction (N)	1176
frequency (ti	nes/m	nin) Note)1	DV0P4285×3	No limit Note)2			Radial load P-direction (N)	1176
Rated rotat	iona	al spee	d (r/min)	1500		During		
Max. rotation	onal	speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	490
Moment of	iner	tia	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	107			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 encoder specifications Note)5		fications Note)5	20-bit 17-bit Detail of model designation, refer to P.16. Incremental Absolute *3 ◇ in number of applicable driver represent			P.16.		
	Re	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		-	-		
*1		IP67		MDMEC12G1	MDMEC12S1		
Amplicable	Model	A5II, A5	series	MHD🛇	TC3B4		
Applicable driver *2	No.	A5IIE, A	5E series	-	-		
unver	Fi	rame sym	bol	H-fr	ame		
Power supply capacity (kVA)				1	7		
Rated output (W)				11(000		
Rated torque (N·m)				70).0		
Momentary Max. peak torque (N·m)				175			
Rated current	Rated current (A(rms))				54.2		
Max. current			(A(o-p))	203			
Regenerative	Regenerative brake		option	No limit Note)2			
frequency (times	min) Note)1	DV0PM20058		No limit Note)2			
Rated rotation	nal spee	d	(r/min)	1500			
Max. rotationa	al speed		(r/min)	20	00		
Moment of ine	ertia	Without	brake	2.	12		
of rotor (×10 ⁻²	of rotor (×10 ⁻⁴ kg·m ²)			22	20		
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	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)	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.

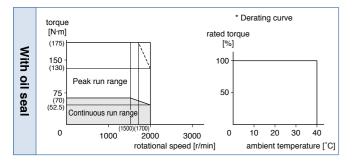
· Dimensions of Driver, refer to P.47.

*1 Motor specifications:

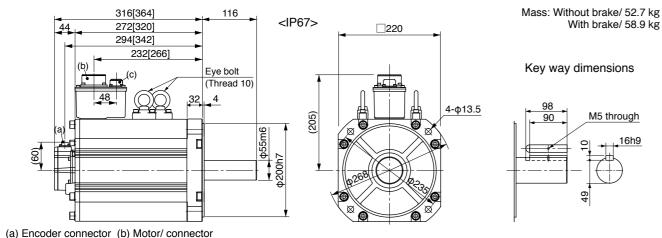
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

[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)

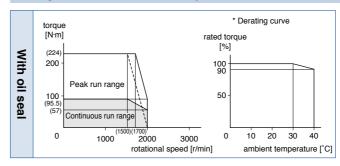
* Figures in [] represent the dimensions with brake.

<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.

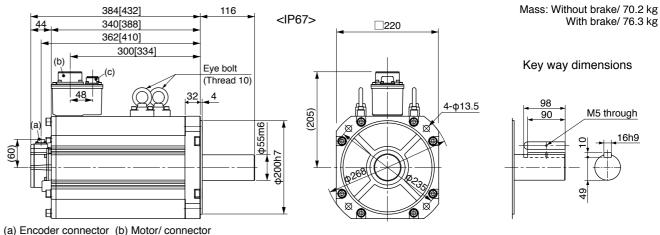


Creations

Specifi	catio	n	5						
				AC2	00 V			specifications (For details	-
Motor model						ake will be released when it is e use this for braking the motor ir			
	≠I ⊧1		IP67	MDMEC52G1	MDMEC52S1	Statio	Static friction torque (N·m)		100 or mor
Annlinghia	Mod	lel	A5II, A5 series	MHD¢	TC3B4	Enga	gin	g time (ms)	300 or less
Applicable driver	⊧2 No.		A5IIE, A5E series	-	-	Relea	asin	g time (ms) Note)4	140 or less
uniton		Fra	ame symbol	H-fr	ame	Excit	ing	current (DC) (A)	1.08±10 %
Power supply capacity (kVA)			(kVA)	2	2	Relea	asin	g voltage (DC) (V)	2 or more
Rated outp			(W)	15000		Excit	ing	voltage (DC) (V)	24±2.4
Rated torque (N·m)			()	95.5				1	
Momentary Max. peak torque (N·m)		224		Permissible load (For details, refer to P.183)			er to P.183)		
Rated curre	ent		(A(rms))	66.1				Radial load P-direction (N)	4508
Max. currer	nt		(A(o-p))	23	36	During		Thrust load A-direction (N)	1470
Regenerativ		- H	Without option	No limit Note)2		assem	bly	Thrust load B-direction (N)	1764
frequency (tin	nes/min) No	te)1	DV0PM20058	No limit Note)2			_	()	2254
Rated rotat	ional sp	eec	d (r/min)	1500		During		Radial load P-direction (N)	
Max. rotatio	onal spe	ed	(r/min)	2000		operati	ion	Thrust load A, B-direction (N)	686
Moment of	inertia		Without brake	302				ils of Note 1 to Note 5, refer to	o P.182, P.18
of rotor (×1	0⁻⁴ kg•m	1 ²)	With brake	311		-	-	ons 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	oder spe	ecifi	cations 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 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 MFME 1.5 kW

[Middle inertia, Middle capacity] Flat type

Specifications

$ \begin{array}{c c c c c } \mbox{Motor model} & IP65 & - & - \\ \hline \mbox{Motor model} & IP67 & \mbox{MFME152G1} & \mbox{MFME152S1} \\ \hline \mbox{MFME152G1} & \mbox{MFME152S1} \\ \mbox{MFME152G1} & \mbox{MFME152S1} \\ \hline \mbox{MFME152G1} & \mbox{MFME152G1} & \mbox{MFME152S1} \\ \hline \mbox{MFME152G1} & \mbox{MFME152G1} & \mbox{MFME152G1} & \mbox{MFME152S1} \\ \hline \mbox{Molec} & \mbox{MFME152G1} & \mbox{MDD} & \mbox{T5540} & \mbox{-} \\ \hline \mbox{Frame symbol} & \mbox{MDD} & \mbox{T5540} & \mbox{-} \\ \hline \mbox{Power supply capacity} & \mbox{(kVA)} & \mbox{2.3} \\ \hline \mbox{Rated output} & \mbox{(kVM)} & \mbox{15} \\ \hline \mbox{Rated torque} & \mbox{(N·m)} & \mbox{15} \\ \hline \mbox{Rated torque} & \mbox{(N·m)} & \mbox{15} \\ \hline \mbox{Rated current} & \mbox{(A(co-p))} & \mbox{32} \\ \hline \mbox{Regenerative brake} & \mbox{(frmin) Note)1} & \mbox{DVOP4284} & \mbox{Notimit Note)2} \\ \hline \mbox{Rated rotational speed} & \mbox{(r/min)} & \mbox{30} \\ \hline \mbox{Moment of inertia} & \mbox{01 thorake} & \mbox{18.2} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommendation} & \mbox{Recommendation} \\ \hline \mbox{Recommended moment of inertia} & \mbox{10 times} \\ \hline \mbox{Recommendation} & \mbox{Recommendation} \\ \hline \mbox{Recommendation} & \mbox{Recommendation} \\ \hline \mbox{Recommendation} & \mbox{Recommendation} \\ \hline Recom$				AC2	00 V		
*1 IP67 MFME152G1 MFME152S1 Applicable driver *1 A5I, A5 series MDD <t5540< td=""> – Applicable driver *2 A5IE, A5E series MDD<t5540e< td=""> – Power supply capacity (kVA) 2.3 – – Power supply capacity (kVA) 2.3 – – Rated output (W) 1500 – – Rated torque (N·m) 7.16 – – Momentary Max. peak torque (N·m) 7.5 – – Rated current (A(rms)) 7.5 – – Regenerative brake frequency (times/min) Note) Without option 100 – Rated rotational speed (r/min) 2000 – Max. rotational speed (r/min) 3000 – Moment of inertia of rotor (×10⁻⁴ kg·m²) With brake 23.5 – Recommended moment of inertia ratio of the load and theory Note)3 10 times or less 17-bit Absolute</t5540e<></t5540<>	Motor model		IP65		-	-	
Applicable driver Model No. A5IE, A5E series MDD ♦ T5540E — Frame symbol D-frame Power supply capacity (kVA) 2.3 Rated output (W) 1500 Rated torque (N·m) 7.16 Momentary Max. peak torque (N·m) 21.5 Rated current (A(o-p)) 32 Regenerative brake frequency (times/min) Note)1 Without option 100 DVOP4284 No limit Note)2 Rated rotational speed (r/min) Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) With brake 18.2 Recommended moment of inertia ratio of the load and the rotor Note)3 20-bit lncremental 17-bit Absolute			IP67		MFME152G1	MFME152S1	
Invertie*2No.ASILE, ASE seriesMDD <t5540e< th="">–Frame symbolD-framePower supply capacity(kVA)2.3Rated output(W)1500Rated torque(N·m)7.16Momentary Max. peak torque(N·m)21.5Rated current(A(rms))7.5Max. current(A(o-p))32Regenerative brake frequency (times/min) Note)1Without option100DVOP4284No limit Note)2Rated rotational speed(r/min)3000Max. rotational speed(r/min)3000Moment of inertia of rotor (x10⁻⁴ kg·m²)Without brake18.2Recommended moment of inertia ratio of the load and the rotor Note)310 times or lessRotary encoder specifications Note)520-bit Incremental17-bit Absolute</t5540e<>	Annlinghia	Model	A5II, A5	series	MDD	>T5540	
Frame symbolD-framePower supply capacity(kVA)2.3Rated output(W)1500Rated output(W)1500Rated torque(N·m)7.16Momentary Max. peak torque(N·m)21.5Rated current(A(rms))7.5Max. current(A(c-p))32Regenerative brake frequency (times/min) Note)1Without option100DVOP4284No limit Note)2Rated rotational speed(r/min)3000Max. rotational speed(r/min)3000Moment of inertia of rotor (x10 ⁻⁴ kg·m²)With brake18.2Recommended moment of inertia ratio of the load and the rotor Note)310 times or lessRotary encoder specifications Note)520-bit Incremental17-bit 			A5IIE, A	5E series	MDD O T5540E	_	
Rated output(W)1500Rated output(W)1500Rated torque(N·m)7.16Momentary Max. peak torque(N·m)21.5Rated current(A(rms))7.5Max. current(A(o-p))32Regenerative brake frequency (times/min) Note)1Without option100DVOP4284No limit Note)2Rated rotational speed(r/min)2000Max. rotational speed(r/min)3000Moment of inertia of rotor (x10 ⁻⁴ kg·m ²)Without brake18.2Recommended moment of inertia ratio of the load and the rotor Note)310 times or lessRotary encoder specifications AbsoluteNote)520-bit Incremental17-bit Absolute	unver	Fi	rame sym	nbol	D-fr	ame	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Power suppl	y capacit	у	(kVA)	2	.3	
Momentary Max. peak torque(N·m)21.5Rated current(A(rms))7.5Max. current(A(o-p)) 32 Regenerative brake frequency (times/min) Note)Without option 100 DV0P4284No limit Note)2Rated rotational speed(r/min) 2000 Max. rotational speed(r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m²)Without brake 18.2 Recommended moment of inertia ratio of the load and the rotor Note)310 times or lessRotary encoder specifications AbsoluteNote)5 20 -bit Incremental 17 -bit Absolute	Rated output	t		(W)	15	00	
Rated current (A(rms)) 7.5 Max. current (A(o-p)) 32 Regenerative brake frequency (times/min) Note) Without option 100 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m²) Without brake 18.2 Recommended moment of inertia ratio of the load and the rotor Note)3 10 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute	Rated torque)		(N·m)	7.	16	
Max. current (A(o-p)) 32 Regenerative brake frequency (times/min) Note)1 Without option 100 DV0P4284 No limit Note)2 Rated rotational speed (r/min) Max. rotational speed (r/min) Moment of inertia of rotor (×10 ⁻⁴ kg·m ²) Without brake Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 Rotary encoder specifications Note)5	Momentary N	Max. pea	k torque	(N·m)	21.5		
Regenerative brake frequency (times/min) Note)1 Without option 100 Rated rotational speed (r/min) DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m ²) Without brake 18.2 Recommended moment of inertia ratio of the load and the rotor Note)3 10 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute	Rated currer	nt		(A(rms))	7.5		
Integenerative brace Introduct product frequency (times/min) Note)1 DV0P4284 No limit Note)2 Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (x10 ⁻⁴ kg·m ²) Without brake 18.2 Recommended moment of inertia ratio of the load and the rotor Note)3 10 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute	Max. current			(A(o-p))	32		
Rated rotational speed (r/min) 2000 Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m ²) Without brake 18.2 Recommended moment of inertia ratio of the load and the rotor Note)3 10 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute	Regenerative	brake	Without option		100		
Max. rotational speed (r/min) 3000 Moment of inertia of rotor (×10 ⁻⁴ kg·m ²) Without brake 18.2 With brake 23.5 Recommended moment of inertia ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute	frequency (time	s/min) Note)1	DV0P4284		No limit Note)2		
Moment of inertia of rotor (×10 ⁻⁴ kg·m ²) Without brake 18.2 With brake 23.5 Recommended moment of inertia ratio of the load and the rotor 10 times or less Rotary encoder specifications Note)5 20-bit Incremental	Rated rotatio	nal spee	d	(r/min)	2000		
Interference Interference of rotor (×10 ⁻⁴ kg·m ²) With brake Recommended moment of inertia 10 times or less ratio of the load and the rotor Note)3 Rotary encoder specifications Note)5 20-bit 17-bit Incremental Absolute	Max. rotatior	nal speed		(r/min)	3000		
Recommended moment of inertia ratio of the load and the rotor Note)3 10 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute	Moment of ir	nertia	Withou	t brake	18.2		
ratio of the load and the rotor Note)3 10 times or less Rotary encoder specifications Note)5 20-bit Incremental 17-bit Absolute	of rotor (×10	⁻⁴ kg·m²)	With	brake	23.5		
Rotary encoder specifications Note)5 Incremental Absolute				10 times	s or less		
Resolution per single turn 1048576 131072	Rotary enco	der speci	fications				
		Resolutio	n per sing	gle turn	1048576	131072	

 Brak /This Do not use this for braking the motor in motion.

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

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

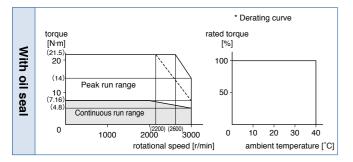
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

· Dimensions of Driver, refer to P.43.

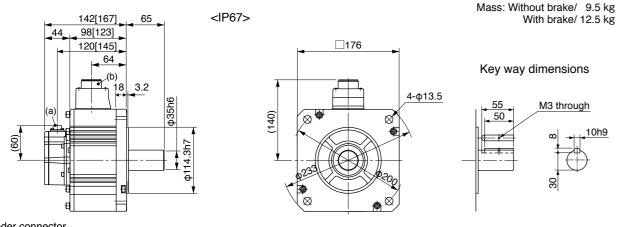
*1 Motor specifications:

- *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.

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

1	
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

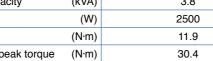
uring sembly uring peration	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

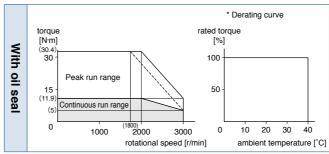
- designation has "E" is "Position control type".
- *3 \bigcirc in number of applicable driver represents the

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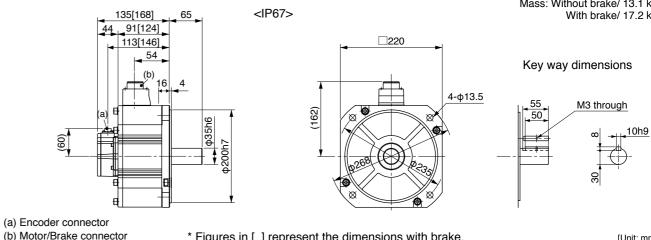
[Unit: mm]



Specif	ication	S						
			AC2	00 V		• Brake specifications (For details, refer to P.183)		
IP65					rake will be released when it is e use this for braking the motor in			
Motor mod	#1	IP67	MFME252G1	MFME252S1	Static fr	iction torque (N·m)	21.6 or more	
	Model	A5II, A5 series	MED	T7364	Engagir	ng time (ms)	150 or less	
Applicable driver	*2 No.	A5IIE, A5E series	MED \bigcirc T7364E	_	Releasi	ng time (ms) Note)4	100 or less	
unver	F	rame symbol	E-fr	ame	Exciting	current (DC) (A)	0.75±10 %	
Power sup	ply capacit	ty (kVA)	3	.8	Releasi	ng voltage (DC) (V)	2 or more	
Rated outp	ut	(W)	25	00		voltage (DC) (V)	24+2.4	
Rated torq	ue	(N·m)	11.9			······go (2 0) (1)		
Momentary	/ Max. pea	k torque (N·m)	30.4		• Perm	issible load (For details, refe	er to P.183)	
Rated curre	ent	(A(rms))	13.4			Radial load P-direction (N)	1862	
Max. curre	nt	(A(o-p))	57		During	Thrust load A-direction (N)	686	
Regenerativ		Without option	75		assembly	Thrust load B-direction (N)	686	
frequency (ti	mes/min) Note)	DV0P4285	No lim	it Note)2	During	Radial load P-direction (N)	784	
Rated rotat	tional spee	ed (r/min)	2000		During operation		294	
Max. rotati	onal speed	d (r/min)	3000			Thrust load A, B-direction (N)		
Moment of	inertia	Without brake	35.8		• For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×1	0 ⁻⁴ kg·m ²)	With brake	45.2			ions of Driver, refer to P.44.		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 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 number of applicable driver rej	P.16.		
	Resolutio	on per single turn	1048576	131072	series	series. For more information about the part number, please refer to P.16.		



Dimensions



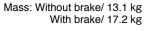
* Figures in [] represent the dimensions with brake.

<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 MFME 2.5 kW [Middle inertia, Middle capacity]

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 mod		IP65			-	_	
	*1		IP67		MFME452G1	MFME452S1	
Annlinghla		Model	A5II, A5	series	MFD🛇	TB3A2	
Applicable driver	*2	No.	A5IIE, A	5E series	MFD OTB3A2E	_	
unver		Fr	ame sym	nbol	F-fra	ame	
Power sup	ply o	capacit	y	(kVA)	6	.8	
Rated outp	out			(W)	45	00	
Rated torq	ue			(N·m)	21	.5	
Momentary	y Ma	ax. peal	< torque	(N·m)	54.9		
Rated curr	ent		((A(rms))	24.7		
Max. curre	nt			(A(o-p))	105		
Regenerati	ve b	rake	Without option		67		
frequency (ti	mes/m	nin) Note)1	DV0P4285×2		375		
Rated rota	tiona	al spee	d	(r/min)	2000		
Max. rotati	onal	speed		(r/min)	3000		
Moment of	ine	rtia	Withou	t brake	63.1		
of rotor (×1	0-4	kg∙m²)	With I	brake	70.9		
Recommended moment of inertia ratio of the load and the rotor Note)3					10 times	s or less	
Rotary end	Rotary encoder specifications Note)5				20-bit Incremental	17-bit Absolute	
	Re	esolutio	n per sing	gle turn	1048576	131072	

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

	,
Static friction torque (N·m)	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)

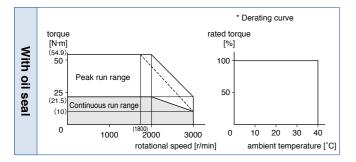
During assembly During operation	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

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

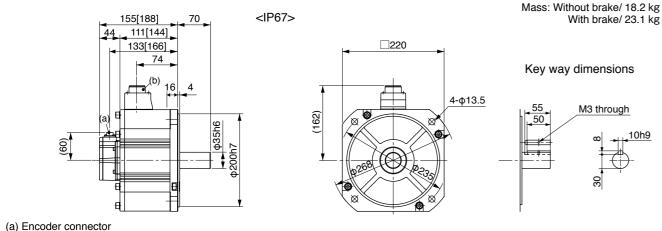
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamond in number of applicable driver represents the series. For more information about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

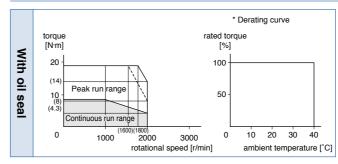


- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

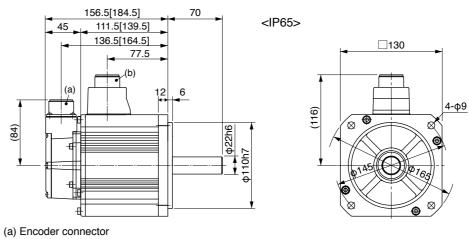
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

Specif	ICa		5						
				AC2	00 V		specifications (For details rake will be released when it is		
Motor mod			IP65	MGME092GC		(Do not use this for braking the motor in motion.)			
	*1		IP67	MGME092G1	MGME092S1	Static fri	ction torque (N·m)	13.7 or more	
Annlinghia		Model	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	
differ		Fr	ame symbol	D-fr	ame	Exciting	current (DC) (A)	0.79±10 %	
Power sup		capacity	, ,		.8	Releasir	ng voltage (DC) (V)	2 or more	
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4	
Rated torq			(N·m)	8.59					
Momentar	, 	ax. peal	1 ()	19.3		• Permi	ssible load (For details, refe	er to P.183)	
Rated curr	ent		(A(rms))		.6		Radial load P-direction (N)	980	
Max. curre	nt		(A(o-p))	2	24	During	Thrust load A-direction (N)	588	
Regenerati			Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (t	imes/m	nin) Note)1	DV0P4284	No limit Note)2			Radial load P-direction (N)	686	
Rated rota	tiona	al spee	d (r/min)	1000		During			
Max. rotati	onal	speed	(r/min)	2000		operation	Thrust load A, B-direction (N)	196	
Moment of	iner	rtia	Without brake	6.70			ails of Note 1 to Note 5, refer t	o P.182, P.183	
of rotor (×1	0-4	kg∙m²)	With brake	7.99			ions of Driver, refer to P.43.		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		*2 The p	specifications: roduct that the end of driver mation 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 num 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.

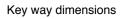
A5 Family

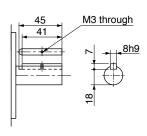
Motor Specifications

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





* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

			AC2	00 V	
Motor model		IP65	MGME202GC	MGME202SC	
		IP67	MGME202G1	MGME202S1	
Anniesekie	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 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	5.6	
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.

(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 During operation	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

50

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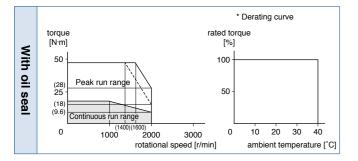
With brake/ 17.5 kg

M3 through

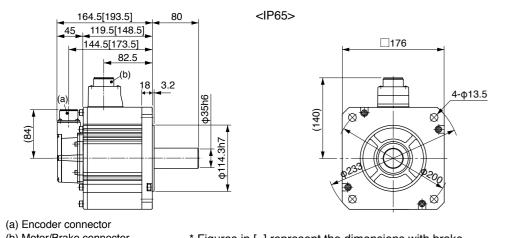
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[Unit: mm]

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



Dimensions



(b) Motor/Brake connector

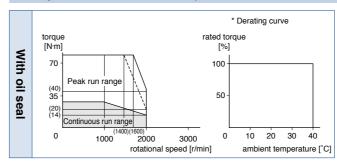
* Figures in [] represent the dimensions with brake.

<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.

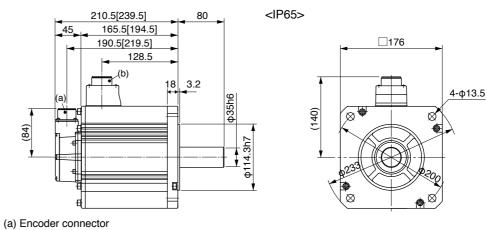
200 V MGME 3.0 kW [Middle inertia, Middle capacity]

Specifications

Specifi	cation	5					
	AC200 V •			• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)			
Motor mode	J	IP65	MGME302GC				
	:1	IP67	MGME302G1	MGME302S1	Static fri	ction torque (N·m)	58.8 or more
Annelissiste	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)				•••	
Momentary			71.7		• Permi	ssible load (For details, refe	er to P.183)
Rated current (A(rms))		22.6			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			Radial load P-direction (N)	1470
Rated rotat	onal spee	d (r/min)	1000		During		
Max. rotatio	nal speed	l (r/min)	2000		operation	Thrust load A, B-direction (N)	490
Moment of	nertia	Without brake	48.4			ils of Note 1 to Note 5, refer t	o P.182, P.183
of rotor (×1	0 ⁻⁴ kg·m²)	With brake	53	3.7		ons of Driver, refer to P.45.	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 time	s 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		
	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.

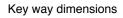
A5 Family

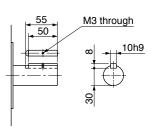
Motor Specifications

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		-	-	
		IP67		MGME452G1	MGME452S1	
Annischie	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 M	ax. pea	k torque	(N·m)	107		
Rated current		(.	A(rms))	29.7		
Max. current		((A(o-p))	110		
Regenerative I	orake	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. rotationa	al speed		(r/min)	2000		
Moment of ine	ertia	Without	brake	79).1	
of rotor (×10 ⁻⁴	kg∙m²)	With b	orake	84	l.4	
	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 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 During operation	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

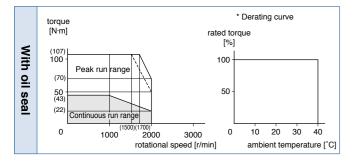
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

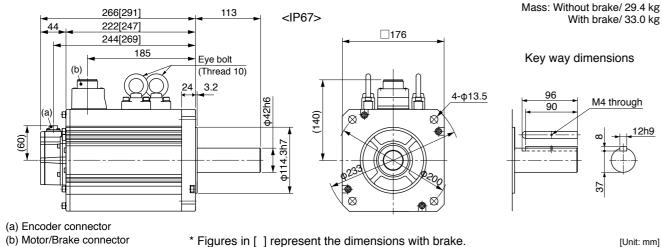
*1 Motor specifications:

- *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

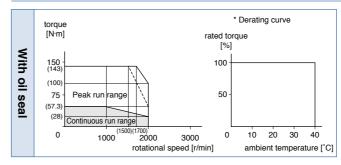
* Figures in [] represent the dimensions with brake.

<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.

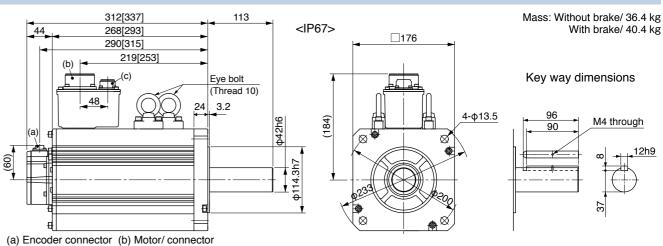
200 V MGME 6.0 kW [Middle inertia, Middle capacity]

Creations

Specifi	cat	ion	S						
				AC2	AC200 V • Brake specifications (For details, refer to				
Motor mode			IP65	-	-	(This brake will be released when it is energized. Do not use this for braking the motor in motion.)			
	;1		IP67	MGME602G1	MGME602S1	St	atic fri	ction torque (N·m)	58.8 or more
	Ν	/lodel	A5II, A5 series	MGD¢	TC3B4	Er	ngagin	g time (ms)	150 or less
Applicable driver *	2 N	lo.	A5IIE, A5E series	—	-	Re	eleasir	ng time (ms) Note)4	50 or less
		Fr	ame symbol	G-fr	ame	Ex	citing	current (DC) (A)	1.4±10 %
Power supp	ly ca	apacity	/ (kVA)	9	.0	Re	eleasir	ng voltage (DC) (V)	2 or more
Rated outpu	Jt		(W)	6000		Ex	Exciting voltage (DC) (V)		24±2.4
Rated torqu			(N·m)		57.3				
Momentary	Max	. peał	ctorque (N·m)	143		• P	ermi	ssible load (For details, refe	er to P.183)
Rated curre	nt		(A(rms))	38.8				Radial load P-direction (N)	2058
Max. curren	t		(A(o-p))		49	Dur	ing embly	Thrust load A-direction (N)	980
Regenerativ			Without option	No limit Note)2			enibiy	Thrust load B-direction (N)	1176
frequency (tim			DV0P4285×4	No limit Note)2		Dur	ina	Radial load P-direction (N)	1764
Rated rotati		•	· · · · · · · · · · · · · · · · · · ·	1000			ration	Thrust load A, B-direction (N)	588
Max. rotatio	nal s	speed	(r/min)	2000			ar data	, , , , , , , , , , , , , , , , , , , ,	
Moment of i			Without brake	101				ils of Note 1 to Note 5, refer t ons of Driver, refer to P.46.	0 P.182, P.183
of rotor (×10) ~	g∙m⁺)	With brake	10	07			specifications:	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 time	10 times or less *2 T		The pr	oduct that the end of driver m ation has "E" is "Position cont	
Rotary encoder specifications Note)5			ications Note)5	20-bit Incremental	17-bit Absolute	[Detail of model designation, refer to P.16. *3 \bigcirc in number of applicable driver represents the		
	Res	olutio	n per single turn	1048576	131072	5	series.	For more information about to 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 MHME 1.0 kW [High inertia, Middle capacity]

Specifications

			AC2	00 V		
Motor model		IP65		MHME102GC	MHME102SC	
		IP67		MHME102G1	MHME102S1	
Amplianhla	Model	A5II, A5	series	MDD¢	T3530	
Applicable driver *2	No.	A5IIE, A	5E series	MDD OT3530E	-	
unver	Fi	ame sym	bol	D-fr	ame	
Power supply	capacit	у	(kVA)	1	.8	
Rated output			(W)	10	00	
Rated torque			(N·m)	4.	77	
Momentary M	ax. pea	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-	kg∙m²)	With b	orake	26.0		
Recommender ratio of the loa			5 times or less			
Rotary encod	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)

_ .	Radial load P-direction (N)	980
During assembly During operation	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

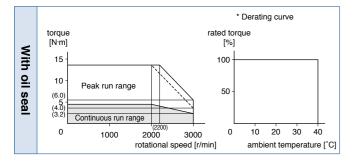
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

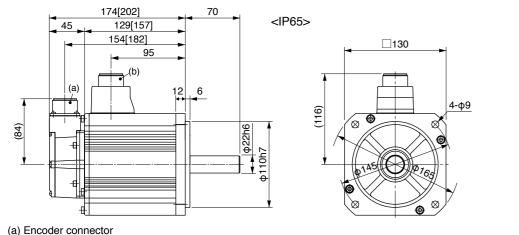
*1 Motor specifications:

- *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.

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



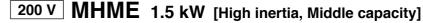
Dimensions



(b) Motor/Brake connector

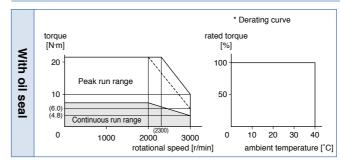
* Figures in [] represent the dimensions with brake.

<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.

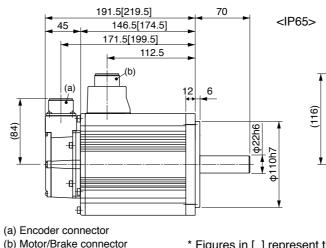


Specifications

Specific	Jacion	3						
		AC200 V		• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)				
Motor mode	IP65		MHME152GC	MHME152SC	(Do not use this for braking the motor in motion.)			
		IP67	MHME152G1	MHME152S1	Static f	riction torque (N·m)	13.7 or more	
Annlinghia	Model	A5II, A5 series	MDD	T5540	Engagi	ng time (ms)	100 or less	
Applicable driver *	2 No.	A5IIE, A5E series	MDD O T5540E	-	Releas	ing time (ms) Note)4	50 or less	
differ	F	rame symbol	D-fr	ame	Exciting	g current (DC) (A)	0.79±10 %	
Power supp	ly capacit	y (kVA)	2	.3	Releas	ing voltage (DC) (V)	2 or more	
Rated outpu		(W)	1500		Exciting	g voltage (DC) (V)	24±2.4	
	Rated torque (N·m)		7.16					
Momentary Max. peak torque (N·m)		21.5		• Perm	Permissible load (For details, refer to			
Rated curre	nt	(A(rms))	9.4			Radial load P-direction (N)	980	
Max. curren	t	(A(o-p))	40		During	Thrust load A-direction (N)	588	
Regenerative		Without option	22		assembly	Thrust load B-direction (N)	686	
frequency (tim	es/min) Note)1	DV0P4284	130		During	Radial load P-direction (N)	490	
Rated rotati	onal spee	d (r/min)	2000		During			
Max. rotatio	nal speed	(r/min)	3000		operatior	Thrust load A, B-direction (N)	196	
Moment of i	nertia	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 (×10	^{−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 enco	Rotary encoder specifications Note)5		20-bit 17-bit Incremental Absolute		Detai	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,			
					pleas	e refer to P.16.		



Dimensions

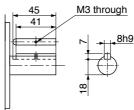


<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

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

Key way dimensions



[Unit: mm]

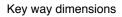
A5 Family

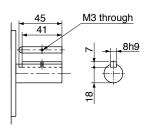
Motor Specifications

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/ 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	series	MED	T7364		
Applicable driver *2	No.	A5IIE, A	5E series	MED◇T7364E	-		
unver	Fr	ame sym	bol	E-fra	ame		
Power supply	capacit	у	(kVA)	3	.3		
Rated output			(W)	20	00		
Rated torque			(N·m)	9.	55		
Momentary M	ax. peal	k torque	(N·m)	28.6			
Rated current		(A(rms))	11.1			
Max. current			(A(o-p))	47			
Regenerative I	orake	Without option		45			
frequency (times/	min) Note)1	DV0P4285		142			
Rated rotation	al spee	d	(r/min)	2000			
Max. rotationa	l speed		(r/min)	3000			
Moment of ine	ertia	Without brake		57.8			
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m ²) With brake				59.6		
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.

(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.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

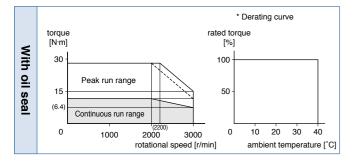
With brake/ 15.5 kg

M3 through

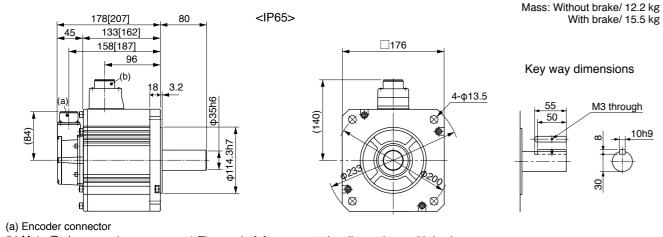
10h9

[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

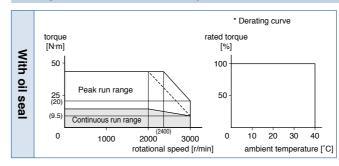
* Figures in [] represent the dimensions with brake.

<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.

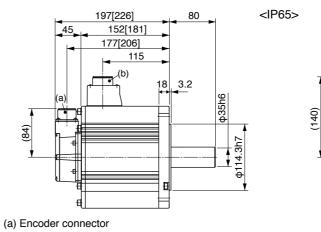
200 V MHME 3.0 kW [High inertia, Middle capacity]

Specifications

Specin	callo	15						
	AC200 V			specifications (For details				
Motor mode		IP65	MHME302GC	MHME302GC MHME302SC		(This brake will be released when it is energized.) 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 torqu		(N·m)	14.3			0 ()()		
Momentary		• • • •	43.0		Permi	Permissible load (For details, refer to P.18		
Rated curre	ent	(A(rms))	16.0 68 19			Radial load P-direction (N)	1666	
Max. currer	nt	(A(o-p))			During	Thrust load A-direction (N)	784	
Regenerativ		Without option			assembly	Thrust load B-direction (N)	980	
frequency (tin		D VOI 4200AL	142		During	Radial load P-direction (N)	784	
Rated rotat	onal spe	ed (r/min)	2000		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	io P.182, P.183	
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 Incremental	17-bit Absolute $*3 \diamondsuit$ in number of applicable driver represents		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

<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.

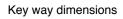
A5 Family

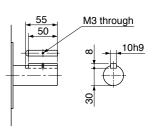
Motor Specifications

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





176 4-φ13.5 ø∅ \otimes

* Figures in [] represent the dimensions with brake.

[Unit: mm]

100

Motor Specifications

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

Specifications

			AC2	00 V		
Motor model		IP65		MHME402GC	MHME402SC	
*1		IP67		MHME402G1	MHME402S1	
Angliaghte	Model	A5II, A5	series	MFD🛇	TB3A2	
Applicable driver *2	No.	A5IIE, A	5E series	MFD OTB3A2E	-	
unver	Fr	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. peal	k torque	(N·m)	57.3		
Rated current		(A(rms))	21.0		
Max. current			(A(o-p))	89		
Regenerative b	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 t	orake	114		
	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	
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.

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 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.)

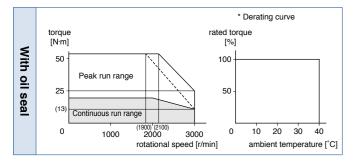
With brake/ 21.8 kg

M3 through

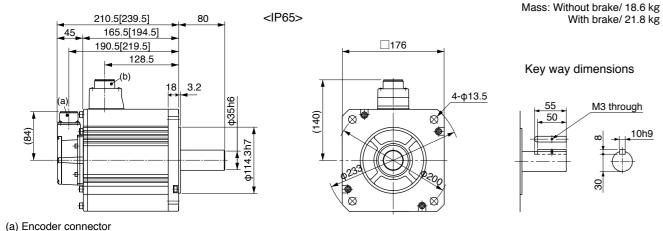
10h9

[Unit: mm]

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



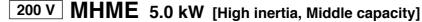
Dimensions



(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

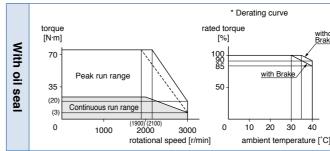
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



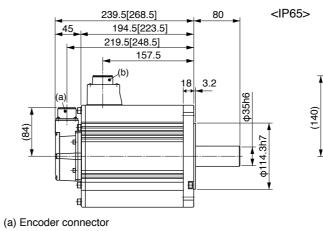
Specifications

Specifications									
				AC2	00 V		• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)		
Motor mod			IP65	MHME502GC MHME502SC		(Do not use this for braking the motor in motion.)			
	*1		IP67	MHME502G1	MHME502S1	Static friction torque (N·m)		24.5 or more	
Annlinghia		Model	A5II, A5 series	MFD🛇	TB3A2	Engagin	g time (ms)	80 or less	
Applicable driver	*2	No.	A5IIE, A5E series	MFD OTB3A2E	-	Releasir	ng time (ms) Note)4	25 or less	
unvor		Fr	ame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %	
Power sup		capacity	, , ,		.5	Releasir	ng voltage (DC) (V)	2 or more	
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4	
Rated torq			(N·m)						
Momentary		ix. peai	,	71.6		• Permi	ssible load (For details, refe	er to P.183)	
Rated curr	ent		(A(rms))	25.9			Radial load P-direction (N)	1666	
Max. curre	nt		(A(o-p))	1	10	During assembly	Thrust load A-direction (N)	784	
Regenerati			Without option	10		assembly	Thrust load B-direction (N)	980	
frequency (ti	mes/m	in) Note)1	DV0P4285×2	7	6	During	Radial load P-direction (N)	784	
Rated rota	tiona	al spee	d (r/min)	2000		During operation			
Max. rotati	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.183.		
of rotor (×1	0-4	kg∙m²)	With brake	164			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 end	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 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

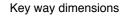
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

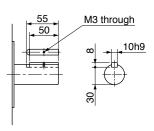
A5 Family

Motor Specifications

(For IP67 motor, refer to P.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.

[Unit: mm]

102

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 serie	es	MGD🛇	TC3B4	
Applicable driver *2	No.	A5IIE, A5E	series	—	_	
diver	Fr	ame symbol		G-fr	ame	
Power supply	capacit	y (ł	(VA)	1	1	
Rated output			(W)	75	00	
Rated torque		1)	N·m)	47	7.8	
Momentary Ma	ax. peal	k torque (N	N·m)	119		
Rated current		(A(rı	ms))	44.0		
Max. current		(A(c	o-p))	165		
Regenerative b	orake	Without option		No limit Note)2		
frequency (times/	min) Note)1	DV0P4285×4		No limit Note)2		
Rated rotation	al spee	d (r/ı	min)	1500		
Max. rotationa	l speed	(r/i	min)	3000		
Moment of ine	rtia	Without bra	ake	273		
of rotor (×10 ⁻⁴	kg∙m²)	With brak	æ	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 ti	urn	1048576	131072	

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

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

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

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

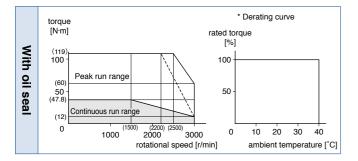
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.46.

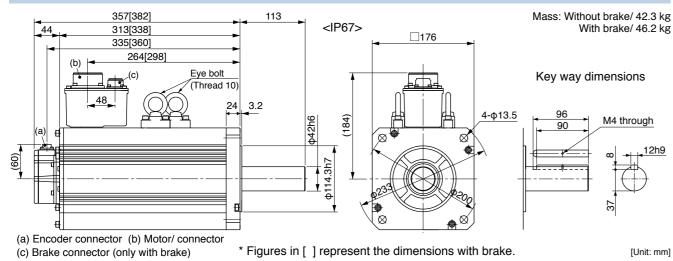
*1 Motor specifications:

- *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.>)



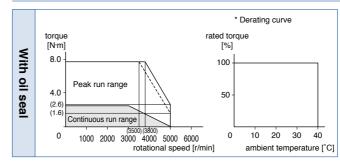
Dimensions



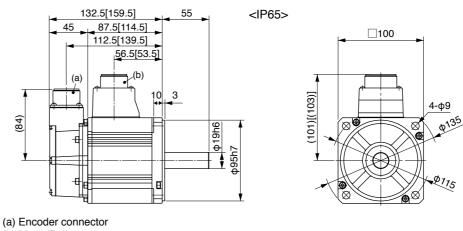
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400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

- --

Specifications								
				AC4	00 V	• Brake specifications (For details, refer to P.183)		
Motor model *1 IP65		MSME084GC MSME084SC		(This brake will be released when it is energized.) Do not use this for braking the motor in motion.				
			IP67	MSME084G1	MSME084S1	Static friction torque (N·m) 2		2.5 or more
Annellashia		Model	A5II, A5 series	MDD	T2412	Engagin	g time (ms)	50 or less
Applicable driver	*2	No.	A5IIE, A5E series	MDD OT2412E	-	Releasir	ng time (ms) Note)4	15 or less
diver		Fr	ame symbol	D-fr	ame	Exciting	current (DC) (A)	0.70±10 %
Power sup	ply o	capacit	y (kVA)	1	.6	Releasir	ng voltage (DC) (V)	2 or more
Rated outp	out		(W)	7	50	Exciting	voltage (DC) (V)	24±2.4
Rated torq	ue		(N·m)	2.39				
Momentary	y Ma	ix. peal	k torque (N·m)	7.16		 Permissible load (For details, refer to P.183) 		
Rated curr	ent		(A(rms))	2.4			Radial load P-direction (N)	980
Max. curre	nt		(A(o-p))	10		During	Thrust load A-direction (N)	588
Regenerati			Without option	No lim	it Note)2	assembly	Thrust load B-direction (N)	686
frequency (ti	imes/m	nin) Note)1	DV0PM20048	No lim	it Note)2			490
Rated rota	tiona	al spee	d (r/min)	3000		During	Radial load P-direction (N)	
Max. rotati	onal	speed	(r/min)	50	000	operation	Thrust load A, B-direction (N)	196
Moment of	iner	tia	Without brake	1.61		• For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×1	0-4	kg∙m²)	With brake	1.	93	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	17-bit Absolute	7-bit Detail of model designation, refer to P.16.		P.16.		
	Re	esolutio	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



Dimensions



(b) Motor/Brake connector

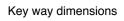
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

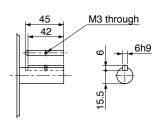
A5 Family **Motor Specifications**

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	
		IP67	MSME104G1	MSME104S1	
Amplicable	Model	A5II, A5 series	MDD¢	T3420	
Applicable driver *2	No.	A5IIE, A5E series	MDD 	-	
unver	Fi	ame symbol	D-fra	ame	
Power supply	capacit	y (kVA)	1	.8	
Rated output		(W)	10	00	
Rated torque		(N·m)	3.	18	
Momentary M	ax. pea	k torque (N·m)	9.55		
Rated current		(A(rms))	3.3		
Max. current		(A(o-p))	14		
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)	3000		
Max. rotationa	al speed	(r/min)	5000		
Moment of ine	ertia	Without brake	2.	03	
of rotor (×10 ⁻⁴	kg∙m²)	With brake	2.	35	
Recommender ratio of the loa			15 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)	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:

4-Φ9

- *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.)

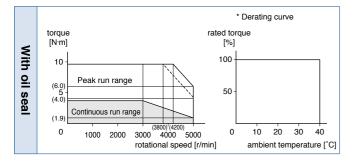
Mass: Without brake/ 3.5 kg

M3 through

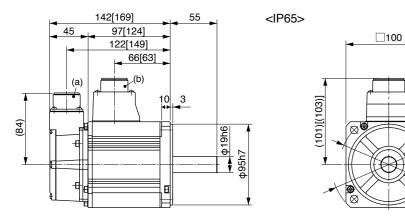
Key way dimensions

With brake/ 4.5 kg

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



Dimensions



⁽a) Encoder connector

* Figures in [] represent the dimensions with brake.

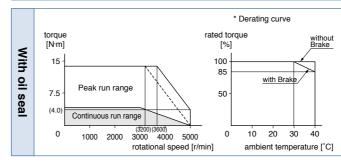
[Unit: mm]

6h9

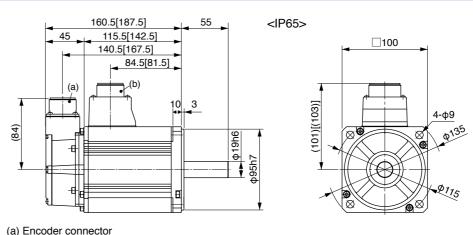
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400 V MSME 1.5 kW [Low inertia, Middle capacity]

A 141 11

Specific	ation	IS						
			AC4	00 V		specifications (For details		
Motor model			MSME154SC		ake will be released when it is e use this for braking the motor in			
		IP67	MSME154G1	MSME154S1	Static fri	ction torque (N·m)	7.8 or more	
Annelisse	Model	A5II, A5 series	MDD	T3420	Engagin	g time (ms)	50 or less	
Applicable driver *2	No.	A5IIE, A5E series	MDD \ T3420E	-	Releasir	ng time (ms) Note)4	15 or less	
anvoi	F	rame symbol	D-fr	ame	Exciting	current (DC) (A)	0.81±10 %	
Power suppl	y capacit	ty (kVA)	2	.3	Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)		600	Exciting	voltage (DC) (V)	24±2.4	
Rated torque		(N·m)	4.77					
Momentary N	/lax. pea	k torque (N·m)	14.3		Permissible load (For details, refer to P.183)			
Rated currer	t	(A(rms))	4	.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		D VOI NILOOHO		it Note)2	During	Radial load P-direction (N)	490	
Rated rotatio		()		000	operation	Thrust load A, B-direction (N)	196	
Max. rotation	al speed	d (r/min)	5000		operation	Thrust load A, B-direction (N)	190	
Moment of in		Without brake	2.84		 For details of Note 1 to Note 5, refer to P.182, P.183. Dimensions of Driver, refer to P.44. 			
of rotor (×10	⁻⁴ kg·m²)	With brake	3.17					
Recommended moment of inertia ratio of the load and the rotor Note)3			*1 Motor specifications: 15 times or less *2 The product that the end of dr designation has "E" is "Position		-			
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 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

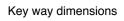
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

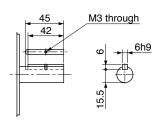
A5 Family **Motor Specifications**

Torque characteristics (at 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/ 4.4 kg With brake/ 5.4 kg





* Figures in [] represent the dimensions with brake.

[Unit: mm]

A5 Family

⁽b) Motor/Brake connector

Motor Specifications

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

Specifications

			AC4	00 V		
Matar madal		IP65		MSME204GC	MSME204SC	
Motor model *1		IP67		MSME204G1	MSME204S1	
Annlinghia	Model	A5II, A5 s	series	MED	T4430	
Applicable driver *2	No.	A5IIE, A5	E series	MED _{\begin{tabular}{l} T4430E \\ T4450E}	-	
unver	Fr	ame symb	ool	E-fra	ame	
Power supply	capacit	у	(kVA)	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(rms))	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/min)	3000		
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	3.	68	
of rotor (×10 ⁻⁴	kg∙m²)	With b	rake	4.01		
	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	Resolution per s			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:

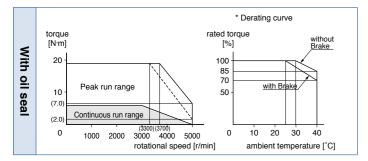
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

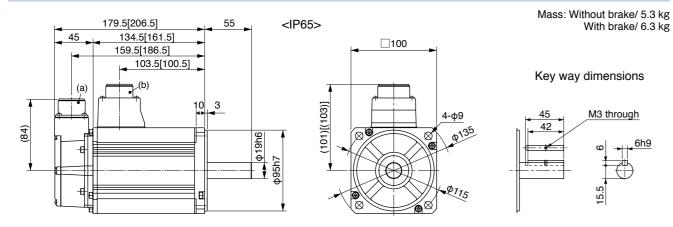
6h9

[Unit: mm]

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



Dimensions



⁽a) Encoder connector

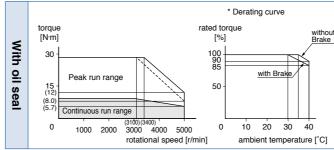
* Figures in [] represent the dimensions with brake.

<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.

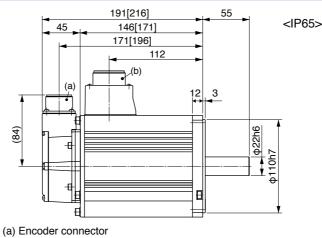
400 V MSME 3.0 kW [Low inertia, Middle capacity]

Creation

Specifi	cation	S					
			AC4	00 V		specifications (For details	
Motor mode	IP65		MSME304GC MSME304SC		(This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)		
wotor mode		IP67	MSME304G1	MSME304S1	Static friction torque (N·m)		11.8 or more
Annellaski	Model	A5II, A5 series	MFD	T5440	Engagin	g time (ms)	80 or less
Applicable driver *	No.	A5IIE, A5E series	MFD 	_	Releasir	ng time (ms) Note)4	15 or less
	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	0.81±10 %
Power supp	<i>,</i>	, ,		.5	Releasir	ng voltage (DC) (V)	2 or more
Rated outpu		(W)	3000		Exciting	voltage (DC) (V)	24±2.4
Rated torqu		(N·m)		9.55			
Momentary		1 ()	28.6		• Permissible load (For details, refer to P.183)		
Rated curre	nt	(A(rms))	9.2			Radial load P-direction (N)	980
Max. curren	t	(A(o-p))	39		During	Thrust load A-direction (N)	588
Regenerativ		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686
trequency (tim	es/min) Note)	DV0PM20049×2	No limit Note)2		During	Radial load P-direction (N)	490
Rated rotati	onal spee	ed (r/min)	3000		During		
Max. rotatio	nal speed	d (r/min)	5000		operation	Thrust load A, B-direction (N)	196
Moment of i	nertia	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		 *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 Detail of model designation, refer to P.16.		P.16.		
	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

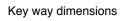
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

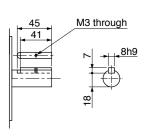
A5 Family **Motor Specifications**

Torque characteristics (at 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			MSME404SC	
Motor model *1		IP67		MSME404G1	MSME404S1	
A	Model	A5 I , A5 se	eries	MFD🛇	TA464	
Applicable driver *2	No.	A5IIE, A5E	E series	MFD 	-	
unver	Fi	ame symbo	ol	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 I	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	al speed	(r/min)	4500		
Moment of ine	ertia	Without b	orake	12	2.9	
of rotor (×10 ⁻⁴	kg∙m²)	With bra	ake	14.2		
	Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	Rotary encoder specifications Note)			20-bit Incremental	17-bit Absolute	
F	lesolutio	n per single	e turn	1048576	131072	

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

(/
Static friction torque (N·m)	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:

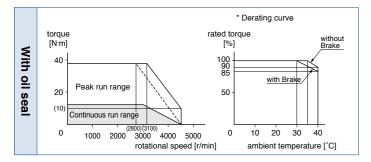
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

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

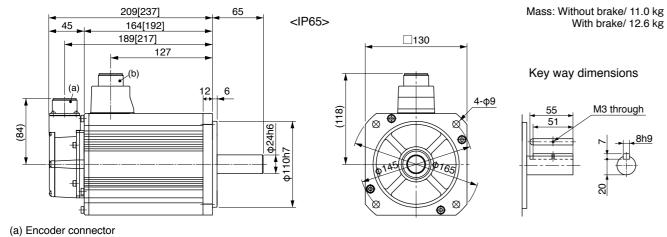
8h9

[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

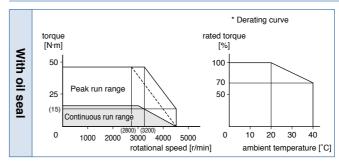
* Figures in [] represent the dimensions with brake.

<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.

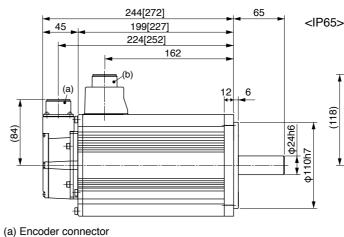
400 V MSME 5.0 kW [Low inertia, Middle capacity]

Specifications

Specifi	cation	S					
			AC4	00 V	• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)		
Motor modo	IP65		MSME504GC MSME504SC		(Do not use this for braking the motor in motion.)		
		IP67	MSME504G1	MSME504S1	Static fri	Static friction torque (N·m)	
Annlinghia	Model	A5II, A5 series	MFD	TA464	Engagin	g time (ms)	110 or less
Applicable driver *	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 supp	<i>,</i> ,	,		.5	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	5000		Exciting	voltage (DC) (V)	24±2.4
Rated torqu		(N·m)		15.9			
Momentary		1 ()	47.7		• Permissible load (For details, refer to P.183)		
Rated curre	nt	(A(rms))	12.0			Radial load P-direction (N)	980
Max. curren		(A(o-p))		1	During	Thrust load A-direction (N)	588
Regenerative		Without option	357		assembly	Thrust load B-direction (N)	686
trequency (tim	es/min) Note)1	DV0PM20049×2	No limit Note)2		During	Radial load P-direction (N)	784
Rated rotation	onal spee	d (r/min)	3000		During operation		
Max. rotatio	nal speed	l (r/min)	4500		operation	Thrust load A, B-direction (N)	343
Moment of i	nertia	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.16		P.16.		
	Resolutio	on per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.		



Dimensions



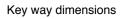
(b) Motor/Brake connector

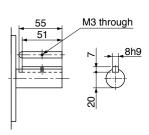
A5 Family **Motor Specifications**

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





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* 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

			AC400 V		
Motor model		IP65	MDME044GC	MDME044SC	
		IP67	MDME044G1	MDME044S1	
Annlinghia	Model	A5II, A5 series	MDD	T2407	
Applicable driver *2	No.	A5IIE, A5E series	MDD OT2407E	-	
unver	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	0	.9	
Rated output		(W)	40	00	
Rated torque		(N·m)	1.	91	
Momentary M	ax. peal	k torque (N·m)	5.	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)	30	00	
Moment of ine	ertia	Without brake	1.	61	
of rotor (×10 ⁻⁴	kg∙m²)	With brake	1.	1.93	
	Recommended moment of inertia ratio of the load and the rotor Note)3			s or less	
Rotary encode	Rotary encoder specifications Note)			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)	2.5 or more			
Engaging time (ms)	50 or less			
Releasing time (ms) Note)4	15 or less			
Exciting current (DC) (A)	0.70±10 %			
Releasing voltage (DC) (V)	2 or more			
Exciting voltage (DC) (V)	24±2.4			

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

During assembly 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.138.)

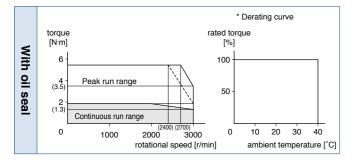
Mass: Without brake/ 3.1 kg

M3 through

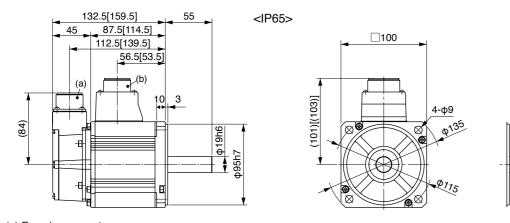
Key way dimensions

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.

[Unit: mm]

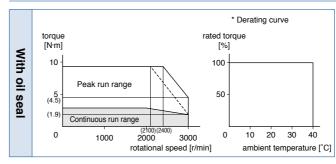
6h9

400 V MDME 600 W [Middle inertia, Middle capacity]

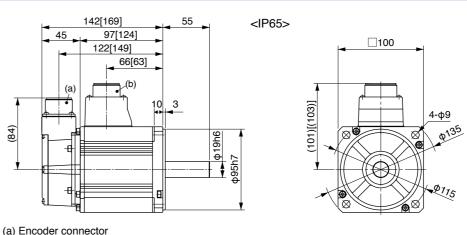
Specifications

					00 V	• Brake	specifications (For details	, refer to P.18
				AC4		This brake will be released when it is energized		
Motor mode		IP65	MDME064	GC	MDME064SC	Do not	use this for braking the motor in	n motion.)
	¢1	IP67	MDME064	G1	MDME064S1	Static fri	ction torque (N·m)	2.5 or more
A	Mod	A5II, A5 serie	s l	MDD<	T2407	Engagin	Engaging time (ms)	
Applicable driver	⊧2 No.	A5IIE, A5E s	eries MDD T2	407E	-	Releasir	ng time (ms) Note)4	15 or less
		Frame symbol		D-fr	ame	Exciting	current (DC) (A)	0.70±10 %
Power supp	oly capa	city (k	VA)		.2	Releasir	ng voltage (DC) (V)	2 or more
Rated outp			(W)	-	00	Exciting	voltage (DC) (V)	24±2.4
Rated torqu			·m)	2.86				
Momentary Max. peak torque (N·m)		,	8.59		• Permi	ssible load (For details, refe	er to P.183)	
Rated curre	ent	(A(rn	ıs))	1.5			Radial load P-direction (N)	980
Max. currer	nt	(A(o	-p))	6.5		During	Thrust load A-direction (N)	588
Regenerativ		Without opti	on	No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (tir	nes/min) Not	^{e)1} DV0PM200	48	No lim	it Note)2		Radial load P-direction (N)	490
Rated rotat	ional spe	ed (r/r	nin)	20	000	During		
Max. rotatio	onal spe	ed (r/n	nin)	30	000	operation	Thrust load A, B-direction (N)	196
Moment of	inertia	Without bra	ke	2.03		For details of Note 1 to Note 5, refer to P.182, P.18		
of rotor (×1	0 ⁻⁴ kg∙m) With brak	e	2.35			ions of Driver, refer to P.44.	
Recommended moment of inertia ratio of the load and the rotor Note)3			te)3	*1 Motor specifications: 10 times or less *2 The product that the end of driver m designation has """ is "Desition cost				
Rotary encoder specifications Note)5			20-bit Increment	-	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 		
Resolution per single turn 104				76	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

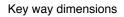
111

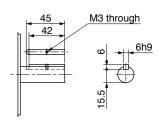
A5 Family

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.

[Unit: mm]

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<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 1.0 kW [Middle inertia, Middle capacity]

Specifications

			AC4	00 V	
Motor model	IP65		MDME104GC	MDME104SC	
wotor model *1		IP67	MDME104G1	MDME104S1	
Anneliset	Model	A5II, A5 series	MDD	T2412	
Applicable driver *2	No.	A5IIE, A5E series	MDD O T2412E	-	
unver	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	1	.8	
Rated output		(W)	10	00	
Rated torque		(N·m)	4.	77	
Momentary M	ax. peal	k torque (N·m)	14.3		
Rated current		(A(rms))	2.8		
Max. current		(A(o-p))	12		
Regenerative t	orake	Without option	No lim	t 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	4.	60	
of rotor (×10 ⁻⁴	kg∙m²)	With brake	5.	90	
	Recommended moment of inertia ratio of the load and the rotor Note)3			s or less	
Rotary encode	Rotary encoder specifications Note)5			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.)

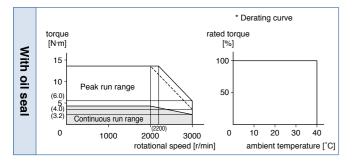
(
Static friction torque (N·m)	4.9 or more			
Engaging time (ms)	80 or less			
Releasing time (ms) Note)4	70 or less			
Exciting current (DC) (A)	0.59±10 %			
Releasing voltage (DC) (V)	2 or more			
Exciting voltage (DC) (V)	24±2.4			

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

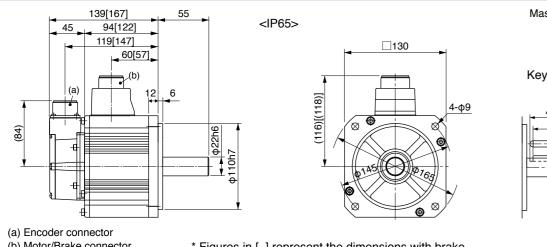
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- 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

* 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.

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

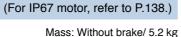
	Radial load P-direction (N)	980
uring sembly	Thrust load A-direction (N)	588
Joonnory	Thrust load B-direction (N)	686
uring	Radial load P-direction (N)	490
peration	Thrust load A, B-direction (N)	196

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

· Dimensions of Driver, refer to P.44.

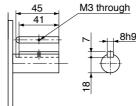
*1 Motor specifications:

- *2 The product that the end of driver model
- *3 \bigcirc in number of applicable driver represents the



With brake/ 6.7 kg

Key way dimensions

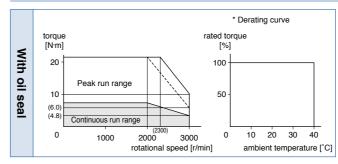


[Unit: mm]

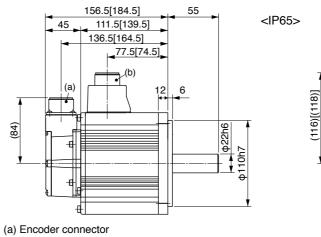
400 V MDME 1.5 kW [Middle inertia, Middle capacity]

Specifications

Specifi	Lai	1011	5					
				AC4	00 V	Brake specifications (For details, refer to P (This brake will be released when it is energized.)		
Motor mod			IP65	MDME154GC	MDME154SC		use this for braking the motor in	
	#1		IP67	MDME154G1	MDME154S1	Static fr	iction torque (N·m)	13.7 or more
Annelisse	N	/lodel	A5II, A5 series	MDD	T3420	Engagii	ng time (ms)	100 or less
Applicable driver	*2 N	۱o.	A5IIE, A5E series	MDD OT3420E	-	Releasi	ng time (ms) Note)4	50 or less
differ		Fra	ame symbol	D-fr	ame	Exciting	current (DC) (A)	0.79±10 %
Power sup		apacity	· · · · · · · · · · · · · · · · · · ·		.3	Releasi	ng voltage (DC) (V)	2 or more
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4
	Rated torque (N·m)							
Momentary Max. peak torque (N·m)		21.5		• Perm	issible load (For details, refe	er to P.183)		
Rated curre	ent		(A(rms))	4.7			Radial load P-direction (N)	980
Max. curre	nt		(A(o-p))	20		During	Thrust load A-direction (N)	588
Regenerativ		E E	Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (tir	nes/min) Note)1	DV0PM20048	No lim	it Note)2			
Rated rotat	ional	speed	d (r/min)	20	00	During	Radial load P-direction (N)	490
Max. rotatio	onal s	speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	196
Moment of	inerti	а	Without brake	6.70			ails of Note 1 to Note 5, refer t	o P.182, P.183
of rotor (×1	0 ⁻⁴ kg	g∙m²)	With brake	7.99			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". 		iodel trol type"		
Rotary encoder specifications Note)5			ications 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		
Resolution 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.

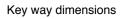
A5 Family

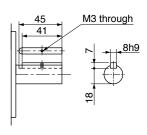
Motor Specifications

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

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

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





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Motor Specifications

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

Specifications

			AC4	00 V	
Motor model	IP65		MDME204GC	MDME204SC	
wotor model *1		IP67	MDME204G1	MDME204S1	
Anneliset	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)	28.6		
Rated current		(A(rms))	5.9		
Max. current		(A(o-p))	25		
Regenerative I	orake	Without option	No lim	t Note)2	
frequency (times/	min) Note)1	DV0PM20049	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	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	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072	

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

(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 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

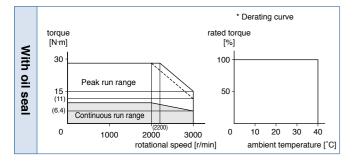
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

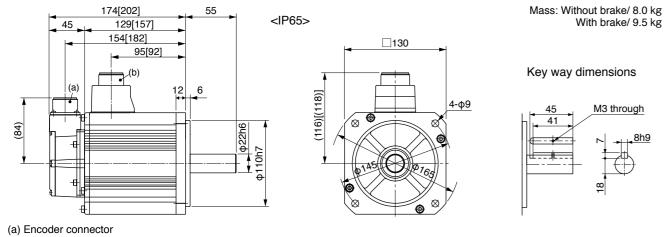
*1 Motor specifications:

- *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.

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



Dimensions



(b) Motor/Brake connector

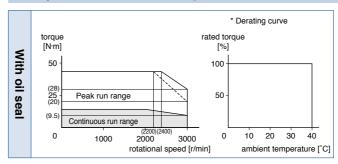
* Figures in [] represent the dimensions with brake.

<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.

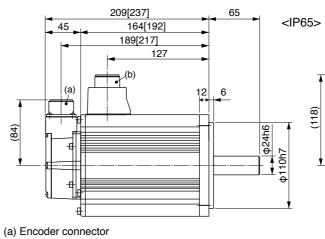


Specifications

Specin	Latioi	13					
			AC4	00 V		specifications (For details ake will be released when it is e	
Motor mode	J	IP65	MDME304GC	MDME304SC	(Do not use this for braking the motor in motion.)		
	1	IP67	MDME304G1	MDME304S1	Static friction torque (N·m)		16.2 or more
Annlinghi	Mode	A5II, A5 series	MFD	T5440	Engagin	g time (ms)	110 or less
Applicable driver *	2 No.	A5IE, A5E series	MFD O T5440E	-	Releasir	ng time (ms) Note)4	50 or less
	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	0.90±10 %
Power supp	<i>,</i> ,	, ,		.5	Releasir	ng voltage (DC) (V)	2 or more
Rated outpu		(W)		000	Exciting	Exciting voltage (DC) (V) 24±2.	
Rated torqu		(N·m)		4.3			L D (00)
Momentary		1 ()		43.0 • Permissible load (For details, refer to P		er to P.183)	
Rated curre		(A(rms))				Radial load P-direction (N)	980
Max. curren	Max. current (A(o-p))		37		During	Thrust load A-direction (N)	588
Regenerativ		Without option	No limit Note)2 No limit Note)2		assembly	Thrust load B-direction (N)	686
frequency (tim	es/min) Note)	¹ DV0PM20049×2					
Rated rotati	onal spe	ed (r/min)	20	2000 Duning		Radial load P-direction (N)	784
Max. rotatio	nal spee	d (r/min)	30	3000 operation Thrust load A, B-direction (N		Thrust load A, B-direction (N)	343
Moment of i	nertia	Without brake	12.9		For details of Note 1 to Note 5, refer to P.182, P.18		
of rotor (×10) ⁻⁴ kg·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 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 			
Resolution 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.

(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]

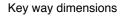
A5 Family

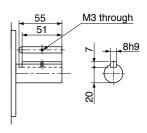
Motor Specifications

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





130 1-Φ

* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

			AC4	00 V	
Motor model		IP65		MDME404SC	
		IP67	MDME404G1	MDME404S1	
Annlinghia	Model	A5II, A5 series	MFD	TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD OTA464E	-	
unver	Fi	rame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	6	.8	
Rated output		(W)	40	00	
Rated torque		(N·m)	19	19.1	
Momentary M	ax. pea	k torque (N·m)	57.3		
Rated current		(A(rms))	10.6		
Max. current		(A(o-p))	45		
Regenerative I	orake	Without option	No lim	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)	3000		
Moment of ine	ertia	Without brake	37.6		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	42	42.9	
	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	
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 During operation	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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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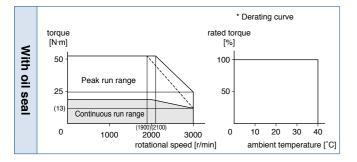
With brake/ 18.7 kg

M3 through

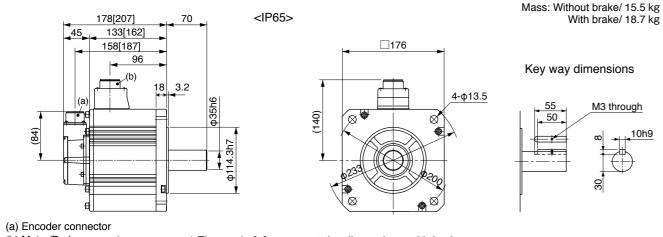
10h9

[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.

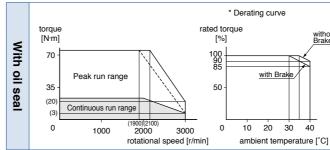
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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

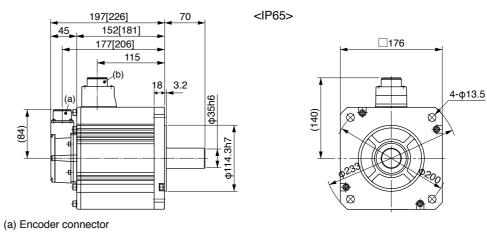
Specifications

Specini	Janon	3					
			AC400 V			specifications (For details	
IP65		IP65	MDME504GC MDME504SC			ake will be released when it is e use this for braking the motor ir	
Motor mode		IP67	MDME504G1	MDME504S1	Static friction torque (N·m)		24.5 or more
Annellashia	Model	A5II, A5 series	MFD	TA464	Engagin	g time (ms)	80 or less
Applicable driver *	2 No.	A5IIE, A5E series	MFD OTA464E	-	Releasir	ng time (ms) Note)4	25 or less
	F	rame symbol	F-fr	ame	Exciting current (DC) (A)		1.3±10 %
Power supp	y capacit	y (kVA)	7	.5	Releasir	Releasing voltage (DC) (V) 2 or	
Rated outpu		(W)		000	Exciting voltage (DC) (V)		24±2.4
Rated torqu		(N·m)		3.9			
Momentary		,	71.6 Permissible load (For details, refe		er to P.183)		
Rated curre	nt	(A(rms))				Radial load P-direction (N)	1666
Max. curren	t	(A(o-p))	55		During	Thrust load A-direction (N)	784
Regenerative		Without option	120		assembly	Thrust load B-direction (N)	980
frequency (tim	es/min) Note)1	DV0PM20049×2	No limit Note)2				
Rated rotati	onal spee	d (r/min)	2000		During	Radial load P-direction (N)	784
Max. rotatio	nal speed	(r/min)	3000		operation	Thrust load A, B-direction (N)	343
Moment of i	nertia	Without brake	48.0		For details of Note 1 to Note 5, refer to P.182, P.18		
of rotor (×10	^{−4} kg·m²)	With brake	53.3			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			
	Resolutio	n 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.>) * 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

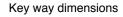
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

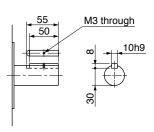
A5 Family

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

				AC4	00 V	
Motor model		IP65		-	-	
*1		IP67		MDME754G1	MDME754S1	
Annlinghle	Model	A5II, A5	series	MGD🗘	TB4A2	
Applicable driver *2	No.	A5IIE, A	5E series	-	_	
anver	F	rame sym	ibol	G-fr	ame	
Power supply	capacit	у	(kVA)	1	1	
Rated output			(W)	75	00	
Rated torque			(N·m)	47	7.8	
Momentary M	lax. pea	k torque	(N·m)	119		
Rated curren	t	((A(rms))	22		
Max. current			(A(o-p))	83		
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)	1500		
Max. rotation	al speed		(r/min)	3000		
Moment of in	ertia	Without	t brake	101		
of rotor (×10 ⁻	of rotor (×10 ⁻⁴ kg·m ²)			107		
	Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encod	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
F	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)

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)	1176
	Thrust load A, B-direction (N)	490

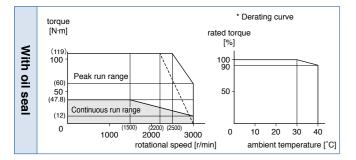
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.46.

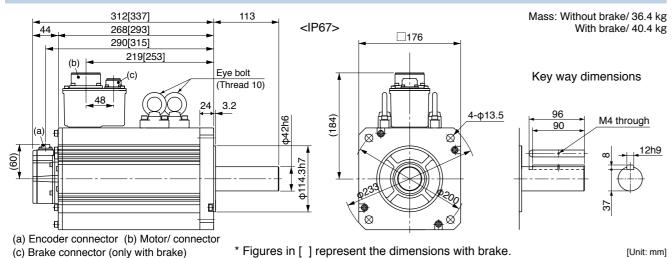
*1 Motor specifications:

- *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.>)



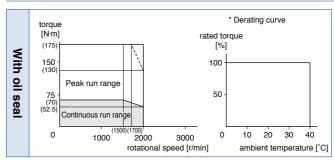
Dimensions



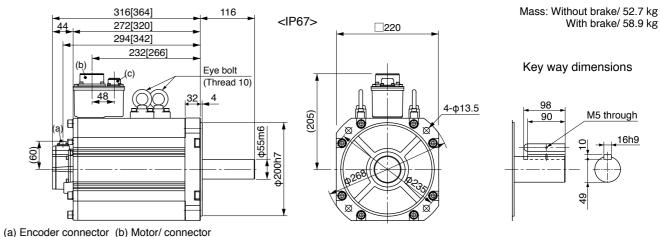
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400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

Creations

Specifi	cat	ion	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 ⊧1		IP67	MDMEC14G1	MDMEC14S1	Static fr	Static friction torque (N·m)		
Appliachla	N	/lodel	A5II, A5 series	MHD♦	TB4A2	Engagir	ng time (ms)	300 or less	
Applicable driver	⊧2 N	۱o.	A5IIE, A5E series	-	-	Releasi	ng time (ms) Note)4	140 or less	
		Fr	ame symbol	H-fr	ame	Exciting	current (DC) (A)	1.08±10 %	
Power supp	oly ca	apacity	/ (kVA)	17		Releasi	ng voltage (DC) (V)	2 or more	
Rated outp			(W)		11000 Exciting voltage (DC) (V)		24±2.4		
Rated torqu			(N·m)	-	70				
Momentary Max. peak torque (N·m)		torque (N·m)				ssible load (For details, refe	er to P.183)		
Rated curre	Rated current (A(rms))		27.1			Radial load P-direction (N)	4508		
Max. currer	nt (A(o-p)) 101			During	Thrust load A-direction (N)	1470			
Regenerativ			Without option	No limi	it Note)2	assembly	Thrust load B-direction (N)	1764	
frequency (tir	nes/min) Note)1	DV0PM20059	No limit Note)2			Radial load P-direction (N)	2254	
Rated rotat	ional	speed	d (r/min)	1500		During			
Max. rotatio	onal s	speed	(r/min)	2000		operation	Thrust load A, B-direction (N)	686	
Moment of	inerti	a	Without brake	212		For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×1	0 ⁻⁴ k∉	g∙m²)	With brake	220			ions of Driver, refer to P.46.		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 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 Incremental	17-bit Absolute	Detail of model designation, refer to P.16. *3 ♦ in number of applicable driver represents the					
Resolution per single turn			n per single turn	1048576	131072	series	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

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

Specifications

				AC4	00 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-fr	ame	
Power supply	capacit	у	(kVA)	2	2	
Rated output			(W)	150	000	
Rated torque			(N·m)	95	95.5	
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	DV0PM20059		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			10 times or less		
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	Resolution per single turn				131072	

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

(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)

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

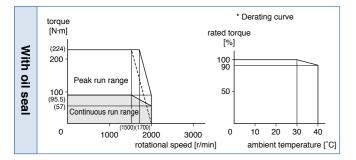
• For details of Note 1 to Note 5, refer to P.182, P.183.

• Dimensions of Driver, refer to P.47.

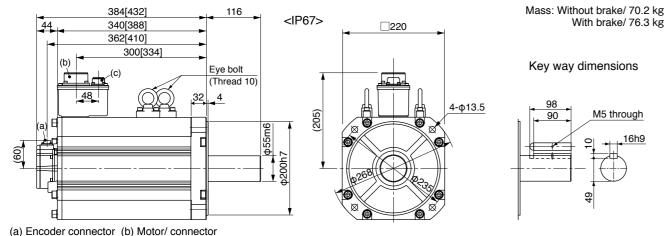
*1 Motor specifications:

- *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.

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



Dimensions



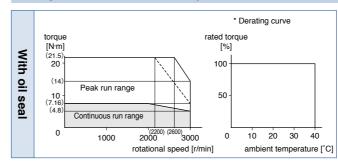
(c) Brake connector (only with brake)

* Figures in [] represent the dimensions with brake.

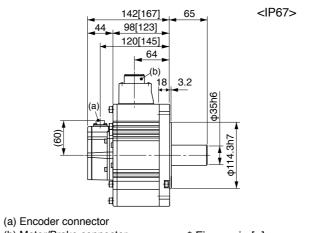
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. [Unit: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

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

Specifications									
				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.)			
Wotor moo	*1		IP67	MFME154G1	MFME154S1	Static friction torque (N·m) 7.8 c		7.8 or more	
Appliachla		Model	A5II, A5 series	MDD	T3420	Engagir	ng time (ms)	80 or less	
Applicable driver	*2	No.	A5IIE, A5E series	MDD OT3420E	-	Releasi	ng time (ms) Note)4	35 or less	
		Fr	ame symbol	D-fr	ame	Exciting	current (DC) (A)	0.83±10 %	
Power sup	ply o	capacity	y (kVA)	2	.4	Releasi	ng voltage (DC) (V)	2 or more	
Rated outp			(W)	1500		Exciting	Exciting voltage (DC) (V)		
Rated torq	ue		(N·m)	7.16					
Momentary	y Ma	ix. peal	k torque (N·m)	21.5		• Perm	• Permissible load (For details, refer to P.183)		
Rated curr	ent		(A(rms))	3.8			Radial load P-direction (N)	980	
Max. curre	nt		(A(o-p))	16		During	Thrust load A-direction (N)	588	
Regenerati			Without option	100		assembly	Thrust load B-direction (N)	686	
frequency (ti	imes/m	nin) Note)1	DV0PM20048	No limit Note)2			Radial load P-direction (N)	490	
Rated rota	tiona	al spee	d (r/min)	2000		During operation			
Max. rotati	onal	speed	(r/min)	3000		operation	Thrust load A, B-direction (N)	196	
Moment of	ine:	tia	Without brake	18.2		• For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×1	10-4	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 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		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.			



Dimensions



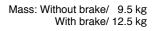
(b) Motor/Brake connector

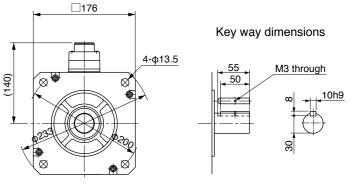
* Figures in [] represent the dimensions with brake.

<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.>)





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 _{\begin{tabular}{l} T4430E \\ T4450E}	-	
unver	Fi	rame sym	lod	E-fr	ame	
Power supply	capacit	у	(kVA)	3	.9	
Rated output			(W)	25	00	
Rated torque			(N·m)	11	.9	
Momentary Ma	ax. pea	k torque	(N·m)	30.4		
Rated current		((A(rms))	6.7		
Max. current			(A(o-p))	29		
Regenerative b	without option		t option	75		
frequency (times/	nin) Note)1 DV0PM20		120049	No limit Note)2		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia	Withou	t brake	35	5.8	
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m ²) With brake			45.2		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		
Rotary encode	Rotary encoder specifications Note)5				17-bit Absolute	
R	esolutio	n per sing	gle turn	1048576	131072	

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

	,
Static friction torque (N·m)	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
accombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

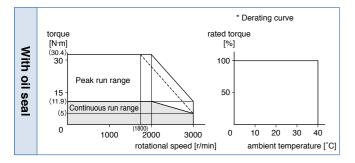
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · 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 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

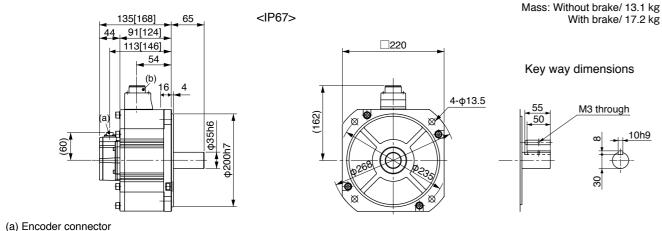
10h9

[Unit: mm]

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



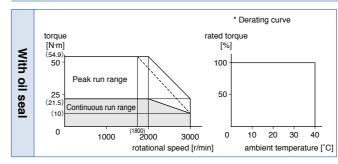
Dimensions



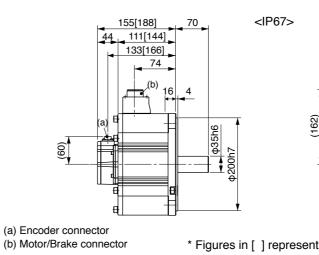
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<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.

Specifi	cat	ion	s						
				AC400 V			• Brake specifications (For details, refer to P.183		
			IP65			(This brake will be released when it is energized. (Do not use this for braking the motor in motion.)			
Motor mode			IP67	MFME454G1	MFME454S1	Static friction torque (N·m)		31.4 or more	
Annelissiste	N	/lodel	A5II, A5 series	MFD¢	TA464	Engag	ging	g time (ms)	150 or less
Applicable driver *		lo.	A5IIE, A5E series	MFD 	-	Releas	sin	g time (ms) Note)4	100 or less
		Fr	ame symbol	F-fr	ame	Excitin	ng d	current (DC) (A)	0.75±10 %
Power supp	ly ca	apacity	y (kVA)	6	.9	Relea	sin	g voltage (DC) (V)	2 or more
Rated output	It		(W)	4500		Excitin	Exciting voltage (DC) (V)		24±2.4
Rated torqu	е		(N·m)	21.5			5		
Momentary	Max	. peał	k torque (N·m)	54.9		Permissible load (For details, refer to P.183)			
Rated curre	nt		(A(rms))	12.4				Radial load P-direction (N)	1862
Max. curren	t		(A(o-p))	53		During		Thrust load A-direction (N)	686
Regenerative			Without option	6	7	assemb	oiy_	Thrust load B-direction (N)	686
frequency (tim	es/min) Note)1	DV0PM20049×2	3	75	During		Radial load P-direction (N)	784
Rated rotation	onal	speed	d (r/min)	2000		During operatio	n		294
Max. rotatio	nal s	speed	(r/min)	3000				Thrust load A, B-direction (N)	-
Moment of i	nerti	a	Without brake	63.1		• For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10) ⁻⁴ kg	g∙m²)	With brake	70).9	Dimensions 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 17-bit Incremental Absolute		Detail of model designation, refer to P.16. *3 \bigcirc in number of applicable driver represents the			P.16.		
	Res	olutio	n per single turn	1048576	131072	series. For more information about the part number, please refer to P.16.			



Dimensions

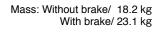


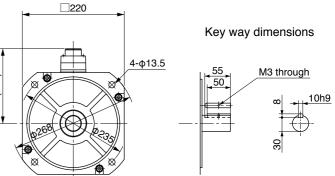
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

ia, Middle capacity]

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 MGME 0.9 kW [Middle inertia, Middle capacity]

Specifications

			AC4	00 V		
Motor model	IP65		MGME094GC	MGME094SC		
		IP67	MGME094G1	MGME094S1		
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)	1	.8		
Rated output		(W)	90	00		
Rated torque		(N·m)	8.	8.59		
Momentary M	ax. peal	k torque (N·m)	19.3			
Rated current		(A(rms))	3.8			
Max. current		(A(o-p))	12			
Regenerative I	orake	Without option	No limit Note)2			
frequency (times/	nin) Note)1 DV0PM20048		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	6.70			
of rotor (×10 ⁻⁴	kg∙m²)	With brake	7.99			
Recommender ratio of the loa			10 times or less			
Rotary encoder specifications 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)	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.)

41

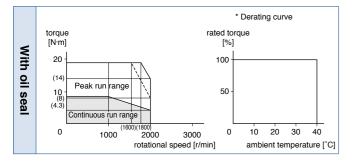
With brake/ 8.2 kg

M3 through

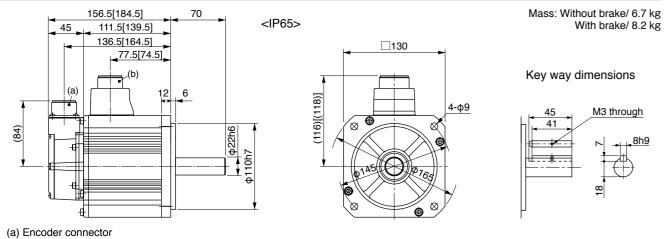
.8h9

[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.

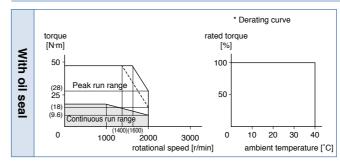
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.



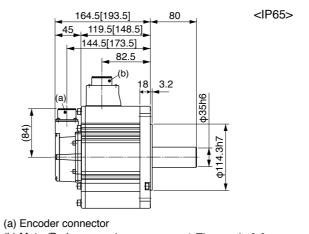
Specifications

Specifi					. .	14 11		
			AC400 V		 Brake specifications (For details, refer to P.183 /This brake will be released when it is energized.) 			
Matarianada		IP65	MGME204GC					
Motor mode		IP67	MGME204G1	MGME204S1	Static friction torque (N·m)		24.5 or more	
	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	25 or less	
unver	F	rame symbol	F-fr	ame	Exciting	current (DC) (A)	1.3±10 %	
Power supp	ly capacit	ty (kVA)	3	.8	Releasir	ng voltage (DC) (V)	2 or more	
Rated outpu	t	(W)	20	000	Exciting	voltage (DC) (V)	24±2.4	
Rated torqu		(N·m)	19.1			0 ()()	<u> </u>	
Momentary	Max. pea	k torque (N·m)	47.7		 Permi 	ssible load (For details, refe	er to P.183)	
Rated current (A(rms))		8.5			Radial load P-direction (N)	1666		
Max. curren	t	(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 (tim	es/min) Note)	DV0PM20049×2	No limit Note)2		D .	Radial load P-direction (N)	1176	
Rated rotati	onal spee	ed (r/min)	1000		During			
Max. rotatio	nal speed	d (r/min)	2000		operation	Thrust load A, B-direction (N)	490	
Moment of i	nertia	Without brake	30.3		For details of Note 1 to Note 5, refer to P.182, P.183			
of rotor (×10	^{−4} kg·m²)	With brake	35.6			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	it 17-bit Detail of model designation, refer to P.16.		P.16.			
Resolution 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

* Figures in [] represent the dimensions with brake.

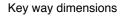
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

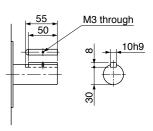
A5 Family

Motor Specifications

(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	
Matarimodal	IP65		MGME304GC	MGME304SC	
Motor model *1		IP67	MGME304G1	MGME304S1	
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)	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	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)	1000		
Max. rotationa	al speed	(r/min)	2000		
Moment of ine	ertia	Without brake	48.4		
of rotor (×10 ⁻²	kg∙m²)	With brake	53.7		
Recommender ratio of the loa			10 times or less		
Rotary encoder specifications 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.

(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	assembly	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.)

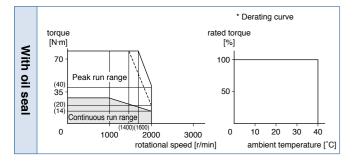
With brake/ 23.5 kg

M3 through

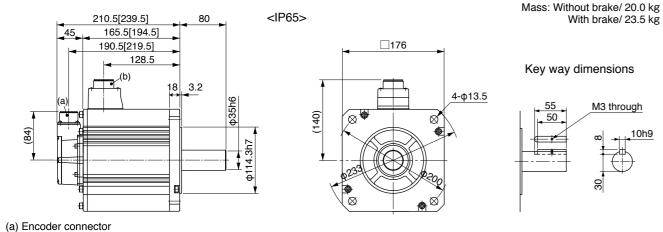
10h9

[Unit: mm]

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



Dimensions



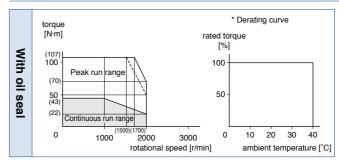
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<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.

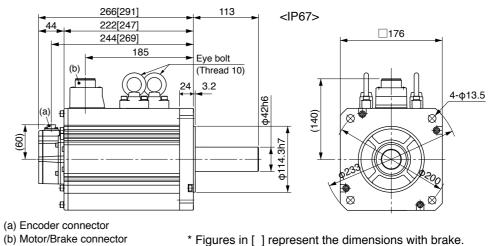
400 V MGME 4.5 kW [Middle inertia, Middle capacity]

Creations

Specif	Ica	tion	S							
	AC400 V		 Brake specifications (For details, refer to P.18) (This brake will be released when it is energized.) 							
Motor model *1			IP65	-			(Do not use this for braking the motor in motion.)			
			IP67	MGME454G1	MGME454S1	Static friction torque (N·m)		58.8 or more		
Annelisatela		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	50 or less		
		Fr	ame symbol	F-fr	ame	Exciting	current (DC) (A)	1.4±10 %		
Power sup	ply c	apacit	y (kVA)	7	.5	Releasi	ng voltage (DC) (V)	2 or more		
Rated outp			(W)	4500		Exciting	voltage (DC) (V)	24±2.4		
Rated torq			(N·m)	43.0						
Momentary		x. peal	1 ()	107		• Perm	issible load (For details, refe	er to P.183)		
Rated curr	ent		(A(rms))		1.8		Radial load P-direction (N)	2058		
Max. curre	nt		(A(o-p))	5	5	During	Thrust load A-direction (N)	980		
Regenerativ			Without option	No limit Note)2 No limit Note)2		assembly	Thrust load B-direction (N)	1176		
frequency (ti	mes/m	iin) Note)1	DV0PM20049×2			_	Radial load P-direction (N)	1470		
Rated rota	tiona	al spee	d (r/min)	1000		During				
Max. rotati	onal	speed	(r/min)	2000		operation	Thrust load A, B-direction (N)	490		
Moment of	iner	tia	Without brake	79	9.1	For details of Note 1 to Note 5, refer to P.182, P.18				
of rotor (×1	0 ⁻⁴	kg∙m²)	With brake	84.4			sions 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	D-bit 17-bit Detail of model designation, refer to P.16.			P.16.				
Resolution per single turn				1048576	131072	series. For more information about the part number please refer to P.16.				



Dimensions



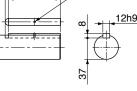
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

A5 Family

Motor Specifications

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

90



Mass: Without brake/ 29.4 kg

Key way dimensions

With brake/ 33.0 kg

M4 through

Motor Specifications

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

Specifications

				AC4	00 V		
Motor model	IP65			-	-		
		IP67		MGME604G1	MGME604S1		
Arristantes	Model	A5II, A5 se	eries	MGD�	TB4A2		
Applicable driver *2	No.	A5IIE, A5I	E series	-	-		
unver	Fi	ame symb	ol	G-fr	ame		
Power supply	capacit	у	(kVA)	9	.0		
Rated output			(W)	60	00		
Rated torque			(N·m)	57.3			
Momentary M	ax. pea	k torque	143				
Rated current	Rated current (A(rms))				19.4		
Max. current	Max. current			74			
Regenerative I	orake	Without option		No limit Note)2			
frequency (times/	min) Note)1	DV0PM20049×3		No limit Note)2			
Rated rotation	al spee	d ((r/min)	10	00		
Max. rotationa	al speed	((r/min)	2000			
Moment of ine	ertia	Without brake		101			
of rotor (×10 ⁻⁴	kg∙m²)	With br	ake	107			
	lecommended moment of atio of the load and the rot			10 times or less			
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute		
F	lesolutio	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)	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

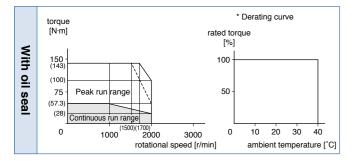
• Permissible load (For details, refer to P.183)

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

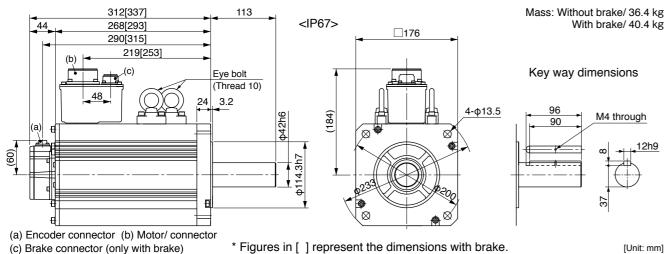
• For details of Note 1 to Note 5, refer to P.182, P.183.

- · 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.>)

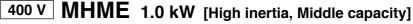


Dimensions



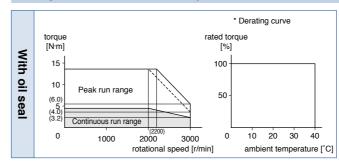
(c) Brake connector (only with brake)

<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.

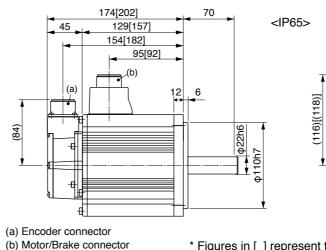


Specifications

Specifications									
		AC400 V		• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)					
Motor mod	اما		IP65	MHME104GC	MHME104SC	(Do not use this for braking the motor in motion.)			
Motor model *1		IP67		MHME104G1 MHME104S1			Static friction torque (N·m)		4.9 or more
Appliachla		Model	A5II, A5 series	MDD	T2412		Engagin	g time (ms)	80 or less
Applicable driver	*2	No.	A5IIE, A5E series	MDD O T2412E	_		Releasir	ng time (ms) Note)4	70 or less
		Fr	ame symbol	D-fr	ame		Exciting	0.59±10 %	
Power sup		capacity			.8		Releasir	ng voltage (DC) (V)	2 or more
Rated outp			(W)				Exciting	voltage (DC) (V)	24±2.4
Rated torq			(N·m)			• Dermissible lead (Ear dataile actual D (20)			
Momentar	, 	ax. peal	1 ()	14.3			• Permi	ssible load (For details, refe	er to P.183)
Rated curr	ent		(A(rms))	2.9			During	Radial load P-direction (N)	980
Max. curre	nt		(A(o-p))	12				Thrust load A-direction (N)	588
Regenerati			Without option	83 No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (t	imes/n	nin) Note)1	DV0PM20048					Radial load P-direction (N)	490
Rated rota	tiona	al spee	d (r/min)	2000			During		
Max. rotati	ona	speed	(r/min)	3000			operation	Thrust load A, B-direction (N)	196
Moment of	ine	rtia	Without brake	24.7		• For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (x1	10-4	kg∙m²)	With brake	26.0		• 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 17-bit Incremental Absolute $33 \odot$ in number of applicable driver represer		P.16. presents the					
Resolution per single turn			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.

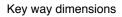
A5 Family

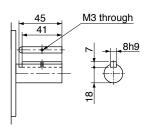
Motor Specifications

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/ 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		
WIOLOF MODEI *1		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.	7.16		
Momentary M	ax. peal	k torque (N·m)	21.5			
Rated current		(A(rms))	4.7			
Max. current		(A(o-p)) 20		0		
Regenerative I	orake	Without option	22			
frequency (times/	min) Note)1	DV0PM20048	130			
Rated rotation	al spee	d (r/min)	2000			
Max. rotationa	l speed	(r/min)	30	00		
Moment of ine	ertia	Without brake	37.1			
of rotor (×10 ⁻⁴	kg∙m²)	With brake	38.4			
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 single turn	1048576	131072		

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

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

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

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

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

- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \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.)

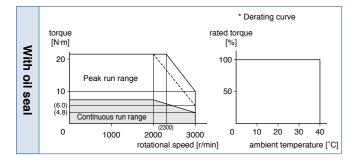
With brake/ 10.1 kg

M3 through

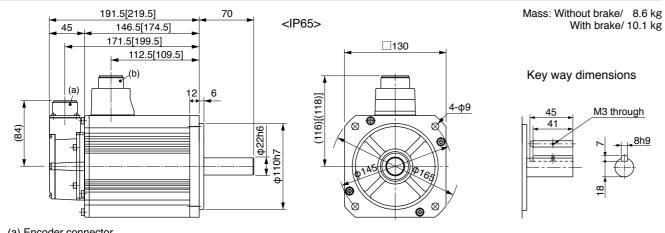
.8h9

[Unit: mm]

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



Dimensions



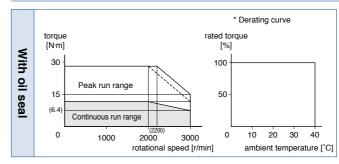
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<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.

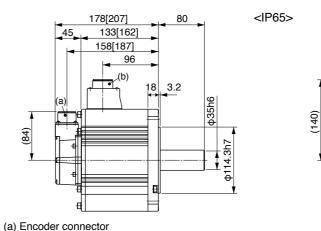


Specifications

Specifications								
		AC400 V		• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.)				
Motor model		IP65		MHME204SC		not use this for braking the motor in motion.		
*1		IP67	MHME204G1	MHME204S1	Static friction torque (N·m)		24.5 or more	
Annlinghia	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	
	F	rame symbol	E-fr	ame	Exciting	current (DC) (A)	1.3±10 %	
Power supply		,		.3	Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)		000	Exciting	voltage (DC) (V)	24±2.4	
Rated torque		(N·m)	9.55					
Momentary N	/lax. pea	k torque (N·m)	28.6		• Permi	• Permissible load (For details, refer to P.183)		
Rated currer	t	(A(rms))				Radial load P-direction (N)	1666	
Max. current		(A(o-p))	2	24	During	Thrust load A-direction (N)	784	
Regenerative		Without option	45		assembly	Thrust load B-direction (N)	980	
frequency (time	s/min) Note)	DV0PM20048	142		.	Radial load P-direction (N)	784	
Rated rotatio	nal spee	ed (r/min)	2000		During			
Max. rotation	al speed	d (r/min)	3000		operation	Thrust load A, B-direction (N)	343	
Moment of in	ertia	Without brake	57.8		For details of Note 1 to Note 5, refer to P.182, P.183.			
of rotor (×10	⁴ kg·m²)	With brake	59.6			• 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		20-bit Incremental	17-bit Absolute	17-bit Detail of model designation, refer to P.16.		P.16.		
Resolution 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.

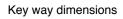
A5 Family

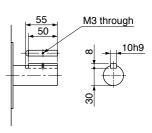
Motor Specifications

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

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

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





176 4-φ13.5 øØ

* Figures in [] represent the dimensions with brake.

Motor Specifications

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

Specifications

			AC4	00 V	
Motor model		IP65	MHME304GC	MHME304SC	
		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)	43.0		
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)	2000		
Max. rotationa	al speed	(r/min)	3000		
Moment of ine	ertia	Without brake	90.5		
of rotor (×10 ⁻⁴	kg∙m²)	With brake	92.1		
	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.

(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 assembl		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.140.)

50

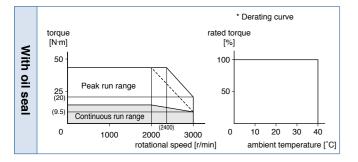
With brake/ 19.2 kg

M3 through

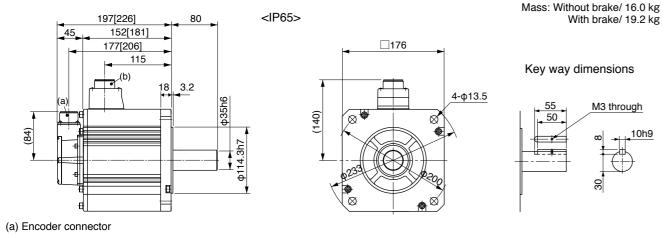
10h9

[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

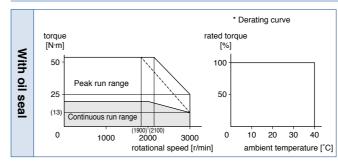
* Figures in [] represent the dimensions with brake.

<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.

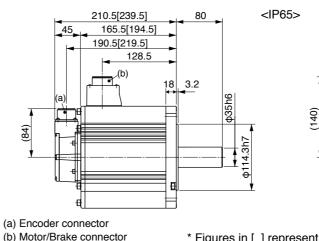
400 V MHME 4.0 kW [High inertia, Middle capacity]

Specifications

Specif	ica	luon	5									
				AC4	00 V	• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.)						
Motor model *1 IP65 IP67			IP65	MHME404GC	MHME404SC		use this for braking the motor in					
			IP67	MHME404G1	MHME404S1	Static fri	24.5 or more					
Annelisselete		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				
anver		Fr	ame symbol	F-fr	ame	Exciting	1.3±10 %					
Power sup	ply c	capacit	y (kVA)	6	.8	Releasir	ng voltage (DC) (V)	2 or more				
Rated outp			(W)		00	Exciting	voltage (DC) (V)	24±2.4				
Rated torq			(N·m)		9.1		••••					
Momentary		ix. peal	• • • •		7.3	 Permi 	• Permissible load (For details, refer to P.183)					
Rated curr	ent		(A(rms))	10).5	_	Radial load P-direction (N)	1666				
Max. curre	nt		(A(o-p))	4	5	During assembly	Thrust load A-direction (N)	784				
Regenerativ			Without option	1	7		Thrust load B-direction (N)	980				
frequency (ti	mes/m	nin) Note)1	DV0PM20049×2	12	25	During	Radial load P-direction (N)	784				
Rated rotat	tiona	al spee	d (r/min)	20	00	During operation						
Max. rotati	onal	speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	343				
Moment of	iner	tia	Without brake	11	12	 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	1	14							
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						
	Re	esolutio	n per single turn	1048576	131072	series	. For more information about t e 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.

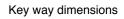
A5 Family

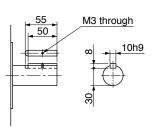
Motor Specifications

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			
*1		IP67		MHME504G1 MHME504S1				
Annlinghia	Model	A5II, A5 s	series	MFD🛇	TA464			
Applicable driver *2	No.	A5IIE, A5	E series	MFD 	-			
unver	Fi	rame symb	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. pea	k torque	(N·m)	71.6				
Rated current		(A	A(rms))	13.0				
Max. current		(4	A(o-p))	55				
Regenerative	orake	Without	option	10				
frequency (times	min) Note)1	DV0PM20	0049×2	76				
Rated rotatior	nal spee	d	(r/min)	2000				
Max. rotationa	al speed		(r/min)	3000				
Moment of ine	ertia	Without	brake	16	62			
of rotor (×10 ⁻²	kg∙m²)	With b	rake	16	64			
Recommender ratio of the loa			ia Note)3	5 times or less				
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute			
F	lesolutio	n per singl	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	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.

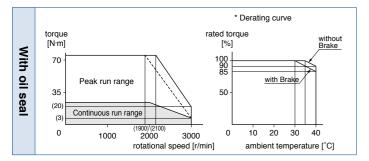
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about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

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

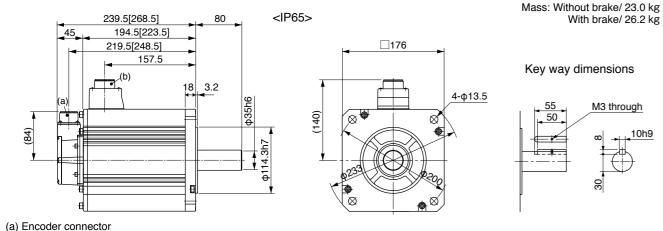
10h9

[Unit: mm]

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

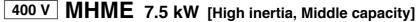


Dimensions



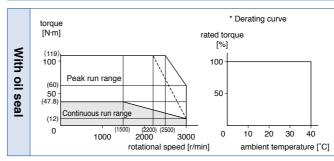
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<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.

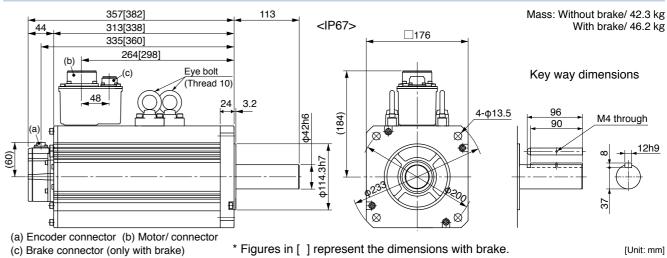


Specifications

Specific	ation	.			_						
			AC4	00 V	• Brake specifications (For details, refer to P.183						
IP65			-	_		rake will be released when it is e use this for braking the motor in					
WOTOR MODEI *1	Aotor model *1 IP67			MHME754G1 MHME754S1		Static friction torque (N·m)					
A 12 1.1	Model	A5II, A5 series	MGD¢	TB4A2	Engagir	g time (ms)	150 or less				
Applicable driver *2	No.	A5IIE, A5E series	-	-	Releasi	ng time (ms) Note)4	50 or less				
unver	Fi	rame symbol	G-fr	ame	Exciting	current (DC) (A)	1.4±10 %				
Power supply	capacit	y (kVA)	9	.0	Releasi	ng voltage (DC) (V)	2 or more				
Rated output		(W)		00	Exciting	voltage (DC) (V)	24±2.4				
Rated torque		(N·m)		7.8							
Momentary N		1 ()		19	Permi	Permissible load (For details, refer					
Rated current	Rated current (A(rms))		22	2.0		Radial load P-direction (N)	2058				
Max. current		(A(o-p))	8	3	During	Thrust load A-direction (N)	980				
Regenerative		Without option	No lim	it Note)2	assembly	Thrust load B-direction (N)	1176				
frequency (times	/min) Note)1	DV0PM20049×3	No lim	t Note)2		Radial load P-direction (N)	1176				
Rated rotation	nal spee	d (r/min)	15	00	During		-				
Max. rotationa	al speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	490				
Moment of ine	ertia	Without brake	2	73		 For details of Note 1 to Note 5, refer to P.182, P.183 Dimensions of Driver, refer to P.46. 					
of rotor (×10-	¹ kg∙m²)	With brake	2	79							
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 encoder specifications Note)5			20-bit Incremental	17-bit Absolute	Detail	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 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.

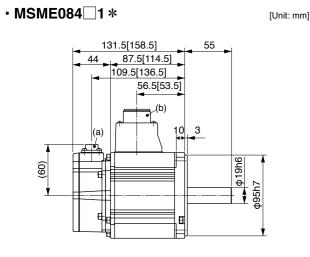
A5 Family

Motor Specifications

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

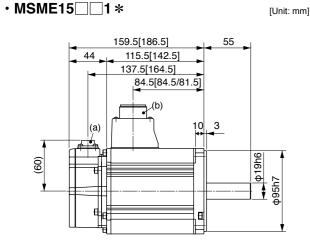
Dimensions

IP67 motor (MSME 200 V/ 400 V type)

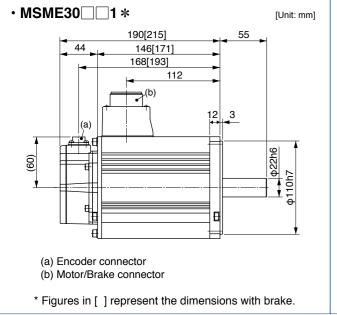


(a) Encoder connector (b) Motor/Brake connector

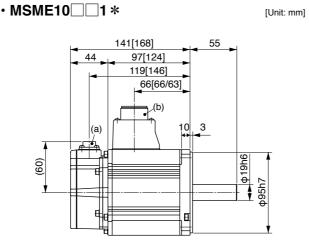
* Figures in [] represent the dimensions with brake.



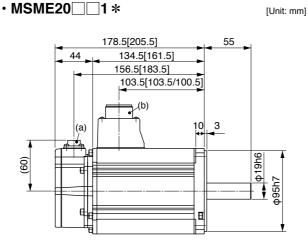
(a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.



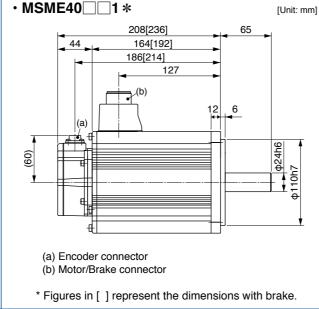
* For motor specifications, refer to IP65 motor page.



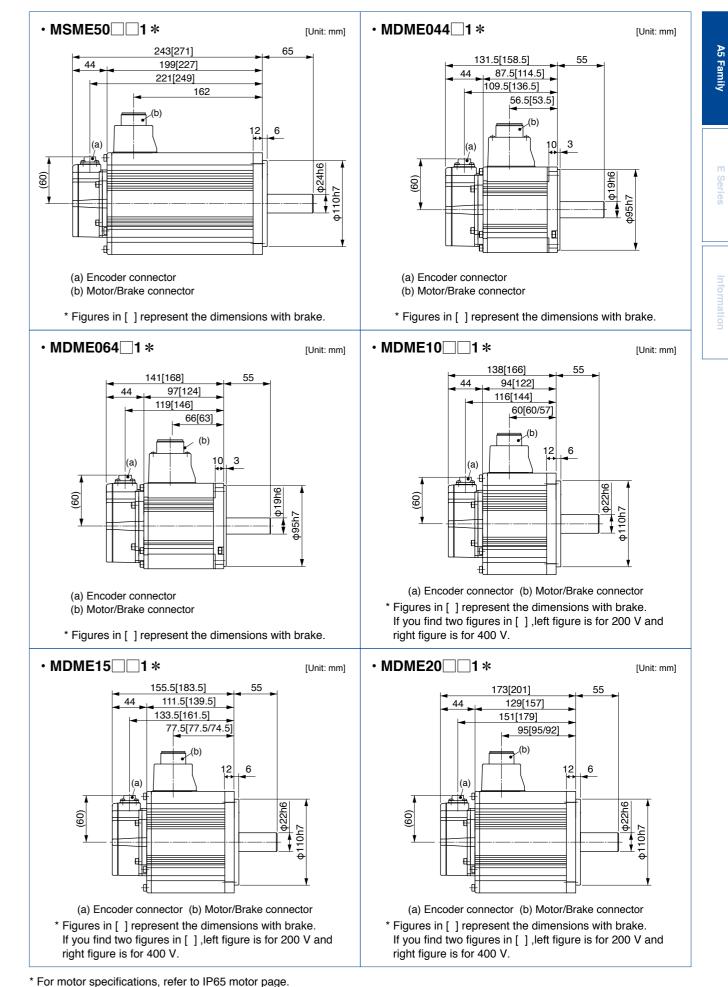
(a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.



(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.



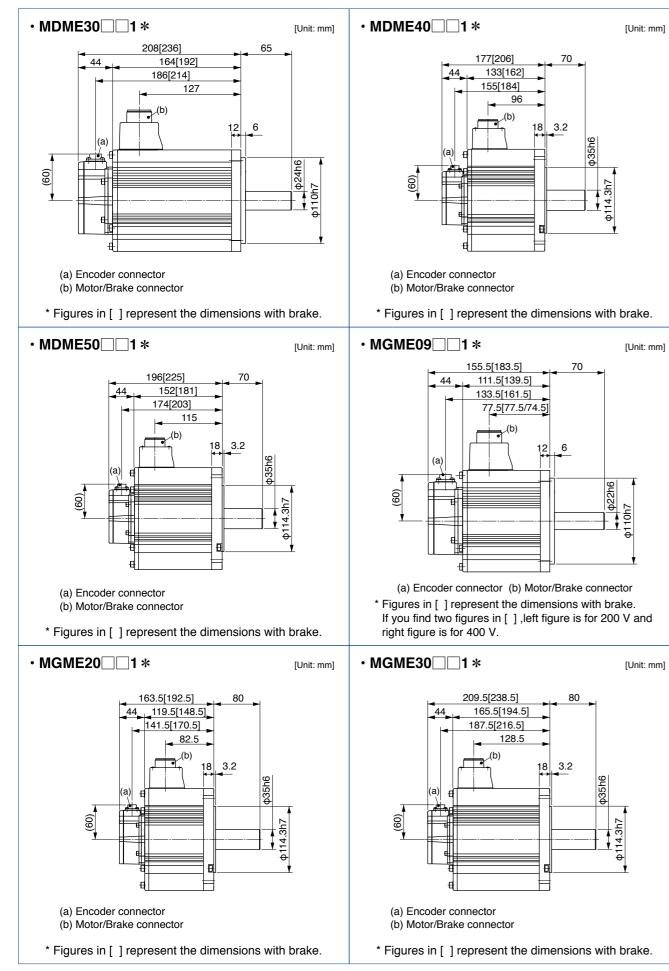
IP67 motor (MSME 200 V/ 400 V type) MDME 200 V/ 400 V type)



A5 Family **Dimensions**

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 *

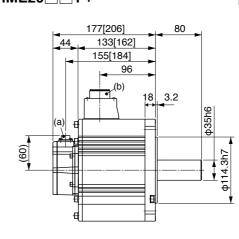


Sh6

18

70

12 6

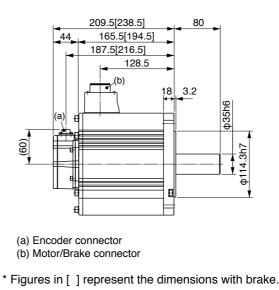


(a) Encoder connector (b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

• MHME40 1 *





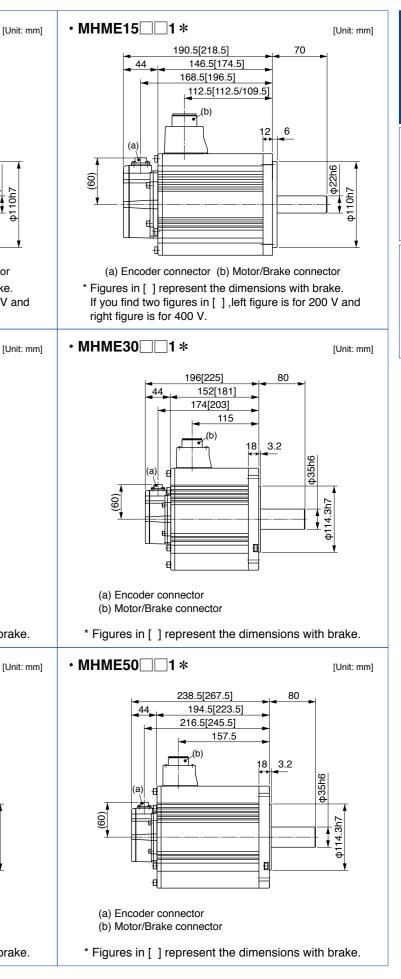
* For motor specifications, refer to IP65 motor page

* For motor specifications, refer to IP65 motor page.

IP67 motor (MHME 200 V/ 400 V type)

A5 Family **Dimensions**

A5 Family

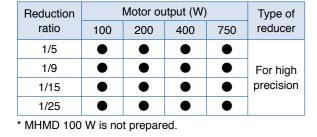


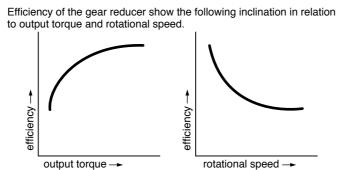
140

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 %					
Gear reducer	Lubrication	Grease lubrication					
Gearreducer	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 mo					
	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

		esigr																	Fa		-	
e Co	oml	oinat	tion	0	f the) [Dri	ver a	an	d	the	e N	lot	or	I	loto	rs v	vit	h G	ear	Re	ducer
													* For	com	oinati	on of e	lemen	ts of	mode	l numl	ber, ret	er to Index.
del I	Desi	ignati	on																			
		_			_		_	_			-		-	1	-							
	Μ	S	Μ		E		0	1	1		G	ì	3		1	Ν						
- 1																						
					Motor r	ate	d ou	itout														
mbol		Туре			Symbol	_		•						Mot	or ty	pes w	ith g	ear i	reduc	er		
	L	.ow inerti	a		01		100 W							Syn	nbol	Reduc		Mo	otor ou	itput (\	N)	Type of
SMD	100	W to 75	0 W		02	200 W								Cyn	ymbor	ratio) 1	00	200	400	750	reducer
SME	_	ow inerti			04	400 W							<u> </u>	N	1/5			•	•	•	-	
		W to 75			08	750 W		o W						2		1/9			•	•	•	For high precision
IMD		ligh inerti W to 75													N	1/15	-		•	•	•	precision
					Voltage	sp	ecif	ications	;						4N 1/25 ● ● ● MHMD 100 W is not prepared.							
					Symbol	F	Rated	output						^ IVIF	IND	100 W	is no	pre	pared	-		
					1		10	0 V						— I	Moto	Aotor structure						
					2		200 V					[Shaft	Н	lolding	g brak	е			
Det					_										Sym	bol K	ey wa	/ wi	thout	with	۱	
		coder sp					-	1.11							3		•		•			
	mbol	Forn		Pu	Ise coun	ItS		solution		Wire	e				4		•			•		
	G	Increm			20-bit	_	1	1048576	_	5				L								
	S .	Abso			17-bit			131072		7												
* S:	can be	e used in	increm	enta	al.																	

A5 Family

ode	el De	esia	natio	on/									A 5	Fa	mil	у	
		•		of the	Dr	iver a	and	the	e M	ot	or M	lotors	wit	h G	ear	Re	duce
lada		ianot	ion						*	For	combinati	on of elem	ents o	f mode	l numt	oer, ret	fer to Inde
loae	l Des	ignau	ION														
	Μ	S	Μ	Ε	0	1	1	G	ì	3	1	Ν					
				Motor ra	ated o	outout											
Symbo	ol	Туре				ifications					Motor ty	pes with	gear	reduc	er		
MSMI	<u> </u>	.ow inert	ia	01							Symbol	Reduction	N	lotor ou	itput (V	V)	Type of
NISINI	100) W to 75	50 W	02	200 W						,	ratio	100	200	400	750	reducer
MSM		ow inert		04	400 W						1N	1/5	•	•	•	•	-
) W to 75		08	750 W						2N	1/9	•	•	•	•	For high precisior
MHM)	ligh iner W to 75									3N	1/15	•	•	•		precision
				Voltage	Voltage specifications						4N	1/25					
				Symbol	Rate	ed output						100 W is r	not pre	epared			
				1	1	00 V			Motor st			or structu	structure				
				2	2	00 V						Sha	ft I	Holding	g brak	е	
_											Sym	bol Key v	vay w	/ithout	with	1	
	lotary er		•								3			•			
-	Symbol	Forr		Pulse count	ts R	esolution	-	lire			4	•					
	G	Increm		20-bit		1048576		5			L				-		
L	S	Abso	olute	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	MSME041N MSMD041N	MCDHT3120 MCDKT3120	MSME042 N MSMD042 N	MBDHT2510 MBDKT2510				
400 W		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".

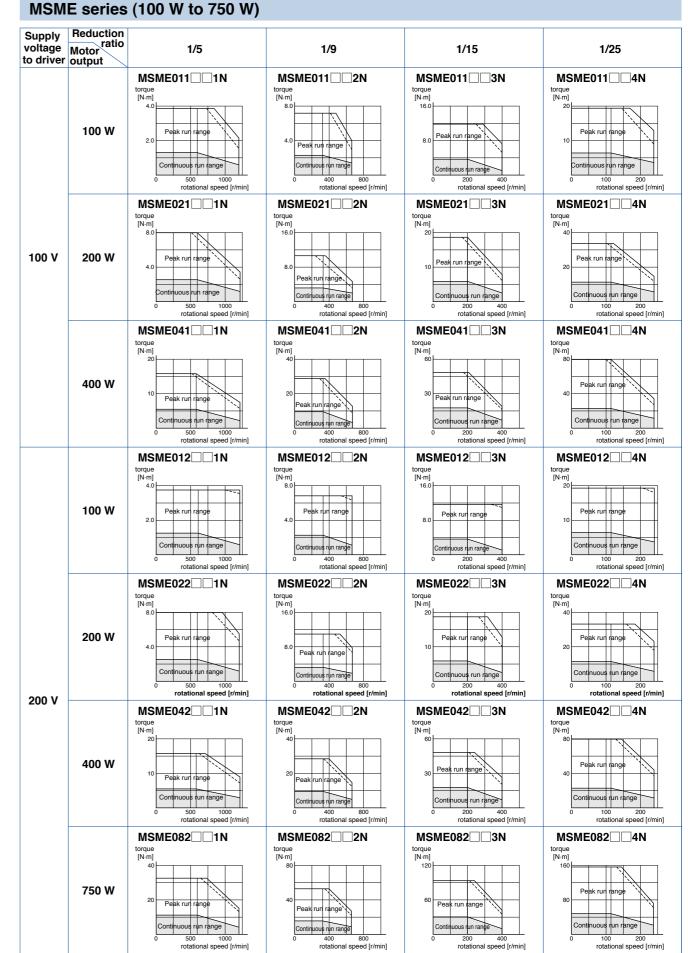
Motors with Gear Reducer

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	, , , , , , , , , , , , , , , , , , ,		ISS	Permissible radial load	Permissible thrust load
		(W)		(W)	(r/min)	(r/min)	(N∙m)	(N.m)	w/o brake J(×10 ^{-/}	w/ brake	w/o brake (k		(N)	(N)
	MSME01 1N	(\vv)	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 3N	750	1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082 . 4N		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01 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 🗌 🗌 4N		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
S	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".

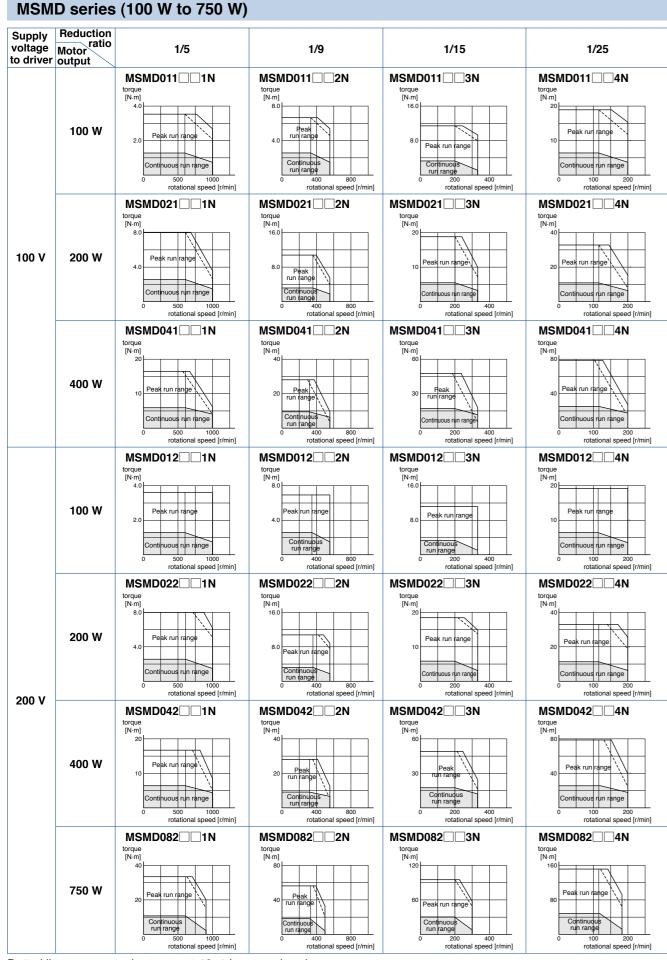


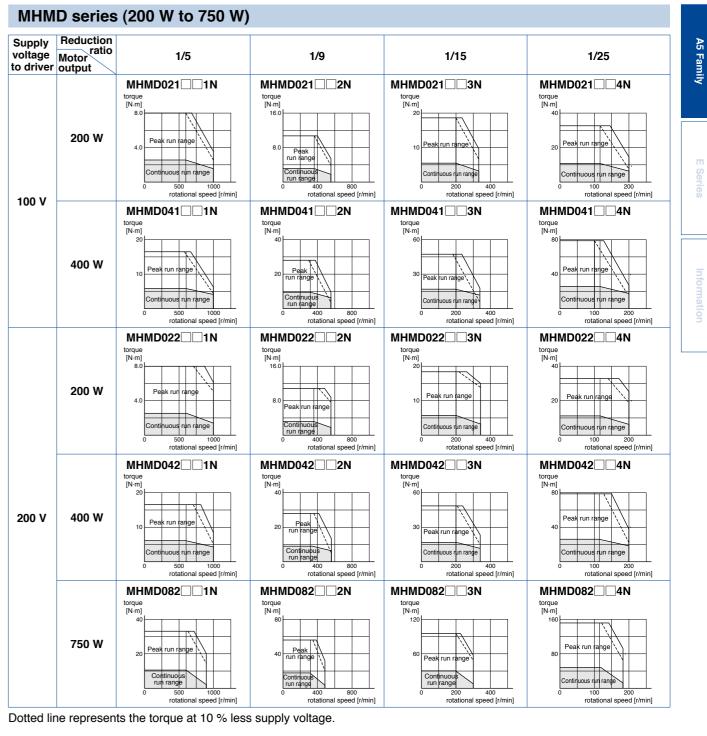
Dotted line represents the torque at 10 % less supply voltage.

A5 Family Motors with Gear Reducer

Motors with Gear Reducer

Torque Characteristics of Motor

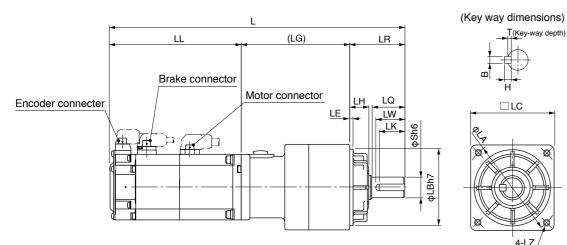




Dotted line represents the torque at 10 % less supply voltage.

Dimensions of Motor Motors with Gear Reducer

MSME series

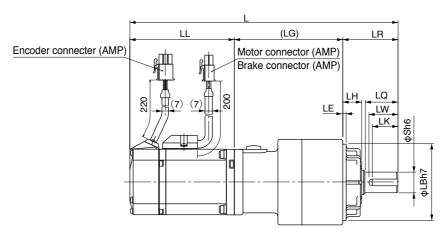


* The figure represents the dimensions with brake.

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		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.0		4x4x16	2.5
	100		221.5	122						. –		12					
MSME01		1/15	202	92										78			
	-		232	122								M6					
MSME01 4N		1/25	234	92	50	30	78	70	90	19	17	Depth	26	92		6×6×22	3.5
			264	122								20 M5					
MSME02		1/5	184	79.5	32	20	52	50	60	12	10	Depth	18	72.5		4×4×16	2.5
			220.5	116								12					
MSME02 2N		1/9	219 255.5	79.5 116										89.5	3		
	200		200.0 229.5	79.5													
MSME02		1/15	229.5	116													
	-		229.5	79.5										100			
MSME02		1/25	266	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		1/9	275	135.5													
	400	4/45	249	99										100			
MSME04		1/15	285.5	135.5										100			
MSME04]	1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4
		1/25	300.5	135.5	01	40	90	90	115	24	10	Depth 20	35	104	5	6X7X30	4
MSME082		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	291.7	148.2	50	30	70	70	90	19	17	20	20	93.5	3	0X0X22	3.5
MSME082 2N		1/9	270.7	112.2										97.5			
	750	1/5	306.7	148.2										57.5			
MSME082 3N		1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4
			319.2	148.2								20		110	Ĵ	0	·
MSME082 4N		1/25	283.2	112.2													
· · · · · · · · ·		-	319.2	148.2													

[Unit: mm]

MSMD series

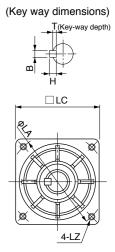


* The figure represents the dimensions without brake.

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 2N		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	01		01					12					2.0
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		255.5	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	-10	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	/0	30	15		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										07.0			
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

[Unit: mm]



Information

A5 Family

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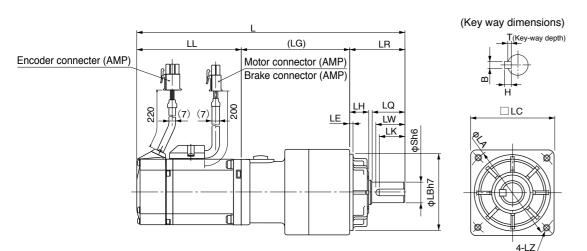
Series

Upper column: without brake

Lower column: with brake

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
MHMD02		1/9	238.5	99										89.5	1		
	200	1/9	275	135.5										89.5			
MHMD02	200	1/15	249	99													
		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			6×6×22	3.5
MHMD04		1/5	258	118.5	50	30	70	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			
			305	155										100			
MHMD04		1/25	283.5	118.5	61	40	98	90	115	24	18	M8	35	104	5	8×7×30	4
		1/25	320	155	01	40	98	90	115	24	18	Depth 20	35	104	э	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			1		
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		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 P.155 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 P.173 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 MGME 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.

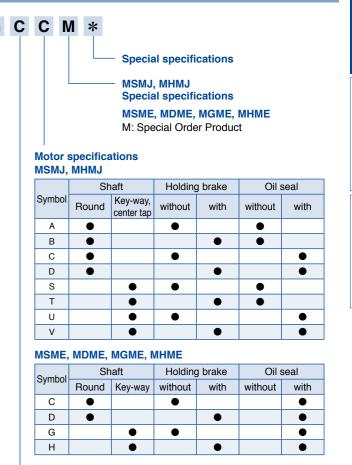
Model Designation

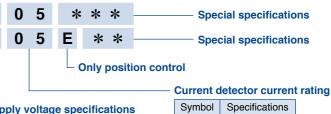
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ervo M	lotor															
		М	S	М	F	5	0	2	G	С	CN	/ *				
					-	•				Ŭ						
													- Specia	al specifi	cation	IS
						1							- MSMJ	, MHMJ		
Symbol		Тур												al specifi	cation	IS
MSMJ MSME	Low inerti															E, MHME
MDME	Low inerti Middle ine												M: Spe	ecial Orde	er Proc	luct
MGME	High inert										Motor	specifica	ations			
MHMJ	High inert	ia (200	W to 7	50 W)						MSMJ,		110113			
MHME	High inert	ia (1.0 l	kW to 5	5.0 kV	V)							Sh	naft	Holding	g brake	Oil
otor rat	ed output										Symbol	Round	Key-way,	without	with	without
Symbol	Rated out										A	•	center tap	•		•
02	200 W	_				ge sp	ecific	atio	ns		В	•				•
04	400 W			2	2: 200	0 V					С	•		•		
08	750 W	'									D	•			•	
09	0.9 kW	1									S		•	•		•
10	1.0 kW	1									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	Holding	g brake	Oil
50	5.0 kW										Symbol	Round	Key-way	without	with	
otarv er	coder spe	ecifica	tions								С	•		•		
Symbol	Format		ilse cou	Ints	Reso	lution	Wi	res			D	•				
G	Increment	-	20-bit								G		•	•		
S S: can b	Absolute e used in in		17-bit			8576		5 7		Desi	H ign orde	r	•		•	
S: can b	e used in i		17-bit								H ign orde	r	•	cification	_	
S: can b Caution lease a ne moto	e used in in n s> void the m r to be dis	ncreme notor, c	17-bit ental. or equi	pme	13 nt co	1072 ntaini	-			Syr	H ign orde nbol C IF	65 motor	•	cification	3	IME)
S: can b Caution lease a ne moto	e used in in n s> void the m r to be dis hrough Ja	ncreme notor, c	17-bit ental. or equi	pme	13 nt co	1072 ntaini	-			Syr	H ign orde nbol C IF	65 motor	Spe (MSME, M	cification	3	łME)
S: can b Caution lease a ne moto egions t rvo D	e used in in ns> void the m r to be dis hrough Ja river Position, To	notor, c tribute pan.	17-bit ental. or equi d to Ja	pmel	13 nt co	ntaini ontaini other	ng		5	Syr	H ign orde nbol C IF	65 motor	Spe (MSME, M (MSMJ, M	cification	s ME, MH	IME)
S: can b Caution lease a le moto egions t rvo D peed, P	e used in in ns> void the m r to be dis hrough Ja river	ncreme notor, c tribute pan.	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7		Syr	H ign orde nbol C IF 1 IF	*65 motor *65 motor	Spe (MSME, M (MSMJ, M	cification	Spec	al specific
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty	ncreme notor, c tribute pan.	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini ontaini other	ng	7		Syr	H ign orde nbol C IF 1 IF	265 motor 265 motor * * *	Spe (MSME, M (MSMJ, M	cifications	Spec	
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition Frame	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol *	ncreme notor, c tribute pan.	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7		Syr	H ign orde nbol C IF 1 IF	265 motor 265 motor * * *	Spe (MSME, M (MSMJ, M	cifications DME, MG HMJ)	Spec	al specific
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition Frame Symbo	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol *	ncreme notor, c tribute pan.	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7	5	Syr 0 0	H ign orde nbol C IF 1 IF 5 E	* * - Only p	Spe (MSME, M (MSMJ, M *	control	Spec Spec	ial specific ial specific etector cui
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition Frame	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * i Fran Fran	ncreme notor, c tribute pan. forque, rpe me ne A	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7	5 Su	Syr 0 0	H ign orde nbol C IF 1 IF 5 F 5 F 5 F	* * * Only pecifica	Spe (MSME, M (MSMJ, M *	control	Spec Spec Spec	al specific al specific etector cui Specificatio
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition Frame Symbo MAD	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol *	ncreme notor, c tribute pan. orque, rpe me ne A ne B	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7	5 Su	Syr 0 0 pply v ymbol	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F	* * * Only pecification	Spe (MSME, M (MSMJ, M *	control	Spec Spec Spec rent de mbol	al specific al specific etector cui Specificatio 7.5 A
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition Frame Symbo MAD MBD	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * of Fran Fran Fran	ncreme notor, c tribute pan. orque, rpe me ne A ne B ne C	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7	5 Su	O O O pply v ymbol 3	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F 5 F 5	* * * Only pecification e, 200 V	Spe (MSME, M (MSMJ, M * * position o	control	Spec Spec Spec	al specific al specific etector cui Specificatio
S: can b Caution lease a lease a le	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * of Fran Fran Fran Fran	ncreme notor, c tribute pan. orque, rpe me ne A ne B ne C ne D	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7	5 Su	Syr 0 0 pply v ymbol	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F 5 F 5	* * * Only pecification	Spe (MSME, M (MSMJ, M * * position o	control	Spec Spec Spec Spec rent de nbol)7	al specific al specific etector cui Specificatio 7.5 A 10 A
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition Frame Symbo MAD MBD MCD	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * Fram Fram Fram Fram Fram	ncreme notor, c tribute pan. orque, rpe me ne A ne B ne C ne D ne E	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7	5 Su	Syr 0 0 0 ypply v ymbol 3 5	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F 5 F 5	* * * Only pecification e, 200 V 3-phase,	Spe (MSME, M (MSMJ, M * * position o	control	Spec Spec Spec Spec nbol 07	al specific al specific specificatio 7.5 A 10 A 20 A
S: can b Caution lease a ne moto egions t rvo D peed, F ull-clos osition Frame Symbol MAD MBD MCD MDD MED	e used in in hs> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol *	ncreme notor, c tribute pan. orque, rpe me ne A ne B ne C ne D ne E ne F	17-bit ental. or equi d to Ja	pmer apan	13 nt co , or c	ntaini other	ng	7	5 Su S	Syr 0 0 0 ypply v ymbol 3 5	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F 5 F 5	* * * Only pecification e, 200 V 3-phase,	Spe (MSME, M (MSMJ, M * * * oosition o tions ns 200 V	control	Spec Spec Spec Spec nbol 20 30	al specific al specific etector cur Specificatio 7.5 A 10 A 20 A 30 A
S: can b Caution lease a ne moto egions t rvo D peed, F ull-clos osition Frame Symbol MAD MBD MCD MDD MED	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * fram Fram Fram Fram Fram Fram	ncreme notor, c tribute pan. orque, rpe me ne A ne B ne C ne C ne C ne E ne F	17-bit ental. or equi d to Ja	pme apan	13 nt co , or c	ntaini other	ng	7	5 Su S	Syr O O O ymbol 3 5 wer de	H ign orde nbol C IF 1 IF 5 E 5 E 5 E 5 E 5 E 5 Sp 3-phas 5 Single 2 Currer	* * - Only p - Only p - Conly	Spe (MSME, M (MSMJ, M * * * oosition o tions ns 200 V	control	Spec Spec Spec Spec 100 20 30 40 34 30	al specific al specific etector cur Specificatio 7.5 A 10 A 20 A 30 A 40 A 64 A 90 A
S: can b Caution lease a ne moto egions t rvo D peed, F ull-clos osition Frame Symbol MAD MBD MCD MDD MED	e used in in hs> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol *	ncreme notor, c tribute pan. orque, orque, me ne A ne B ne C ne D ne E ne F Velocit	17-bit ental. or equi d to Ja	pme apan	13 nt co , or c	intaini other K K	ng T T	7	5 Su S	Syr O O O Pply v ymbol 3 5 wer da ymbol T1 T2	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F 5 F 5	* * * Conly p Conly	Spe (MSME, M (MSMJ, M * * * oosition o tions ns 200 V	control	Spec Spec Spec Spec 20 30 40 54	al specific al specific specificatio 7.5 A 10 A 20 A 30 A 40 A 64 A
S: can b Caution lease a le moto egions t rvo D peed, F ull-clos osition Frame Symbo MAD MBD MCD MDD MED	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * i Fran Fran Fran Fran Fran Series Symbol	ncreme notor, c tribute pan. orque, pe me ne A ne B ne C ne D ne E ne F Velocit To Full-C	17-bit ental. or equi d to Ja M M	pmelapan	13 nt co , or c	tion cor type	ng T T	7	5 Su S	Syr O O O O O O O O O O O O O O O O O O O	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F 5 F 5	* * * Conly p Conly	Spe (MSME, M (MSMJ, M * * * oosition o tions ns 200 V	control	Spec Spec Spec Spec 100 20 30 40 34 30	al specific al specific etector cur Specificatio 7.5 A 10 A 20 A 30 A 40 A 64 A 90 A
S: can b Caution lease a ne moto egions t rvo D peed, F ull-clos osition Frame Symbol MAD MBD MCD MDD MED	e used in in hs> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * of Fran Fran Fran Fran Fran Series	ncreme notor, c tribute pan. orque, pe me ne A ne B ne C ne D ne E ne F Velocit To Full-C	17-bit ental. or equi d to Ja M M	pmelapan	13 nt co , or c	intaini other K K	ng T T	7	5 Su S	Syr O O O O O O O O O O O O O O O O O O O	H ign orde nbol C IF 1 IF 5 E 5 E 5 E 5 E 5 E 5 E 5 C 5 E 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C	265 motor 261 motor 262 motor 263 motor 264 motor 264 motor 265 motor 264 motor 264 motor 265 motor 264 motor 265 motor 264 motor 264 motor 264 motor 265 motor 264 motor 264 motor 265 motor 264 motor 264 motor 264 motor 265 motor 264	Spe (MSME, M (MSMJ, M * * * oosition o tions ns 200 V	control	Spec Spec Spec Spec 100 20 30 40 34 30	al specific al specific etector cur Specificatio 7.5 A 10 A 20 A 30 A 40 A 64 A 90 A
S: can b Caution lease a ne moto egions t rvo D speed, P ull-clos vosition Frame Symbol MAD MBD MCD MDD MED	e used in in ns> void the m r to be dis hrough Ja river Position, Tr ed type control ty symbol * i Fran Fran Fran Fran Fran Series Symbol	ncreme notor, c tribute pan. orque, pe me ne A ne B ne C ne D ne E ne F Velocit To Full-C	17-bit ental. or equi d to Ja M M	pmelapan	13 nt co , or c	tion cor type	ng T T	7	5 Su S	Syr O O O O O O O O O O O O O O O O O O O	H ign orde nbol C IF 1 IF 5 F 5 F 5 F 5 F 5 F 5 F 5 F 5	* * * Conly p Conly	Spe (MSME, M (MSMJ, M * * * oosition o tions ns 200 V	control	Spec Spec Spec Spec 100 20 30 40 34 30	al specific al specific etector cur Specificatio 7.5 A 10 A 20 A 30 A 40 A 64 A 90 A

A5 Family **Special Order Product**

A5 Family

* For combination of elements of model number, refe r 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 parts					 Options 		
					A5I series	A5IIE series		capacity	Encode	er Cable	Mot	otor Cable	Brake					Title	Part No.
Motor series	Power	Output	Part No.	Rating/ Spec.	Part No. /Speed, Position,	Part No. (Position control)	Frame	(at rated)	20-bit	17-bit			Cable	External Regenerative	Reactor	Noise Filter	Interface Cable		DV0P4360
wotor series	supply	(W)	Note) 1	(page)	Torque, Full-Closed type	(type)	Tame	load /	20-Dit Incremental		without Brake			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				Interface Conve	ersion Cable	DV0P4130
MSMJ		200	MSMJ022 🗌 1 🗴	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5							DV0P227	DV0P4170			DV0P4131
/Leadwire	١								MFECA	MFECA	м	MFMCA	MFMCB	DV0P4283	DV0P220	DV0PM20042			DV0P4132
type) Single	400	MSMJ042 🗌 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	0**0EAE	0**	**0EED	0**0GET	DV0F4203	DV0P228	D VOI MILOO IL	Connector Kit	A-frame Single row type	DV0PM20032
3000 r/mi	phase/	750	MSMJ082 🗌 1 ∗	157	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042		D-frame Double row	DV0PM20033
	3-phase 200 V	1000	MSME102 C * M	158	MDDKT5540	MDDKT5540E		Approx. 1.8							DV0P228		Connection	E-frame	DV0PM20044
		1000		130	WDDI(15540	MDDR13340E	D-frame	Approx. 1.0				_		DV0P4284	DV0P222	DV0P4220	Connector Kit	A-frame to D-frame	DV0PM20044 DV0PM20034
MONE		1500	MSME152 🗌 C * M	159	MDDKT5540	MDDKT5540E		Approx. 2.3			MFMCD 0**2ECE	-			DV0PM20047		for Motor Connection	E-frame	DV0PM20046
MSME											0 2202			DV0P4285	DV0P222		Connector Kit		
3000 r/mir	n	2000	MSME202 C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3					-	Note) 5	DV0P223	DV0PM20043	for Regenerative Resistor	E-frame	DV0PM20045
	3-phase	3000	MSME302 🗌 C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5							DV0P224		116313101		DV0P4290
	200 V	4000	MSME402 🗌 C * M	162	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA	-		DV0P4285	DV0P225	DV0P3410			DV0P4310
			MSME502 C * M		MFDKTB3A2	MFDKTB3A2E	-				0**3EC1	CT 0**3FC	T	×2 in parallel			Connector Kit f		DV0P4320
		5000		163	WFDK I D3A2	MFDKID3A2E		Approx. 7.5							Note) 6		Motor/Encoder	Connection	DV0P4330
	Single	1000	MDME102 C * M	164	MDDKT3530	MDDKT3530E		Approx. 1.8							DV0P228				DV0P4340 DV0P4380
	phase/ 3-phase						D-frame		MFECA	MFECA	MFMCD		A	DV0P4284	DV0P222 DV0PM20047	DV0P4220		RS485, RS232	DV0PM20024
	200 V	1500	MDME152 🗌 C * M	165	MDDKT5540	MDDKT5540E		Approx. 2.3	0**0ESD	0**0ESE	0**2ECE				DV0P222			Safety	DV0PM20025
MDME		2000	MDME202 🗌 C * M	166	MEDKT7364	MEDKT7364E	F.frame	Approx 3.3						DV0P4285	DV0P223	DV0PM20043	Connector Kit	Interface	DV0P4350
2000 r/mir	ı						L-Itanic							Note) 5				External Scale	DV0PM20026
	3-phase	3000	MDME302 C * M	167	MFDKTA390	MFDKTA390E	-	Approx. 4.5						D) (0D (005	DV0P224	_		Encoder Analog Monitor Signal	DV0PM20010
	200 V	4000	MDME402 C * M	168	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA 0**3EC1			DV0P4285 ×2 in parallel	DV0P225	DV0P3410	Battery For Abs	<u> </u>	DV0P2990
		5000	MDME502 🗌 C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5							Note) 6		Battery Box No	te) 7	DV0P4430
	Single																	A-frame	DV0PM20027
MGME	phase/ 3-phase	900	MGME092 🗌 C * M	170	MDDKT5540	MDDKT5540E	D-frame	Approx. 1.8			MFMCD 0**2ECE			DV0P4284	DV0P228	DV0P4220	Mounting Bracket	B-frame	DV0PM20028
Low speed High torqu											0 2202	210	,		DV0P221		Diacket	C-frame D-frame	DV0PM20029 DV0PM20030
type	/ 3-phase	2000	MGME202 C * M	171	MFDKTA390	MFDKTA390E		Approx. 3.8			MFMCA		4	DV0P4285	DV0P223			Diramo	MFECA0**0EAD
1000 r/mir		3000	MGME302 🗌 C * M	172	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 4.5			0**3EC1			×2 in parallel	DV0P224	DV0P3410		without Battery Box	MFECA0**0EAM
															DV0P227		Encoder Cable		MFECA0**0ESE
MHMJ		200	MHMJ022 🗌 1 🜸	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5							DV0P220	DV0P4170		with Battery Box Note) 7	MFECA0**0EAE
Leadwire		400	MHMJ042 🗌 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	MFECA	MFECA 0**0EAE		MFMCA **0EED	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM20042			MFECA0**0ESE
3000 r/mi	Single phase/	750	MHMJ082 🗌 1 *	175	MCDKT3520	MODIZTOFOOF				Note) 4	Ŭ	ULLD	0 00E1		DV0P220	DV0PM20042			MFMCD0**2EC
	3-phase	750		175	MCDR13520	MODK13520E	C-frame	Approx. 1.3								DV0PIM20042	Motor Cable	without Brake	MFMCE0**2EC
	200 V	1000	MHME102 🗌 C * M	176	MDDKT3530	MDDKT3530E		Approx. 1.8							DV0P228		WOLDI Cable		MFMCA0**3EC
							D-frame				MFMCD 0**2ECE	D MFMC		DV0P4284	DV0P222 DV0PM20047	DV0P4220		with Brake	MFMCA0**2FC
		1500	MHME152 🗌 C * M	177	MDDKT5540	MDDKT5540E		Approx. 2.3					_		DV0P222		Brake Cable		MFMCA0**3FC
MHME		2000	MHME202	178	MEDKT7364	MEDKT7364E	E íromo	Annual 2.2	MFECA	MFECA	MFMCE	E MFMC	Ξ	DV0P4285	DV0P223	DV0PM20043		A-frame	
2000 r/mir	ı	2000					L-Irame	Approx. 3.3	0**0ESD	0**0ESE	0**2ECE	D 0**2FC	D —	Note) 5		DV0F10120043		B-frame	DV0P4283
	3-phase	3000	MHME302 🗌 C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5							DV0P224		External Regenerative	C-frame	
	200 V	4000	MHME402 C * M	180	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMCA 0**3EC1	-		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	Resistor	D-frame	DV0P4284
		5000	MHME502 □ C * M	181	MFDKTB3A2	MFDKTB3A2E	-	Approx. 7.5			0 3201							E-frame F-frame	DV0P4285
												- 51			Note) 6			DV0P220, DV0P221.	DV0P222,
· ·	1 Rotary encoder specifications: Motor specification: * (refer to P.152) 2 Because A5IE series drivers (dedicated for position control) do not support the 17-bit absolute specification, Note) 7 Please note that a battery is not supplied together absolute encoder cable (with battery box).							her with 17-bit	Reactor	DV0P223, DV0P224 DV0P227, DV0P228	DV0P225,								
,			ype can be used in c		-			solute sp	ecinication,	,				/ part number "l		narately		DV0P4170, DV0PM2	
-			05: 5 m, 10: 10 m, 20			m: MFECA0030	EAM)						, 2aiioi j			,	Noise Filter	DV0P4220, DV0PM2	
a) 4 Whon	you use a		osolute encoder as an			please use the e	encode	er cable M	FECA0**0E	EAD.								DV0P3410 Single phase	DV0P4190
,																			
e) 5 Other			, and refer to P.210 fo red by the user.	r details	S.												Surge Absorber	3-phase	DV0P1450

<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

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	-	-		
Angliaghte	Model	A5I series	MADK	T1507		
Applicable driver *2	No.	A5IIE series	MADKT1507E	_		
unver	Fr	ame symbol	A-fr	ame		
Power supply	y capacit	y (kVA)	0	.5		
Rated output		(W)	20	00		
Rated torque	•	(N·m)	0.	64		
Momentary N	/lax. peal	k torque (N·m)	1.	91		
Rated currer	t	(A(rms))	1	.6		
Max. current		(A(o-p))	6	.9		
Regenerative	brake	Without option	No lim	it Note)2		
frequency (time	s/min) Note)1	DV0P4283	No lim	it Note)2		
Rated rotatio	nal spee	d (r/min)	30	00		
Max. rotation	al speed	(r/min)	50	00		
Moment of ir	ertia	Without brake	0.	14		
of rotor (×10	⁻⁴ kg·m²)	With brake	0.	16		
Recommend ratio of the lo			30 times or less			
Rotary encod	der speci	fications Note)5	20-bit 17-bit Incremental 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
assembly	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

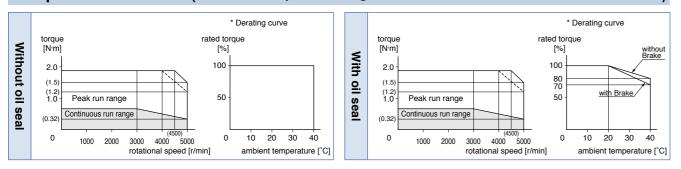
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.42.

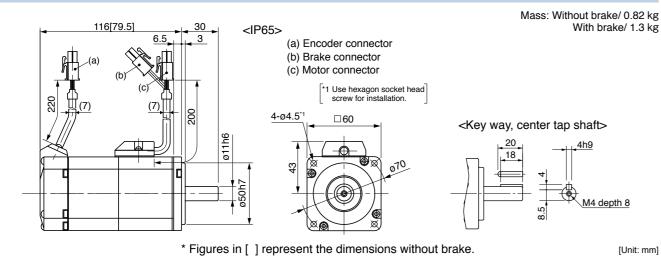
*1 Motor specifications:

*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.

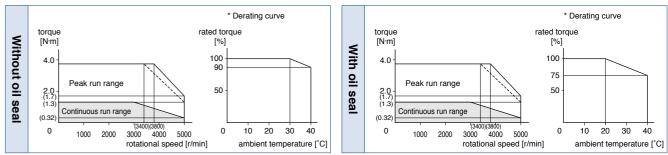
Special Order Product

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

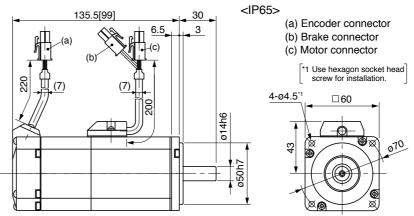
Specifications

•									
			AC2	00 V		specifications (For details ake will be released when it is e	. ,		
Motor model		IP65	MSMJ042G1	MSMJ042S1		use this for braking the motor in			
*1		IP67	_	-	Static fri	ction torque (N·m)	1.27 or more		
Annlinghle	Model A5I series		MBDK	T2510	Engagin	g time (ms)	50 or less		
Applicable driver *2	. NO. A5ILE series		MBDKT2510E	-	Releasir	15 or less			
	Fi	ame symbol	B-fr	ame	Exciting	current (DC) (A)	0.36		
Power supply	capacit	y (kVA)	0	.9	Releasir	ng voltage (DC) (V)	1 or more		
Rated output		(W)	40	00	Excitina	voltage (DC) (V)	24±1.2		
Rated torque		(N·m)	1	.3					
Momentary N	lax. pea	k torque (N·m)	3	.8	 Permi 	ssible load (For details, refe	er to P.183)		
Rated curren	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 lim	it Note)2	assembly	Thrust load B-direction (N)	196		
frequency (times	/min) Note)1	DV0P4283	No lim	it Note)2	During	Radial load P-direction (N)	245		
Rated rotatio	nal spee	d (r/min)	30	00	During operation	()	98		
Max. rotation	al speed	(r/min)	50	00	operation	Thrust load A, B-direction (N)	98		
Moment of in	ertia	Without brake	0.	26		ails of Note 1 to Note 5, refer t	o P.182, P.183.		
of rotor (×10	^₄ kg·m²)	With brake	0.	28		ions of Driver, refer to P.42.			
	Recommended moment of inertia ratio of the load and the rotor Note)		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	U U	ation has "E" is "Position con of model designation, refer to	21			
I	Resolutio	n per single turn	1048576 131072						

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



Dimensions



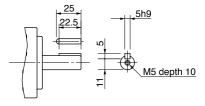
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

<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.	A5IIE series	MCDKT3520E	-				
anver	Fr	ame symbol	C-fr	ame				
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))	17.0					
Regenerative	brake	Without option	No limi	t Note)2				
frequency (times	s/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	20-bit Incremental	17-bit 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

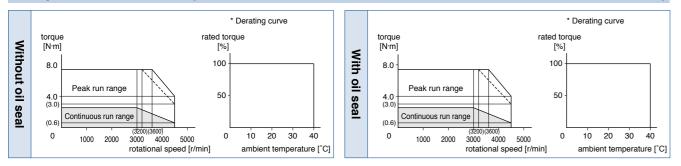
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

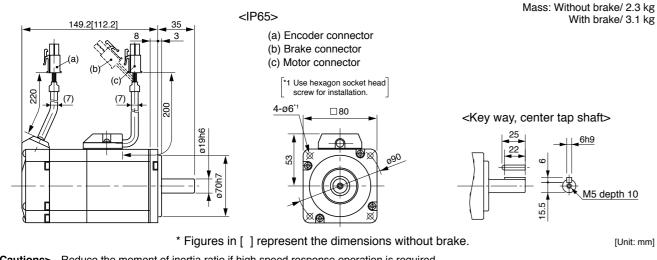
*1 Motor specifications:

*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



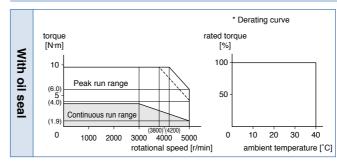
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

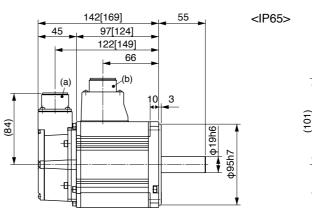
200 V MSME 1.0 kW [Low inertia, Middle capacity]

Specifications

-							
		AC200 V		 Brake specifications (For details, refer to P.183 /This brake will be released when it is energized.) 			
Motor model		IP65	MSME102GC	MSME102SC M	Do not use this for braking the motor in motion.		
*1		IP67	-	_	 Static friction torque (N·m) 		7.8 or more
Annlinghle	Model	A5I series	MDDK	T5540	Engagin	g time (ms)	50 or less
Applicable driver *2	No.	A5IE 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	capacit	y (kVA)	1.	.8	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	10	1000		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	orake	Without option	No limi	t Note)2	assembly	Thrust load B-direction (N)	686
frequency (times/	min) Note)1	DV0P4284	No limit Note)2				490
Rated rotation	al spee	d (r/min)	3000		During	Radial load P-direction (N)	
Max. rotationa	l speed	(r/min)	5000		operation	Thrust load A, B-direction (N)	196
Moment of ine	rtia	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



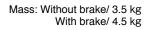
(a) Encoder connector (b) Motor/Brake connector

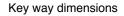
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. 158

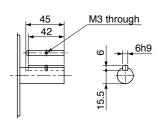
A5 Family **Motor Specifications**

Please contact us for more information

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







100 4-Φ9

* Figures in [] represent the dimensions with brake.

A5 Family

Motor Specifications

Special Order Product

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

Specifications

			AC200 V			
		IP65		MSME152GC	MSME152SC M	
Motor model *1		IP67		-	-	
A	Model	A5I series		MDDK	T5540	
Applicable driver *2	No.	A5IE series		MDDKT5540E	-	
anver	Fr	ame symbo	I	D-fra	ame	
Power supply	capacit	y (kVA)	2	.3	
Rated output			(W)	15	00	
Rated torque		(N·m)	4.	77	
Momentary Ma	ax. peal	k torque (N·m)	14.3		
Rated current		(A(I	rms))	8.2		
Max. current		(A(o-p))	35		
Regenerative b	orake	Without op	otion	No limit Note)2		
frequency (times/	min) Note)1	DV0P4284		No limit Note)2		
Rated rotation	al spee	d (r.	/min)	3000		
Max. rotationa	l speed	(r.	/min)	5000		
Moment of ine	rtia	Without br	ake	2.84		
of rotor (×10 ⁻⁴	kg∙m²)	With bra	ke	3.17		
Recommended moment of inertia ratio of the load and the rotor Note)3				15 times	s or less	
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	Resolution per			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.

1 -	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

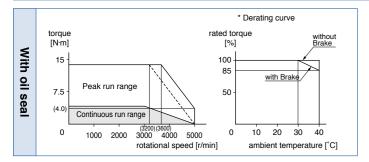
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

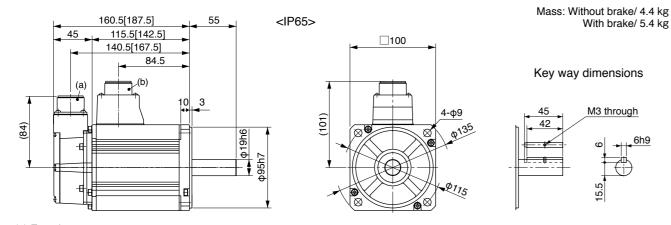
*1 Motor specifications:

*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.

[Unit: mm]

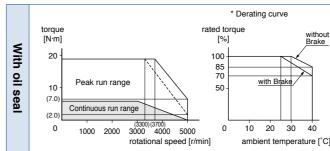
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

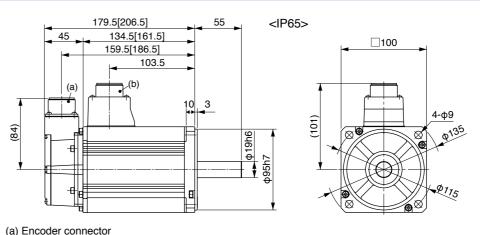
200 V MSME 2.0 kW [Low inertia, Middle capacity]

Specifications

			AC2	00 V		specifications (For details		
Motor model	IP65		MSME202GC M	MSME202SC M	(This brake will be released when it is energized.) Do not use this for braking the motor in motion.			
*1		IP67	_	_	Static friction torque (N·m)		7.8 or more	
Annilisable	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	
unver	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		Exciting	voltage (DC) (V)	24±2.4	
-	Rated torque (N·m)		6.:					
Momentary Ma	Momentary Max. peak torque (N·m)				• Permi	ssible load (For details, refe	er to P.183)	
Rated current		(A(rms))	11.3			Radial load P-direction (N)	980	
Max. current	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/	nin) Note)1	DV0P4285	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

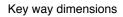
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. 160

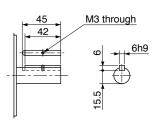
A5 Family **Motor Specifications**

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 model		IP65	MSME302GC	MSME302SC M	
		IP67	-	-	
Annelisseels	Model	A5I series	MFDK	TA390	
Applicable driver *2	No.	A5IIE series	MFDKTA390E	-	
differ	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	4	.5	
Rated output		(W)	30	00	
Rated torque		(N·m)	9.	55	
Momentary N	lax. peal	k torque (N·m)	28.6		
Rated current		(A(rms))	18.1		
Max. current		(A(o-p))	77		
Regenerative	brake	Without option	No limit Note)2		
frequency (times	/min) Note)1	DV0P4285×2	No limi	t Note)2	
Rated rotation	nal spee	d (r/min)	3000		
Max. rotation	al speed	(r/min)	5000		
Moment of ine	ertia	Without brake	6.	50	
of rotor (×10 ⁻⁴	¹ kg∙m²)	With brake	7.85		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
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)	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

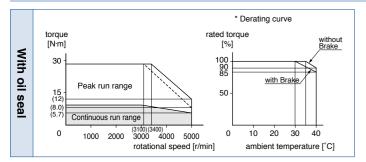
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

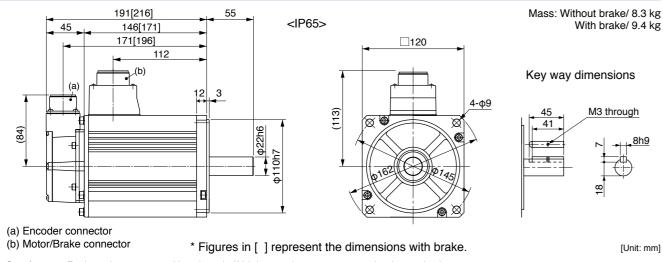
*1 Motor specifications:

*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



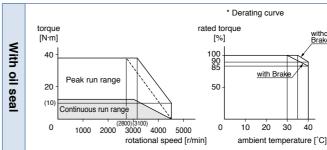
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

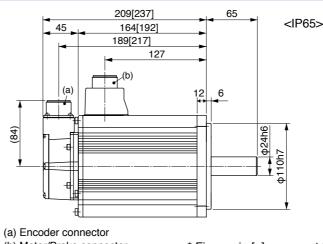
200 V MSME 4.0 kW [Low inertia, Middle capacity]

Specifications

		AC200 V		 Brake specifications (For details, refer to P.183 (This brake will be released when it is energized.) 				
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		
Angliashia	Model	A5I series	MFDK	TB3A2	Engagin	g time (ms)	110 or less	
Applicable driver *2	No.	A5IE series	MFDKTB3A2E	DKTB3A2E –		ng time (ms) Note)4	50 or less	
	Fr	ame symbol	F-fra	ame	Exciting	current (DC) (A)	0.90±10 %	
Power supply	capacity	y (kVA)	6	.0	Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)	40	00	Exciting voltage (DC) (V)		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	3	During	Thrust load A-direction (N)	588	
Regenerative b	rake	Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (times/r	nin) Note)1	DV0P4285×2	No lim	t 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 ($\times 10^{-4}$	kg∙m²)	With brake	14.2					
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		*1 Motor specifications: *2 The product that the end of driver model				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolutedesignation has "E" is "Position control type Detail of model designation, refer to P.152.		<i>,</i> ,			
R	esolutio	n per single turn	1048576	131072				



Dimensions



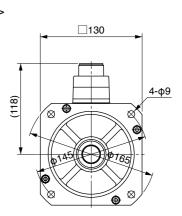
(b) Motor/Brake connector

<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

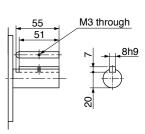
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



* Figures in [] represent the dimensions with brake.

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	
*1		IP67	-	-	
Annlinghle	Model	A5I series	MFDK	TB3A2	
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	-	
	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 M	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	35	57	
frequency (times	/min) Note)1	DV0P4285×2	No limi	t Note)2	
Rated rotation	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			s or less	
Rotary encod	Rotary encoder specifications Note)5			17-bit 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)	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

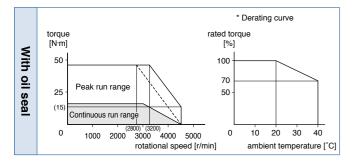
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

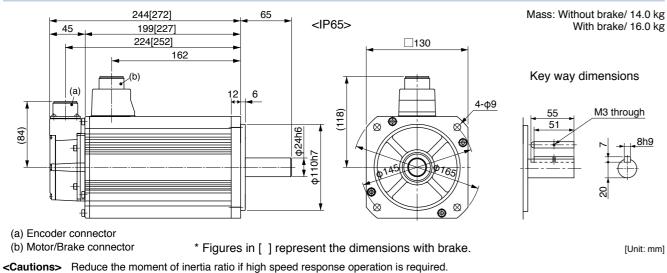
*1 Motor specifications:

*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



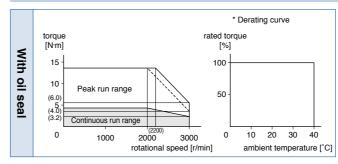
Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

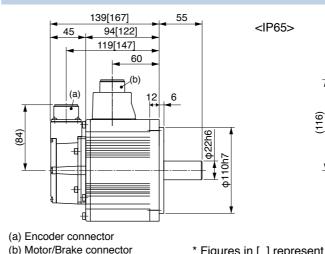
200 V MDME 1.0 kW [Middle inertia, Middle capacity]

Specifications

•						
					AC2	00 V
Matax			IP65		MDME102GC M	MDME102
Motor mod	1 CI *1		IP67		-	-
	Applicable Model No.		A5I series	;	MDDKT3530	
Applicable driver			A5IIE series		MDDKT3530E	_
unver		Fr	ame syml	ool	D-frame	
Power sup	ply	capacit	у	(kVA)	1	.8
Rated outp	out			(W)	10	00
Rated torq	ue			(N·m)	4.77	
Momentar	y Ma	ax. peal	k torque	(N·m)	14.3	
Rated curr	rent		(/	A(rms))	5.7	
Max. curre	ent		(A(o-p))	2	4
Regenerati	ve b	orake	Without option		No limit Note)2	
frequency (t	imes/r	nin) Note)1	DV0P4284		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		4.60	
of rotor (×	10-4	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 end	code	er speci	ifications Note)5		20-bit Incremental	17-t Absol
Resolution per single turn			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.

A5 Family **Motor Specifications**

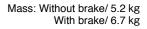
Please contact us for more information

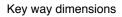
2SC M
bit lute
)72

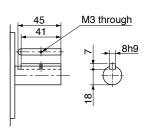
(Do not use this for braking the motor in motion.)				
Static friction torque (N·m) 4.9 or more				
Engaging time (ms) 80 or less				
Releasir	ng time (ms) Note)4	70 or le		
Exciting	current (DC) (A)	0.59±10		
Releasir	ng voltage (DC) (V)	2 or mo		
Exciting voltage (DC) (V) 24±2.4				
Exciting	voltage (DC) (V)	24±2.4		
	voltage (DC) (V) ssible load (For details, refe			
• Permi				
Permi During	ssible load (For details, refe	er to P.183)		
Permi During	ssible load (For details, refe Radial load P-direction (N)	er to P.183) 980		
	ssible load (For details, refe Radial load P-direction (N) Thrust load A-direction (N)	er to P.183) 980 588		

*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.>)







130

* 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			-	-	
Model		A5I series		MDDKT5540	
Applicable driver *2	No.	A5IE series		MDDKT5540E	-
	Fr	rame symt	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	A(rms))	9.4	
Max. current		(4	A(o-p))	40	
Regenerative t	orake	Without	option	No limit 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	7.99	
	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		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.

(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 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

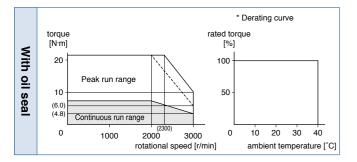
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

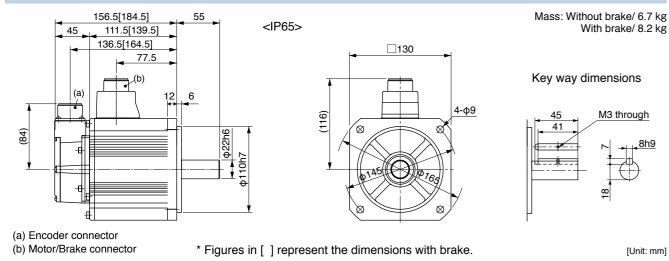
*1 Motor specifications:

*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



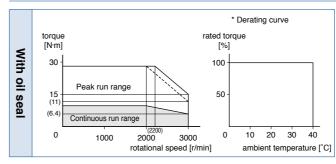
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

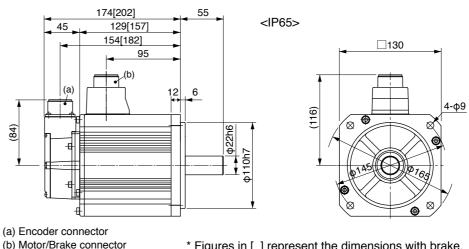
200 V MDME 2.0 kW [Middle inertia, Middle capacity]

Specifications

-						
					AC2	00 V
Matax			IP65		MDME202GC M	MDME202
Motor mod	101 *1		IP67		_	-
	Applicable Model No.		A5I series	5	MEDKT7364	
Applicable driver			A5IIE series		MEDKT7364E	-
unver		Fr	ame syml	bol	E-fr	ame
Power sup	ply	capacit	у	(kVA)	3	.3
Rated outp	out			(W)	20	000
Rated torq	ue			(N·m)	9.55	
Momentar	y Ma	ax. peal	k torque	(N·m)	28.6	
Rated curr	ent		(/	A(rms))	11.5	
Max. curre	ent		(A(o-p))	4	9
Regenerati	ve b	orake	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 (x	10-4	kg∙m²)	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	fications Note)5		20-bit Incremental	17-t Absol
	R	esolutio	n per singl	le 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

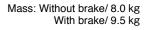
		specifications (For details			
2SC M		ake will be released when it is e use this for braking the motor in			
	Static fri	ction torque (N·m)			
	Engagin	g time (ms)			
	Releasir	ng time (ms) Note)4			
	Exciting	current (DC) (A)			
	Releasir	ng voltage (DC) (V)			
	Exciting	voltage (DC) (V)			
	• Permi	ssible load (For details, refe	Ð		
	. .	Radial load P-direction (N)			
	During assembly	Thrust load A-direction (N)			
	uccombry	Thrust load B-direction (N)			
	During	Radial load P-direction (N)			
	operation	Thrust load A, B-direction (N)			
bit lute 072	• Dimensi *1 Motor *2 The pr design				

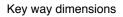
• Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. (Do not use this for braking the motor in motion.)					
Static fri	Static friction torque (N·m) 13.7 or more				
Engagin	Engaging time (ms) 100 or less				
Releasir	Releasing time (ms) Note)4 50 or less				
Exciting	Exciting current (DC) (A) 0.79±10 %				
Releasir	Releasing voltage (DC) (V) 2 or more				
Exciting	Exciting voltage (DC) (V) 24±2.4				
• Permi	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	Dedictional Dedicestics (N) (200				

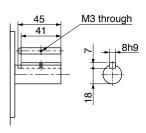
• For details of Note 1 to Note 5, refer to P.182, P.183.

*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.

[Unit: mm]

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Motor Specifications

Special Order Product

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

Specifications

			AC2	00 V
	Motor model		MDME302GC	MDME302SC M
WOTOR MODEI *1		IP67	-	-
Model		A5I series	MFDKTA390	
Applicable driver *2	No.	A5IE series	MFDKTA390E	-
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	l.3
Momentary M	ax. peal	k 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)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	ertia	Without brake	out brake 12.9	
of rotor (×10 ⁻⁴	kg∙m²)	With brake	14.2	
	Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
Resolution 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 les					
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
	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.

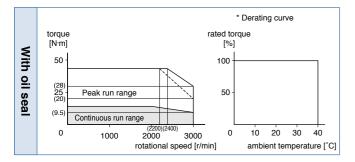
8h9

· Dimensions of Driver, refer to P.45.

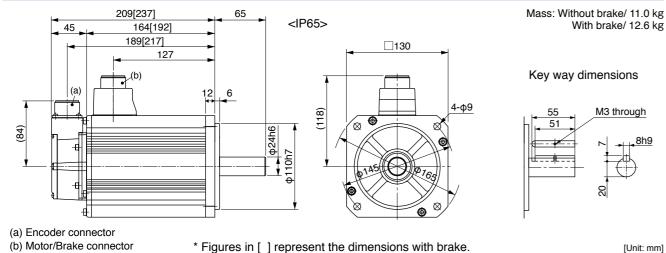
*1 Motor specifications:

*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.

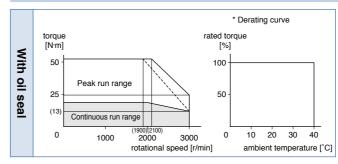
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

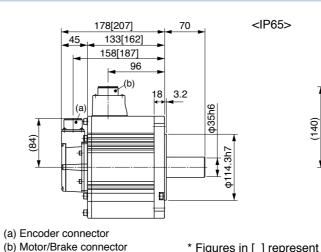
200 V MDME 4.0 kW [Middle inertia, Middle capacity]

Specifications

					- ·			
			AC2	00 V		specifications (For details ake will be released when it is		
Motor model		IP65	MDME402GC M MDME402SC M		(Do not use this for braking the motor in motion.)			
*1		IP67	-	-	Static fri	ction torque (N·m)	24.5 or more	
Annlinghle	Model	A5I series	MFDK	TB3A2	Engagin	g time (ms)	80 or less	
Applicable driver *2	No.	A5IE 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	capacit	,	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	9.1		0 ()()		
Momentary M	ax. peal	k torque (N·m)	57	7.3	 Permi 	 Permissible load (For details, refer to P.183) 		
Rated current		(A(rms))) 21.0			Radial load P-direction (N)	1666	
Max. current		(A(o-p))) 89		During	Thrust load A-direction (N)	784	
Regenerative t		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	980	
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2			Radial load P-direction (N)	784	
Rated rotation	al spee	d (r/min)	2000		During			
Max. rotationa	al speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	343	
Moment of ine	ertia	Without brake	37	' .6	 For detail 	ails of Note 1 to Note 5, refer	to P.182, P.183.	
of rotor (×10 ⁻⁴	kg∙m²)	With brake	38	3.6		 Dimensions of Driver, refer to P.45. *1 Motor specifications: *2 The product that the end of driver model 		
Recommende ratio of the loa			10 times	s or less	*2 The pr			
Rotary encode	er speci	fications 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

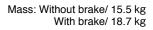


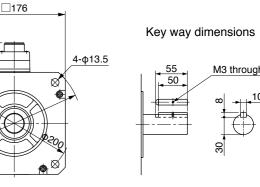
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

[Unit: mm]

Motor Specifications

Special Order Product

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

Specifications

				AC200 V		
Motor model		IP65		MDME502GC	MDME502SC M	
		IP67		-	-	
Amplicable	Model	A5I series		MFDK	TB3A2	
Applicable driver *2	No.	A5IIE serie	es	MFDKTB3A2E	-	
unver	Fr	ame symb	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	A(rms))	25	5.9	
Max. current		(.	A(o-p))	11	10	
Regenerative I	enerative brake		option	120		
frequency (times/	min) Note)1	Note)1 DV0P4285×2		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	20	00	
Max. rotationa	al speed		(r/min)	30	00	
Moment of ine	ertia	Without	brake	48	3.0	
of rotor (×10 ⁻⁴	kg∙m²)	With b	rake	48	3.8	
Recommender ratio of the loa			ia Note)3	10 times	10 times or less	
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	lesolutio	n per singl	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					

• 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

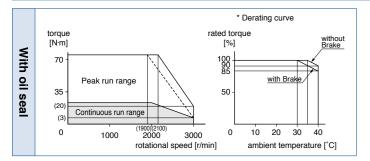
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

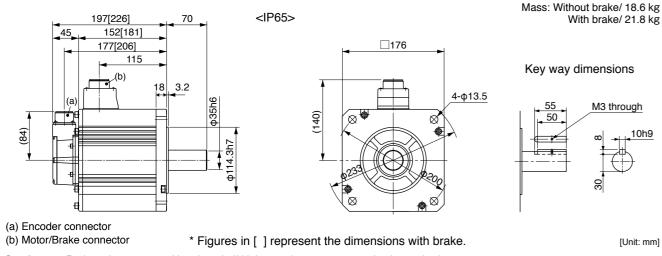
*1 Motor specifications:

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

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



Dimensions



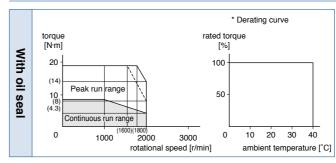
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

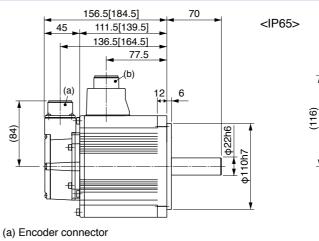
200 V MGME 0.9 kW [Middle inertia, Middle capacity]

Specifications

•								
			AC2	00 V		specifications (For details		
Motor model		IP65	MGME092GC M	MGME092SC M		(This brake will be released when it is energized. (Do not use this for braking the motor in motion.)		
MOTOL THOOLEI *1		IP67	_	-	Static fri	ction torque (N·m)	13.7 or more	
Annilisette	Model	A5I series	MDDK	T5540	Engagin	g time (ms)	100 or less	
Applicable driver *2	No.	A5IE series	MDDKT5540E	-	Releasir	ng time (ms) Note)4	50 or less	
	Fi	ame symbol	D-fra	ame	Exciting	current (DC) (A)	0.79±10 %	
Power supply	capacit	y (kVA)	1	.8	Releasir	ng voltage (DC) (V)	2 or more	
Rated output		(W)	90	00	Exciting	voltage (DC) (V)	24±2.4	
Rated torque		(N·m)	8.	59	Ŭ	0 ()()		
Momentary N	lax. pea	k torque (N·m)	19	9.3	 Permi 	 Permissible load (For details, refer to P.183) 		
Rated curren	t	(A(rms))) 7.6			Radial load P-direction (N)	980	
Max. current		(A(o-p)))) 24		During	Thrust load A-direction (N)	588	
Regenerative		Without option	No limit Note)2		assembly	Thrust load B-direction (N)	686	
frequency (times	/min) Note)1	DV0P4284	No limit Note)2		During	Radial load P-direction (N)	686	
Rated rotatio	nal spee	d (r/min)	10	00	During operation	. ,		
Max. rotation	al speed	(r/min)	20	00	operation	Thrust load A, B-direction (N)	196	
Moment of in	ertia	Without brake	6.	70		ils of Note 1 to Note 5, refer t	o P.182, P.183.	
of rotor (×10 ⁻	⁴ kg·m²)	With brake	7.9	99		 Dimensions of Driver, refer to P.43. *1 Motor specifications: *2 The product that the end of driver model 		
Recommender ratio of the lo			10 times	s or less	*2 The pr			
Rotary encod	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	0	designation has "E" is "Position control type". Detail of model designation, refer to P.152.		
F	Resolutio	n per single turn	1048576	131072				



Dimensions



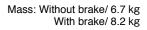
(b) Motor/Brake connector

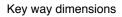
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

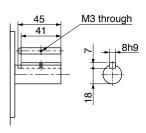
A5 Family **Motor Specifications**

Please contact us for more information

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







130 4-Φ

* Figures in [] represent the dimensions with brake.

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Motor Specifications

Special Order Product

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

Specifications

				AC200 V		
		IP65		MGME202GC M	MGME202SC 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 (k\	/A)	3	.8	
Rated output		(W)	20	00	
Rated torque		(N·	·m)	19	9.1	
Momentary M	ax. peal	k torque (N·	·m)	47	' .7	
Rated current		(A(rm	is))	17	' .0	
Max. current		(A(o-	p))	6	0	
Regenerative t	orake	Without option	on	No limi	t Note)2	
frequency (times/	min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	al spee	d (r/m	nin)	10	00	
Max. rotationa	l speed	(r/m	nin)	20	00	
Moment of ine	ertia	Without brak	ke	30).3	
of rotor (×10 ⁻⁴	kg∙m²)	With brake)	31	.4	
Recommende ratio of the loa			te)3	10 times	10 times or less	
Rotary encode	er speci	fications Not	te)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single tur	m	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
assembly	Thrust load B-direction (N)	980	
D	uring	Radial load P-direction (N)	1176
0	operation	Thrust load A, B-direction (N)	490

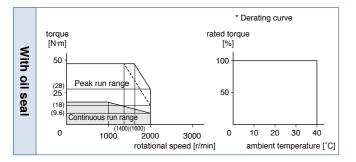
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

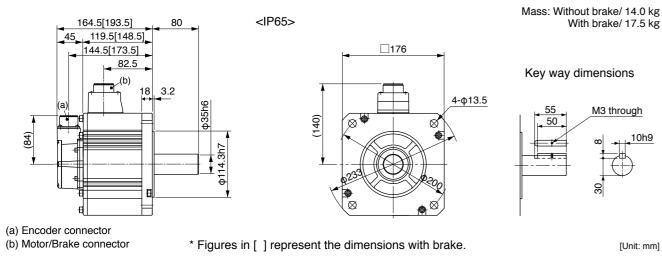
*1 Motor specifications:

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

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



Dimensions



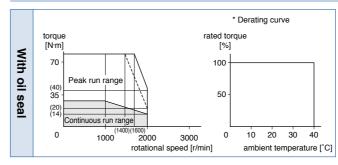
Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

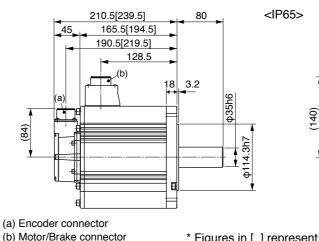
200 V MGME 3.0 kW [Middle inertia, Middle capacity]

Specifications

	AC200 V					00 V
Matax			IP65		MGME302GC M	MGME302
Motor mod	101 *1		IP67		-	-
		Model	A5I series	;	MFDK	TB3A2
Applicable driver	*2	No.	A5IIE seri	es	MFDKTB3A2E	-
unver		Fr	ame symt	loc	F-fra	ame
Power sup	ply	capacit	у	(kVA)	4	.5
Rated outp	out			(W)	30	00
Rated torg	lne			(N·m)	28	3.7
Momentar	mentary Max. peak torque (N·m)			71	71.7	
Rated curr	Rated current		(A(rms))		22	2.6
Max. curre	ent		(A(o-p))	8	0
Regenerati	ive b	orake	Without	option	No limi	t Note)2
frequency (t	imes/r	nin) Note)1	DV0P4285×2		No limit Note)2	
Rated rota	tion	al spee	d	(r/min)	10	00
Max. rotati	iona	l speed		(r/min)	20	00
Moment of	f ine	rtia	Without	brake	48	3.4
of rotor (×	10-4	kg∙m²)	With b	rake	49).2
Recomme ratio of the				ia Note)3	10 times	s or less
Rotary end	code	er speci	fications	Note)5	20-bit Incremental	17-t Absol
	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.

A5 Family **Motor Specifications**

Please contact us for more information

2SC M
bit 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)	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, refe	er to P.183)			
	Radial load P-direction (N)	2058			
During assembly	Thrust load A-direction (N)	980			
accombry	Thrust load B-direction (N)	1176			
During	Radial load P-direction (N)	1470			
operation	Thrust load A, B-direction (N)	490			

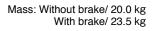
• For details of Note 1 to Note 5, refer to P.182, P.183.

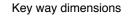
· Dimensions of Driver, refer to P.45.

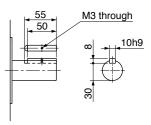
*1 Motor specifications:

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.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 MHMJ 200 W [High inertia, Small capacity]

Specifications

				AC2	00 V	
Motor model		IP65		MHMJ022G1	MHMJ022S1	
		IP67		-	-	
Anglisshis	Model	A5I series		MADK	T1507	
Applicable driver *2	No.	A5IE series		MADKT1507E	-	
unver	Fr	ame symbol		A-fra	ame	
Power suppl	y capacit	y (k'	VA)	0	.5	
Rated output	t		(W)	20	00	
Rated torque)	(N	·m)	0.64		
Momentary I	Max. peal	ctorque (N	·m)	1.91		
Rated currer	nt	(A(rn	າຣ))	1.6		
Max. current		(A(o	-p))	6.9		
Regenerative	brake	Without option		No limit Note)2		
frequency (time	s/min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	onal spee	d (r/n	nin)	3000		
Max. rotatior	nal speed	ed (r/min)		5000		
Moment of ir	nertia	Without brake		0.42		
of rotor (×10	⁻⁴ kg·m²)	With brake		0.45		
Recommend ratio of the lo			ote)3	30 times	s or less	
Rotary encoder sp		ications No	ote)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per single tu	rn	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
ſ	assembly	Thrust load B-direction (N)	196
	During operation	Radial load P-direction (N)	245
		Thrust load A, B-direction (N)	98

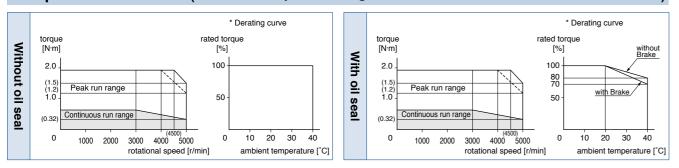
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.42.

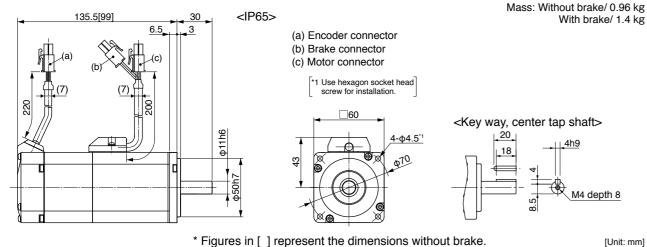
*1 Motor specifications:

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

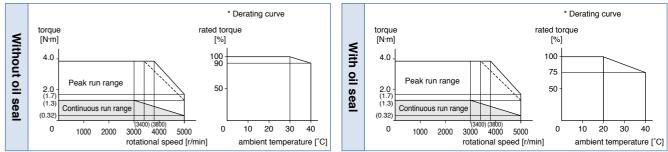
Special Order Product

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

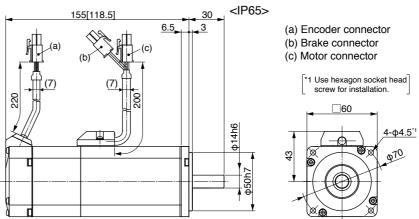
Specifications

			AC2	00 V		specifications (For details ake will be released when it is e	,
Motor model	IP65		MHMJ042G1	MHMJ042S1	Do not use this for braking the motor in motion.		
*1		IP67	-	-	Static fri	ction torque (N·m)	1.27 or more
Annlinghle	Model	A5I series	MBDK	T2510	Engagin	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-fra	ame	Exciting	current (DC) (A)	0.36
Power supply	capacit	y (kVA)	0.	.9	Releasir	ng voltage (DC) (V)	1 or more
Rated output		(W)	40		Exciting	voltage (DC) (V)	24±1.2
Rated torque		(N·m)	1.				
Momentary Ma	ax. peal	• • • •	3.8		• Permissible load (For details, refer to P.183)		
Rated current		(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 b		Without option	No lim	t Note)2	assembly	Thrust load B-direction (N)	196
frequency (times/r	min) Note)1	DV0P4283	No limi	t Note)2	During	Radial load P-direction (N)	245
Rated rotation	al spee	d (r/min)	30	00	During operation	()	
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.		
	the load and the rotor Note)3		oduct that the end of driver m				
Rotary encode	er 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.>) * Derating curv * Derating curve



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.

Special Order Product

Motor Specifications

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

Specifications

				AC2	00 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	egenerative brake		t option	No limit Note)2		
frequency (time	s/min) Note)1	DV0P4283		No limit Note)2		
Rated rotatio	nal spee	d	(r/min) 3000		00	
Max. rotation	al speed		(r/min)	45	00	
Moment of in	ertia	Without brake		1.51		
of rotor (×10	⁻⁴ kg·m²)	With brake		1.61		
Recommended mom ratio of the load and			rtia Note)3	20 times 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 assemb		Thrust load A-direction (N)	294
40001	looonibiy	Thrust load B-direction (N)	392
During operation	Radial load P-direction (N)	392	
	Thrust load A, B-direction (N)	147	

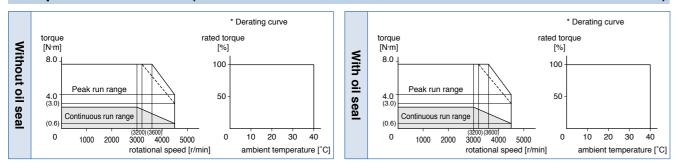
• For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.43.

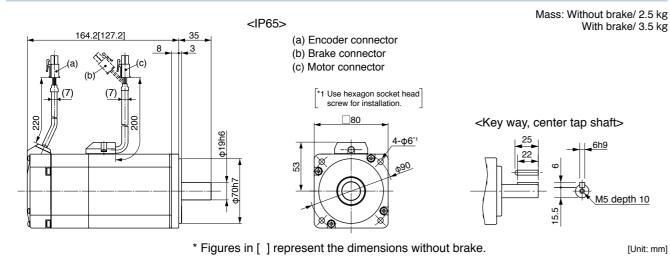
*1 Motor specifications:

*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



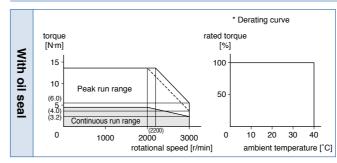
Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

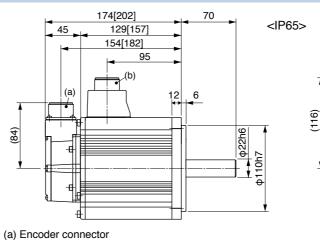
200 V MHME 1.0 kW [High inertia, Middle capacity]

Specifications

Specific	alion	3					
			AC2	00 V	 Brake specifications (For details, refer to I (This brake will be released when it is energized.) 		. ,
Motor model		IP65	MHME102GC	MHME102SC M		use this for braking the motor in	
*1		IP67	-	-	Static fri	ction 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	-	Releasir	ng time (ms) Note)4	70 or less
unvoi	Fi	ame symbol	D-fr	ame	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	voltage (DC) (V)	24±2.4
Rated torque		(N·m)	4.	77	J		
Momentary N	lax. pea	k torque (N·m)	14.3		 Permi 	ssible load (For details, refe	er to P.183)
Rated curren	t	(A(rms))	5	.7		Radial load P-direction (N)	980
Max. current		(A(o-p))	2	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)	20	000	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		ails of Note 1 to Note 5, refer to	o P.182, P.183.
of rotor (×10 ⁻⁴ kg·m ²) With brake		With brake	26.0		Dimensions of Driver, refer to P.43. Adder experimentations:		
Recommender ratio of the lo			5 times	s or less	 *1 Motor specifications: *2 The product that the end of driver model 		
Rotary encod	20 bit 17 bit		designation has "E" is "Position control type". Detail of model designation, refer to P.152.				
Resolution per single turn			1048576	131072			



Dimensions



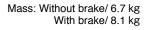
(b) Motor/Brake connector

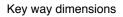
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

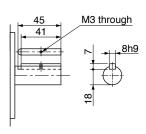
A5 Family **Motor Specifications**

Please contact us for more information

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







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* 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.

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		-	-
Angliaghte	Model	A5I series		MDDK	T5540
Applicable driver *2	No.	A5IIE series		MDDKT5540E	-
unver	Fr	ame symbol		D-fra	ame
Power supply	capacit	y (k)	VA)	2	.3
Rated output		(W)	15	00
Rated torque		(N	·m)	7.	16
Momentary M	ax. peal	k torque (N	·m)	21.5	
Rated current		(A(rms))		9.4	
Max. current		(A(o-p))		40	
Regenerative t	orake	Without option		22	
frequency (times/	min) Note)1	DV0P4284		130	
Rated rotation	al spee	d (r/m	nin)	2000	
Max. rotationa	l speed	(r/m	nin)	3000	
Moment of ine	ertia	Without brake		37.1	
of rotor (×10 ⁻⁴ kg·m ²)		With brake		38.4	
	Recommended mome ratio of the load and th		te)3	5 times or less	
Rotary encoder spec		fications No	te)5	20-bit Incremental	17-bit Absolute
R	esolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183)

Please contact us for more information.

(This brake will be released when it is energized.) Do not use this for braking the motor in motion.

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

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

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

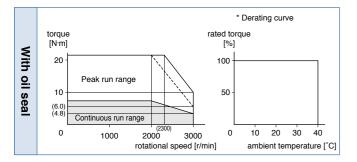
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· Dimensions of Driver, refer to P.43.

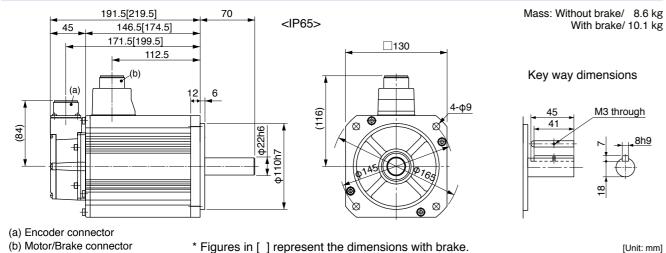
*1 Motor specifications:

*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.

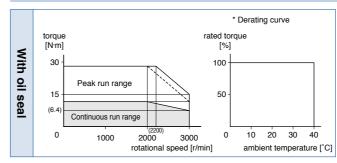
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

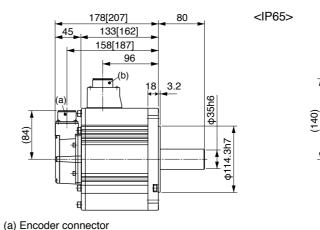
200 V MHME 2.0 kW [High inertia, Middle capacity]

Specifications

			AC2	00 V	Brake	specifications (For details	s, refer to P.183)
IP65		MHME202GC M	MHME202SC M	This brake will be released when it is energized. Do not use this for braking the motor in motion.			
Motor model *1	10.00				Static fri	Static friction torque (N·m)	
	Model	A5I series	MEDKT7364		Engagin	Engaging time (ms)	
Applicable driver *2	No.	A5IE series	MEDKT7364E	-	Releasir	ig time (ms) Note)4	25 or less
unver	Fr	ame symbol	E-fra	ame	Exciting	current (DC) (A)	1.3±10 %
Power supply	Power supply capacity (kVA)		3.	3	Releasir	ng voltage (DC) (V)	2 or more
Rated output		(W)	20		Exciting	voltage (DC) (V)	24±2.4
Rated torque	Rated torque (N·m)		9.55			0 () ()	
Momentary Ma	Momentary Max. peak torque (N·m)		28.6		 Permissible load (For details, refer to P.183) 		er to P.183)
Rated current	Rated current (A(rms))		11.1			Radial load P-direction (N)	1666
Max. current		(A(o-p))	47		During	Thrust load A-direction (N)	784
Regenerative b	rative brake Without option		45		assembly	Thrust load B-direction (N)	980
frequency (times/r	nin) Note)1	DV0P4285	142			()	
Rated rotation	al spee	d (r/min)	20	00	During	Radial load P-direction (N)	784
Max. rotationa	l speed	(r/min)	30	00	operation	Thrust load A, B-direction (N)	343
Moment of ine	Moment of inertia Without brake		57.8		• For details of Note 1 to Note 5, refer to P.182, P.183.		
of rotor (×10 ⁻⁴ kg⋅m ²) With brake		59.6		Dimensions of Driver, refer to P.43.			
Recommended moment of inertia ratio of the load and the rotor Note)3		*1 Motor specifications: 5 times or less *2 The product that the end of drive		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.		<i></i>	
R	esolutio	n per single turn	1048576	131072			



Dimensions



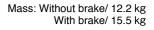
(b) Motor/Brake connector

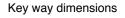
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

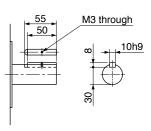
A5 Family **Motor Specifications**

Please contact us for more information

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







[Unit: mm]

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* 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	
		IP65		MHME302GC M	MHME302SC M	
Motor model *1		IP67		-	-	
A	Model	A5I series	;	MFDK	MFDKTA390	
Applicable driver *2	No.	A5IIE seri	es	MFDKTA390E	-	
anver	Fr	ame syml	ool	F-fra	ame	
Power supply	capacit	у	(kVA)	4	.5	
Rated output	Rated output (W)			30	00	
Rated torque			(N·m)	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 t	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	00	
Moment of ine	ertia	Without brake		90.5		
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less		
Rotary 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

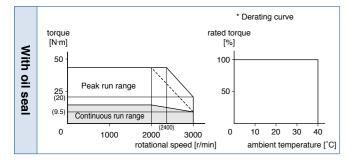
For details of Note 1 to Note 5, refer to P.182, P.183.

· Dimensions of Driver, refer to P.45.

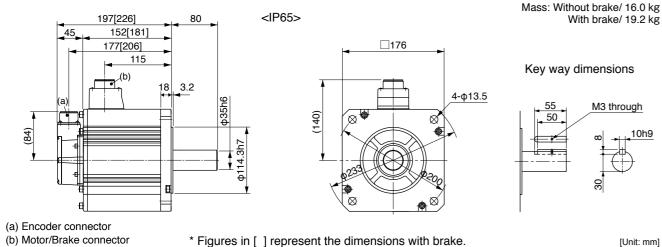
*1 Motor specifications:

*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



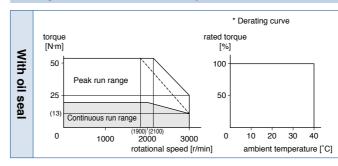
Reduce the moment of inertia ratio if high speed response operation is required. <Cautions> Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please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

Special Order Product

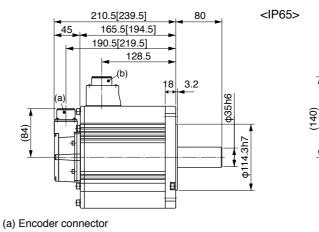
200 V MHME 4.0 kW [High inertia, Middle capacity]

Specifications

-							
					AC2	00 V	
Motor model		IP65		MHME402GC M	MHME402		
MOTOL MOC	*1		IP67		-	-	
	Model		A5I series		MFDKTB3A2		
Applicable driver	*2	No.	A5IIE series		MFDKTB3A2E	-	
unver		Fr	ame symb	ol	F-fra	ame	
Power sup	ply	capacit	y	(kVA)	6	.0	
Rated output (W)				(W)	40	00	
Rated torque (N·m)				(N·m)	19.1		
Momentary Max. peak torque (N·m)				(N·m)	57.3		
Rated current			(A(rms)) 21		.0		
Max. current (A(o-p))			A(o-p))	8	9		
Regenerat	ive b	orake	Without option		17		
frequency (i	imes/r	nin) Note)1	DV0P4285×2		125		
Rated rota	tion	al spee	d	(r/min)	2000		
Max. rotat	iona	l speed		(r/min)	3000		
Moment of	f ine	rtia	Without brake		112		
of rotor (×10 ⁻⁴ kg·m ²)		kg∙m²)	With brake		114		
Recommended moment of inertia ratio of the load and the rotor Note)			ia Note)3	5 times	or less		
Rotary encoder specificatio		fications	Note)5	20-bit Incremental	17-ł Abso		
Resolution per single turn			e turn	1048576	1310		



Dimensions



(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

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<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**

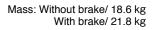
Please contact us for more information

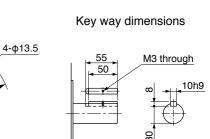
2SC M	
bit lute	
)72	

• 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 friction torque (N·m) 24.5 or more			
Engagin	g time (ms)	80 or less	
Releasir	ng 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			
Permi	ssible load (For details, refe	er 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	
	ails of Note 1 to Note 5, refer t	0 P 182 P 183	

*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.>)





Motor Specifications

Special Order Product

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

Specifications

				AC2	00 V
Motor model		IP65		MHME502GC	MHME502SC M
*1		IP67		-	-
Angliaghte	Model	A5I serie	s	MFDKTB3A2	
Applicable driver *2	No.	A5IIE ser	ries	MFDKTB3A2E	_
anver	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	7.	.5
Rated output	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		10	
frequency (times/	min) Note)1	DV0P4285×2		76	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	ertia	Without brake		162	
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m ²)		orake	164	
	Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less
Rotary encode	Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn		le turn	1048576	131072	

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

· Please contact us for more information.

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

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

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

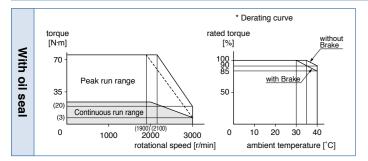
For details of Note 1 to Note 5, refer to P.182, P.183.

Dimensions of Driver, refer to P.45.

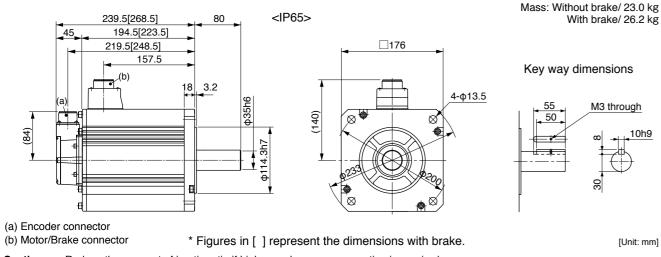
*1 Motor specifications:

*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	Vibration Motor only		
	Motor only	Impact	
(except rotatin M *	IP65 *3	Enclosuro	
(except rotating portion of o	11 03	Enclosure rating (Motor	
(except rotating portion of o	IP67 *3*4	only)	
	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.

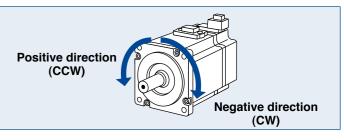
A5 Family **Motor Specification** Description

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

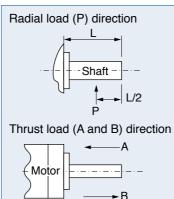
[At AC400 V of power voltage]

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

-	Cations of Bui	Static	Rotor	Engaging	Releasing	Exciting	Releasing voltage DC V	Permissible	Permissible	Permissible	
Motor series	Motor output	friction torque N·m	inertia × 10 ⁻⁴ kg·m²	time ms	time ms	current DC A (at cool-off)	Exciting	work (J) per one braking	total work × 10 ³ J	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	10000	
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	0.75	24 ±2.4	1470	1500		
	4.5 kW	31.4 or more							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	24.5 or more	4.7	80 or less	25 or less (200)	1.3	24 ±2.4	1372	2900	5440	
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000	

· Releasing time values represent the ones with DC-cutoff using a varistor. Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)

Above values (except static friction torque, releasing voltage and excitation current) represent typical values.

Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.

• Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

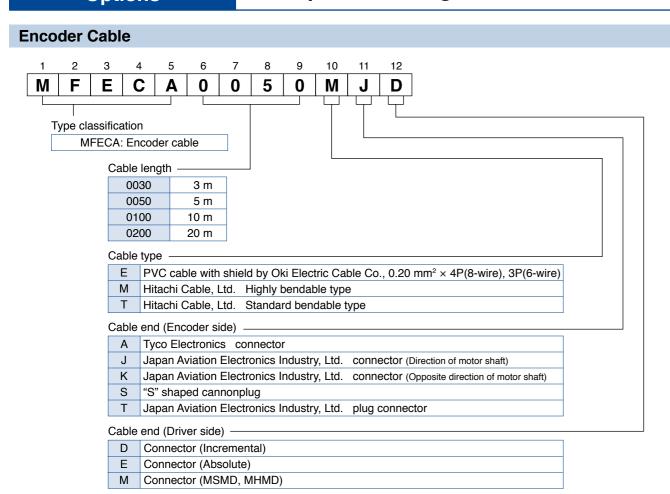
A5 Family

Series

ation

Options

Cable part No. Designation



Motor Cable, Brake Cable

1	2	3	4	5	6	7	8	9	10	11	12
M	F	Μ	C	A	0	0	5	2	N	J	D
		141				U	<u> </u>				
				T				Т		Τ	
AC	servoi	notor o	able	ר ר							
710	001101								$ _{\Gamma}$		
		Тур	be clas	ssifica	tion				L	-Cabl	e end at driver side
			A S	tanda	rd					D	Rod terminal
		E	3 S	pecia						Т	Clamp terminal
					order						
										- Cabl	e end at motor side
		Ca	ble lei	ngth ·						С	S type cannon plug
			003		3 m					E	Tyco Electronics connector
			005		5 m						Japan Aviation Electronics Industry, Ltd. connector
			010		10 m					J	(Direction of motor shaft)
			020		20 m						Japan Aviation Electronics Industry, Ltd. connector
		0.								K	(Opposite direction of motor shaft)
		_			of cab	e core)				
			-	0.75						- Cabl	e type
				1.25						E	ROBO-TOP _® 4-wire by DYDEN CORPORATION
				2.0 m						F	ROBO-TOP _® 6-wire by DYDEN CORPORATION
			3	3.5 m	lm²					G	ROBO-TOP _® 2-wire by DYDEN CORPORATION
										N	4-wire by Hitachi Cable, Ltd. (Highly bendable type)
										R	4-wire by Hitachi Cable, Ltd. (Standard bendable type)
										Р	2-wire by Hitachi Cable, Ltd. (Highly bendable type)
										S	2-wire by Hitachi Cable, Ltd. (Standard bendable type)

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.

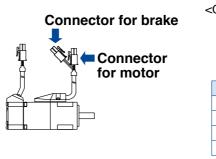
Connector: Made by Tyco Electronics (The figures below show connectors for the motor.)

Connector for encoder





<Remarks> Do not connect anything to NC.



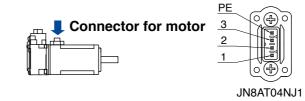
_					
	2	1			
	4	3			
1	1721	67-			
IN N	lo.	Арр			
1		U-p			
2		V-r			
3		W-I			
4		Gr			

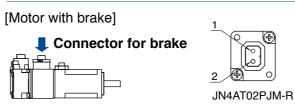
• When the motors of <MSME (50 W to 750 W (200 V))> are used, they are connected as shown below.

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.





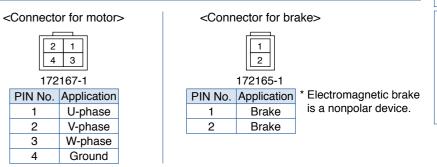




A5 Family **Options**

	PIN No.	Application				,	
	1	NC	Γ	3	2	1	
	2	PS		6	5	4	
	3	PS		9	8	7	
	4 E5V	172169-1					
al	5	E0V	-				
	6	FG(SHIELD)	1	17-bit Absolute			

PIN No.	Application				
1	BAT+				
2	BAT–				
3	FG(SHIELD)				
4	PS				
5	PS				
6	NC				
7	E5V				
8	E0V				
9	NC				



20-bit In	cremental		17-bit Absolute			
PIN No.	Application FG(SHIELD) EOV PS - E5V PS		PIN No.	Application		
1			1	FG(SHIELD)		
2			2	BAT-		
3			3	E0V		
4			4	PS		
5			5	BAT+		
6			6	E5V		
7			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.

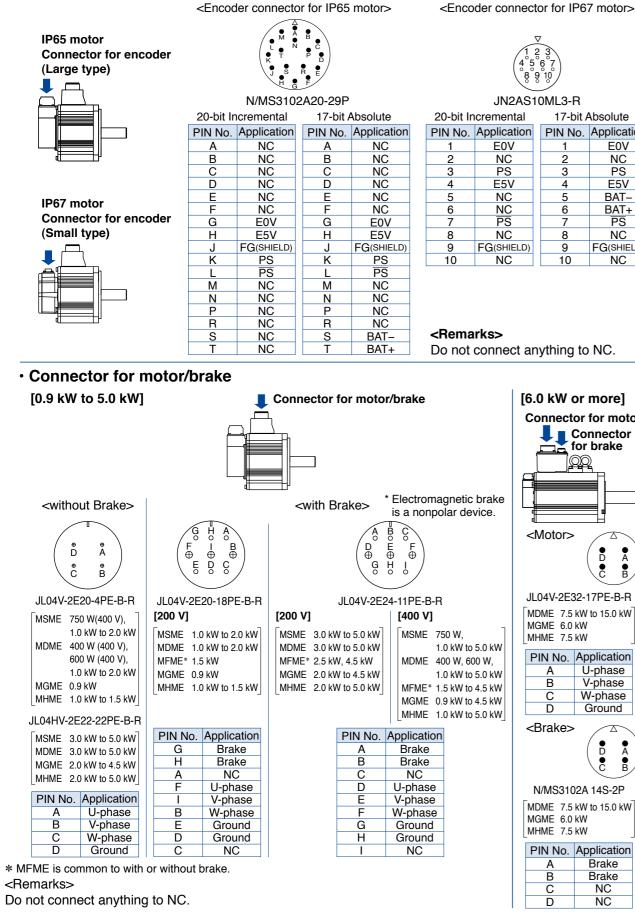
Options

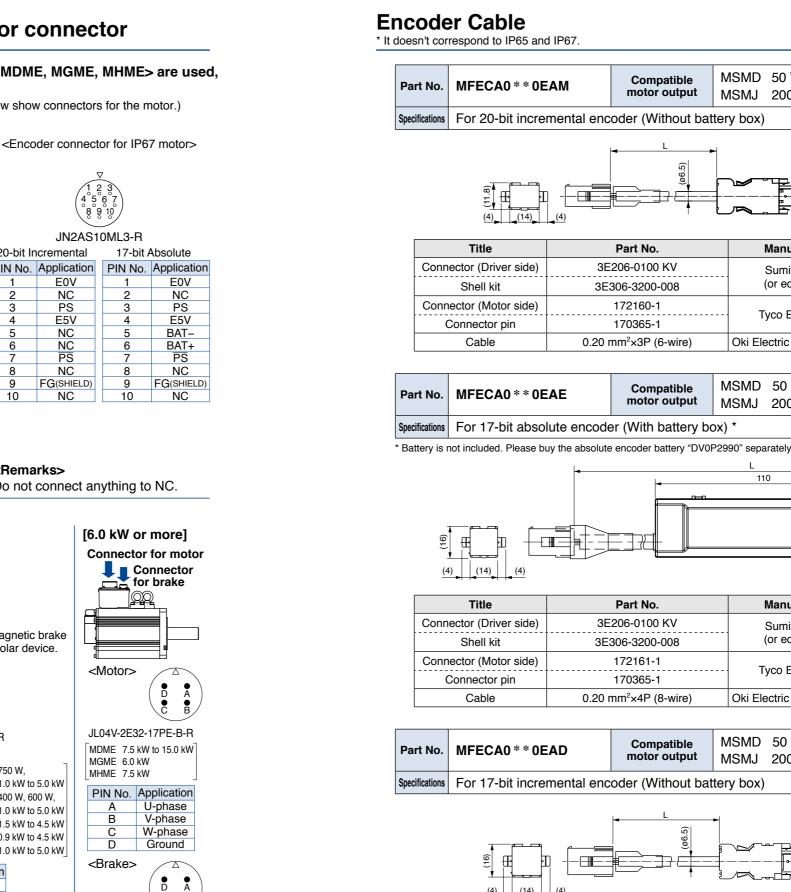
Specifications of Motor connector

 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 Flootropico	10	MFECA0100EAD
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAD
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

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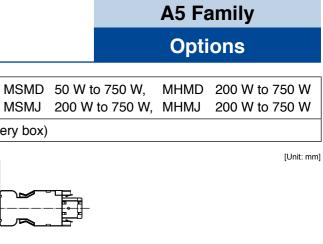
* Electromagnetic brake is a nonpolar device.

Brake

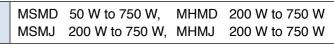
Brake

NC

NC



	Manufacturer	L	. (m)	Part No.
	Sumitomo 3M (or equivalent)		3	MFECA0030EAM
			5	MFECA0050EAM
	Tyco Electronics		10	MFECA0100EAM
			20	MFECA0200EAM
e)	Oki Electric Cable Co., Ltd.			



110 300

	Manufacturer	L (n	ı)	Part No.
	Sumitomo 3M	3		MFECA0030EAE
	(or equivalent)	5		MFECA0050EAE
	Tugo Electropico	10		MFECA0100EAE
	Tyco Electronics	20		MFECA0200EAE
	Oki Electric Cable Co., Ltd.			
	Oki Electric Cable Co., Ltd.			



A5 Family

[Unit: mm]

Options

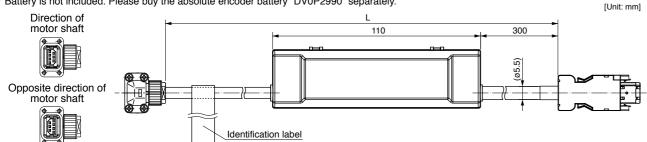
Encoder Cable * It doesn't correspond to IP65 and IP67.

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 [Unit: mm] Opposite direction of Direction of motor shaft motor shaft đ <u></u> ÌT ത് ത് Identification label

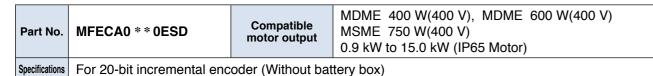
Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030MJD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050MJD
Connector (Motor side)	JN6FR07SM1	Japan Aviation	10	MFECA0100MJD
Connector pin	LY10-C1-A1-10000	Electronics Ind.	20	MFECA0200MJD
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.		

Part No.	MFECA0 ** 0MJE (Highly bendable type, Direction of motor shaft) MFECA0 ** 0MKE (Highly bendable type, Opposite direction of motor shaft) MFECA0 ** 0TJE (Standard bendable type, Direction of motor shaft) MFECA0 ** 0TKE (Standard bendable type, Opposite direction of motor shaft)	Compatible motor output	MSME 50 W to 750 W (200 V)
Specifications	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

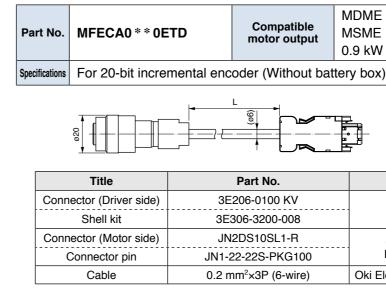


Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030MJE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050MJE
Connector (Motor side)	JN6FR07SM1	Japan Aviation	10	MFECA0100MJE
Connector pin	LY10-C1-A1-10000	Electronics Ind.	20	MFECA0200MJE
Cable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

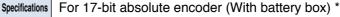


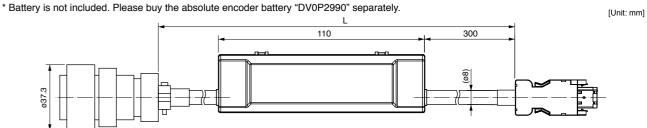
[Unit: mm]

	Title	Part No.	Manufacturer	L (m)	Part No.
Con	nector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESD
	Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ESD
Con	nector (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.		





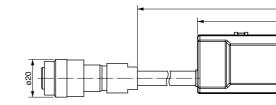




Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ESE
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	10	MFECA0100ESE
Cable clamp	N/MS3057-12A	Electronics Ind.	20	MFECA0200ESE
Cable	0.2 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
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation
Connector pin	JN1-22-22S-PKG100	Electronics Ind.
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]

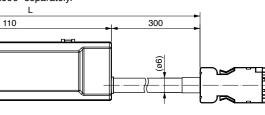
Manufacturer
 Sumitomo 3M (or equivalent)
 Japan Aviation Electronics Ind.
Oki Electric Cable Co., Ltd.

L (m) Part No.			
3	MFECA0030ETD		
5	MFECA0050ETD		
10	MFECA0100ETD		
20	MFECA0200ETD		

A5 Farr

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)



L (m)	Part No.		
3	MFECA0030ETE		
5	MFECA0050ETE		
10	MFECA0100ETE		
20	MFECA0200ETE		

[Unit: mm]

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Motor Cable (without Brake)

Options

* It doesn't correspond to IP65 and IP67.

			it udestit t	concespond	IU IFUS ANU IFU	. 10		
				1				
Part No. MFMCA0 * * 0EED		Applicable		50 W to 750	-		W to 750 W	
			model	MSMJ	200 W to 75	OW, MHN	/J 200	W to 750 W
		(50)	L		(50)			[Unit: mm
		╞ ╸ ╴╴╴╸		(¢11)				
			<u>ا</u>					
					_~			
	Title		Part No.		Manufa	cturer	L (m)	Part No.
	Connector		172159-1			ctronice	3	MFMCA0030EED
Connector pin		170366-1		Tyco Electronics		5	MFMCA0050EED	
	Rod terminal		AI0.75-8GY		Phoenix	Contact	10	MFMCA0100EED
Nylon	insulated round terminal		N1.25-M4		J.S.T Mfg.	Co., Ltd.	20	MFMCA0200EED
	Cable	ROBO-TOF	P 600V 0.75r	mm ² 4-wire	DYDEN COF	RPORATION		
						,		
	MFMCA0 * * 0	NJD (Highly be	endable type, Dir	rection of motor	r shaft)		MSME \$	50 W to 750 W(200V)
Part No.	MFMCA0 * * 0	NKD (Highly bendable type, Oppo		pposite direction	n of motor shaft)	Applicable	MSME 2	200 W to 750 W(200V)
Part NO.	MFMCA0 * * 0	RJD (Standard bendable type, Direction of m		otor shaft)	model	MSME \$	50 W to 750 W(200V)	
	MFMCA0 * * 0	RKD (Standar	d bendable type,	, Opposite direc	ction of motor shaft)] [MSME 2	200 W to 750 W(200V)
								[Unit: mm
	Direction of motor shaft	(28	.8)	L		50)		
		6			(00.7)			
		<u> </u>				-		

Opposite direction of motor shaft

 Identification label

 Caution ☆

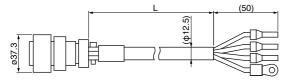
 Motor cable for opposite direction of motor shaft cannot be used with a motor 50W and 100W.

[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.		

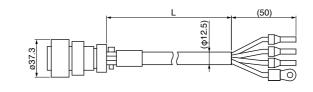
Part No. MFMCA0 * * 2ECD

Applicable MFME 1.5 kW(200 V)



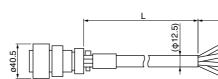
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation	3	MFMCA0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0052ECD
Rod terminal	NTUB-2		10	MFMCA0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCA0202ECD
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	DYDEN CORPORATION		





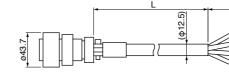
Title	Part No.	Manufacturer
Connector	JL04V-6A20-4SE-EB-R	Japan Aviation
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated round terminal	N2-M4	5.5.1 Mig. Co., Liu.
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION





Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R Electronics Ind.		5	MFMCE0052ECD
Rod terminal	NTUB-2		10	MFMCE0102ECD
Nylon insulated round terminal	N2-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	JL04-2428CK(17)-R Electronics Ind.		MFMCF0052ECD
Rod terminal	NTUB-2		10	MFMCF0102ECD
Nylon insulated round terminal	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) 0.9 kW

L (m)	Part No.
3	MFMCD0032ECD
5	MFMCD0052ECD
10	MFMCD0102ECD
20	MFMCD0202ECD

Applicable MHME 2.0 kW (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

[Unit: mm]

Series

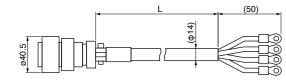
Options

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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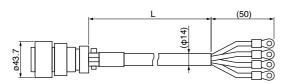
[Unit: mm]



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

Part No	Applicable	
	 model	(200 V and 400 V commonness)

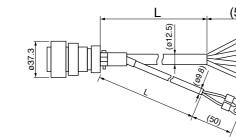
[Unit: mm]



Title	Title Part No. M		L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R Japan Aviation		3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R			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

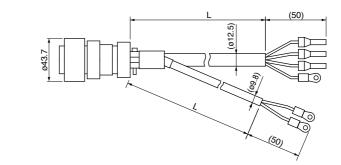
Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.





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 clam	0	JL04-2428CK(17)-R	Electronics Ind.
Rod termina	al	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]



L (m)	Part No.
3	MFMCA0032FCD
5	MFMCA0052FCD
10	MFMCA0102FCD
20	MFMCA0202FCD

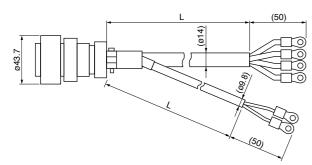


L (m)	Part No.
3	MFMCE0032FCD
5	MFMCE0052FCD
10	MFMCE0102FCD
20	MFMCE0202FCD

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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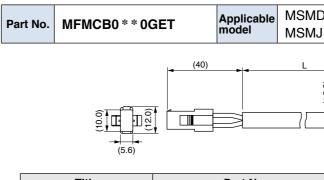


Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A24-11SE-EB-R	-6A24-11SE-EB-R Japan Aviation		MFMCA0033FCT
Cable clam	р	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCA0053FCT
Nylon insulated	Earth	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103FCT
round terminal	Brake	N1.25-M4	5.5.1 Wilg. Co., Ltd.	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

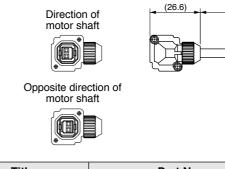
[Unit: mm]

* 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-v

	MFMCB0 * * 0PJT (Highly bendable type, Direction
out No	MFMCB0 * * 0PKT (Highly bendable type, Opposi
art No.	MFMCB0 * * 0SJT (Standard bendable type, Direct
	MFMCB0 * * 0SKT (Standard bendable type, Oppo



Title	Part No.	Manufacturer				
Connector	JN4FT02SJMR	Japan Aviation Electronics Ind.				
Connector pin	ST-TMH-S-C1B-3500					
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					
	50 W to 750 V 200 W to 750	-		-	o 750 W o 750 W	A				
L	(50)				[Unit: mm]	A5 Family				
_ (+		±10				ES				
	Manufac	turer	L (m)		Part No.	Serie				
			3	N	IFMCB0030GET	S				
	Tyco Elec	tronics	5	Ν	IFMCB0050GET					
	J.S.T Mfg. (Co., Ltd.	10	Ν	IFMCB0100GET					
² 2-wire	DYDEN CORF	ORATION	20	Ν	IFMCB0200GET					
						Info				
rection of	motor shaft)					Information				
Opposite o	direction of motor	shaft)	Applica	blo	MSME	ion				
	of motor shaft)	,	model	Die	50 W to 750 W					
. Opposit	e direction of mo	tor shaft)	-		(200 V)					
L	(04.3)				[Unit: mm]					

L (m)	Part No.
3	MFMCB0030PJT
5	MFMCB0050PJT
10	MFMCB0100PJT
20	MFMCB0200PJT

Options

Interface Cable

Cable for Interface

Part No. DV0P4360

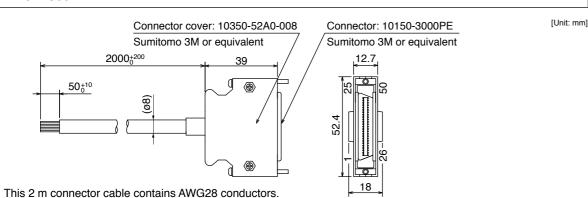


Table for wiring

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

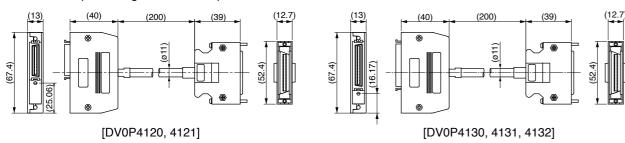
Part No. DV0P4120, 4121, 4130, 4131, 4132

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

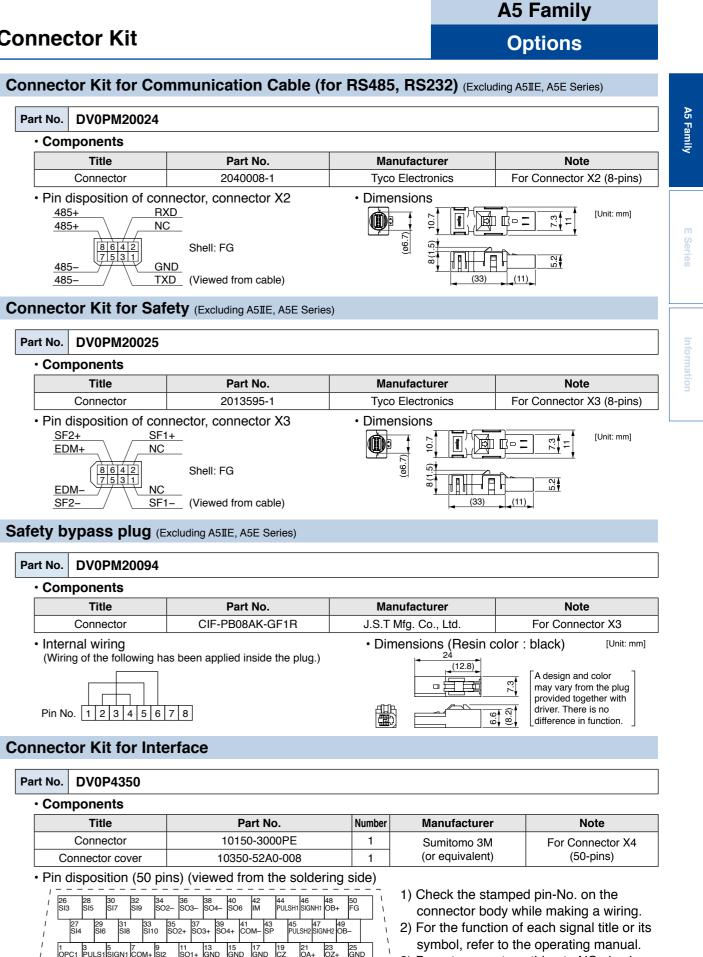
* For details of wiring, contact our sales department.

Converts 36-pin configuration to 50-pin.

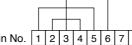


Connector Kit

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)



Ра	rt No.	DV0PM20094										
	• Con	ponents										
		Title	Part No.									
		Connector CIF-PB08AK-GF1R										
	 Inter 	nal wiring										



Connector Kit for Interface

Pa	rt N	o.	C	V	0P	43	50															
	۰Co	om	npo	on	nen	ts																
				Т	itle										l	Pa	rt	Nc).			
			С	on	nec	tor								1	01	50)-3	00	0F	ΡĒ		
		С	onr	neo	ctor	CO	ver	•						10)35	50-	52	2A()-C	30	3	
	• Pi	n c	dis	pc	ositi	ion	(5	50	pi	ns	5) ((vi	ev	ve	d	fro	m	tł	ne	S(le _
	 	26 SI3		28 SI5	31 S	0 17	32 SI9)	34 SO	2–	36 SO	3–	38 SO	4–	40 SO	6	42 IM		44 PUL	.SH1	46 Sigi	NH1
	 		27 SI4		29 SI6	31 SI8	3	33 SI1	0	35 SO	2+	37 SO	3+	39 SO	4+	41 CO	м–	43 SP		45 PUL	SH2	47 SIG
		1 OP			LS1S						11 SO	1+	13 GN	D	15 GN	D	17 GN	D	19 CZ		21 OA	
	i	_	2	~	4 PH 11 S	6	2N/2	8		10	1	12	5	14 SPI	B/	16 P-4	ті	18 N-7	<u>лті</u>	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".

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

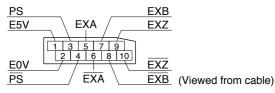
[Unit: mm]

<u>5.4</u> 5.8

[Unit: mm]

[Unit: mm]

• Pin disposition of connector, connector X5



Connector Kit for Encoder

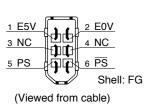
Part No. DV0PM20010

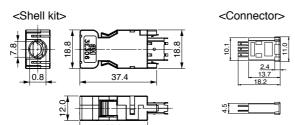
Components

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)

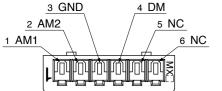
Connector Kit for Analog Monitor Signal

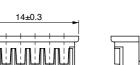
Part No. DV0PM20031

Components

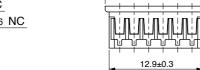
Title	Part No.	Number	Manufacturer	Note
Connector	510040600	1	Moley Inc	For Connector V7 (C nine)
Connector pin	500118100	6	Molex Inc	For Connector X7 (6-pins)

Pin disposition of connector, connector X7





Dimensions



<Remarks>

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

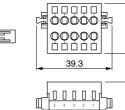
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1		For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	

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		-	For Connector XA	
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Lto	u.	For Conn	IECTOF XA
Dimensions		Ť	Driver part No.	Pow	ver supply	Rated input current
			MADHT1105 *** MADKT1105 ***	Sin	gle phase 100 V	1.7 A
			MADHT1107 *** MADKT1107 ***	Single phase 100 V		2.6 A
		A	MADHT1505 *** MADKT1505 ***	Single p	ohase/3-phase 200 V	1.6 A/0.9 A
		27.6	MADHT1507 *** MADKT1507 ***	Single p	ohase/3-phase 200 V	2.4 A/1.3 A
			MBDHT2110 *** MBDKT2110 ***	Sin	gle 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 p	phase/3-phase 200 V	4.1 A/2.4 A
			MCDHT3120 *** MCDKT3120 ***	Sin	gle phase 100 V	7.6 A
			MCDHT3520 *** MCDKT3520 ***	Single p	phase/3-phase 200 V	6.6 A/3.6 A
			MDDHT3530 *** MDDKT3530 ***	Single p	phase/3-phase 200 V	9.1 A/5.2 A
			MDDHT5540 *** MDDKT5540 ***	Single p	phase/3-phase 200 V	14.2 A/8.1 A

• D



Part No. DV0PM20044 (For E-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-L	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		

Part No. DV0PM20051 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-M	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		

Part No. DV0PM20052 (For E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-L	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		

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		For Connector XB
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20046 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAXGSA-L	1		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 Mfg. Co., Ltd.	For Connector XB

Connector Kit

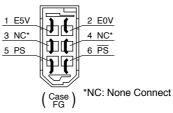
* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Connector Kit for Motor/Encoder Connection

Part No.	DV0P4290	Applicable model	MS (ab:
• Con	ponents		

Part No. Title Connector (Driver side) 3E206-0100 KV Shell kit 3E306-3200-008 Connector 172161-1 Connector pin 170365-1 Connector 172159-1 Connector pin 170366-1

· Pin disposition of connector, · Pin disposition of connector connector X6 for encoder cable



ŕ			
	1 BAT+	2 BAT-	
	4 PS	$\frac{5}{PS}$	
	7 E5V	8 E0V	
-			-

* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

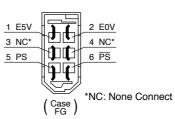
	Part No. DV0P4380	Applicable model	MS MS (inc
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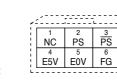
Components

•				
Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pipe)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Connector	172160-1	1	Tugo Electropico	For Encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6-pins)
Connector	172159-1	1	Tyco Electronics	For Motor cable
Connector pin	170366-1	4		(4-pins)

connector X6

· Pin disposition of connector, · Pin disposition of connector for encoder cable





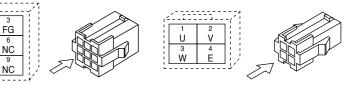
A5 Family

Options

SMD 50 W to 750 W, MHMD 200 W to 750 W osolute encoder type)

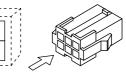
Number	Manufacturer	Note	
 1	Sumitomo 3M	For Connector X6 (6-pins)	
1	(or equivalent)		
1	Tues Flestrasias	For Encoder cable	
 Tyco Electronics		(9-pins)	
1	Tyco Electronics	For Motor cable	
4		(4-pins)	

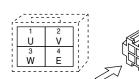
 Pin disposition of connector for motor cable



SMD 50 W to 750 W, MHMD 200 W to 750 W SMJ 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

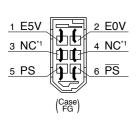
Applicable model MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

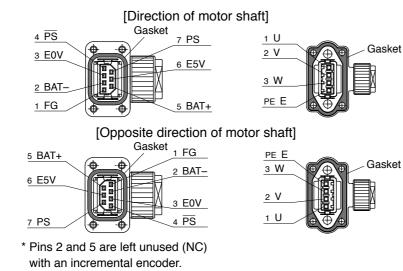
Title	Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	06-0100 KV 1 Sumitomo 3M		For Connector V6 (6 pipe)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN6FR07SM1 1 Japan Aviation		Japan Aviation	For Encoder cable	
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.	(7-pins)	
Motor connector	JN8FT04SJ1	1	Japan Aviation	For Motor cable	
Socket contact	ST-TMH-S-C1B-3500	4	Electronics Ind.	(4-pins)	

 Pin disposition of connector,
 Pin disposition of connector connector X6 for encoder cable

· Pin disposition of connector for motor cable



*1 NC: None Connect



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	For Freedor coble	
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 coblo	
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".

Parl				<ip65 moto<="" th=""></ip65>	
	rt No	No. DV0P4310 Applicable model	MSME 750		
	DV0F4310	DV0P4310	model	MDME 400	
				MHME 1.0	
	• Con	nponents			
		Title	Pa	rt No.	
	Co	apector (Driver side)	35206	-0100 KV	

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	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	
Motor connector	N/MS3106B20-4S	1	Japan Aviation	For Motor cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	

		<ip67 motor=""></ip67>
Part No.		MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW
	 model	MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (All model 200 V and 400 V commonness)
		(All model 200 F and 100 F common 1000)

Components

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	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	FUT WULDE CADIE

			<ip65 n<="" th=""><th>note</th></ip65>	note
Part No.	DV0P4320	Applicable model	MSME	3.
		model	MHME	2.

Components

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	N/MS3106B20-29S	1	Japan Aviation	For Freedor coble
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor coble
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable

Part No.	DV0PM20038	Applicable model	<ip67 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MFME 1.5 kW (Common to with/ without brake), MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip67>	With brake	
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor coblo
Cable clamp	JL04-2022CK(14)-R	1 Electronics Ind. For Motor ca		

or> 50 W (400 V), 1.0 kW to 2.0 kW 00 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW .0 kW to 1.5 kW, MGME 0.9 kW

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

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	1	Sumitomo 3M	For Connector VC (C nine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For 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 Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.		
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	FOI WOLOF CADIE	

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	Title Part No.		Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector N/MS3106B24-11S		1	Japan Aviation	For Motor cable	
Cable clamp	N/MS3057-16A	1	Electronics Ind.	For Wolor cable	

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	

* Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Part No.	DV0PM20057	Applicable model	<ip67 mot<br="">MDME 7 MGME 6</ip67>
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Components

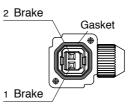
Title	Title Part No.		Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	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 MSME 50 W to 750 W				
• Con	nponents					
	Title	Part No.	Part No. Number Manufacturer Note			
	Connector	JN4FT02SJM-R	1	Japan Aviation	For brake cable	
	Socket contact	ST-TMH-S-C1B-3500	0 2	Electronics Ind.	FUI DIAKE 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".

otor> 7.5 kW to 15.0 kW 6.0 kW, MHME 7.5 kW

[Opposite direction of motor shaft]

Brake

Gaske 2 Brake

Withou
brake

ut e

With

brake

Options

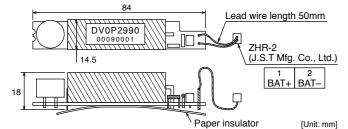
Battery for Absolute Encoder

* A5IIE, A5E series does not support to absolute encoder.

Battery for Absolute Encoder

Part No. DV0P2990

Lithium battery: 3.6 V 2000 mAh

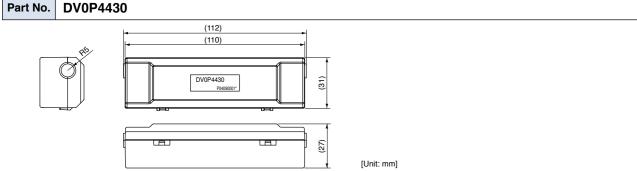


<Caution>

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.

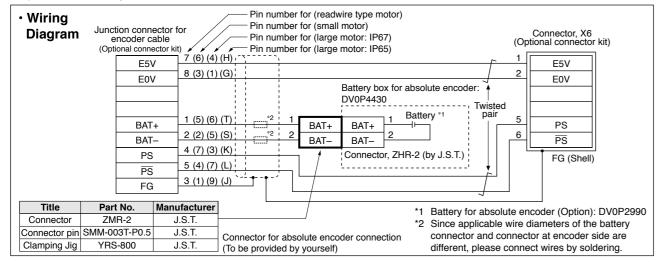
<Caution>

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.

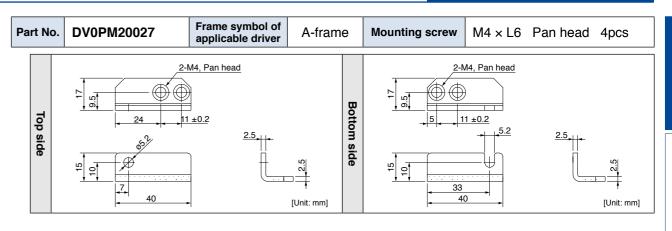
Refer to the instruction manual of the battery for handling the battery.

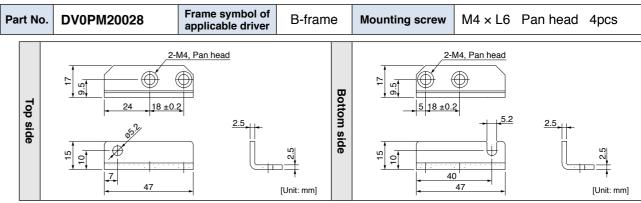
Installation Place of Battery

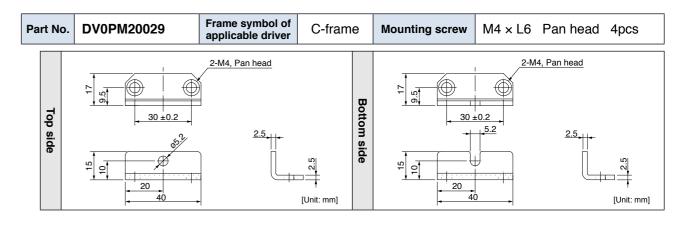
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable gas, grinding oil, oil mist, iron powder or chips and etc.
- 3) Well-ventilated and humid and dust-free place.
- 4) Vibration-free place

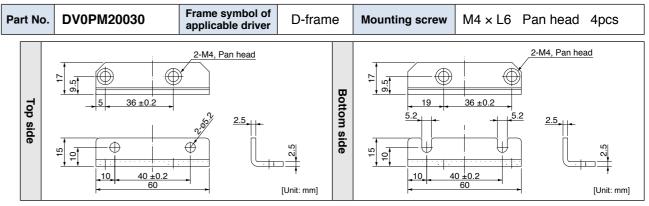


Mounting Bracket





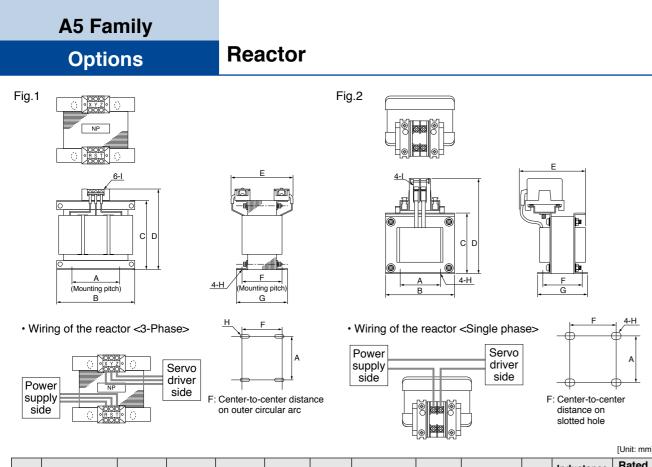




<Caution>

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



	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				
Part No.	Manufacturer's	Resistance	cable core outside diameter			power nce) ^{*1}	Activation temperature of built-in thermal protector
	part No.	Resistance		Weight	Free air	with fan 1 m/s	
		Ω	mm	kg	w	v v	
DV0P4280	RF70M	50		0.1	10	25	
DV0P4281	RF70M	100		0.1	10	25	
DV0P4282	RF180B	25	A1.07	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	1	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.

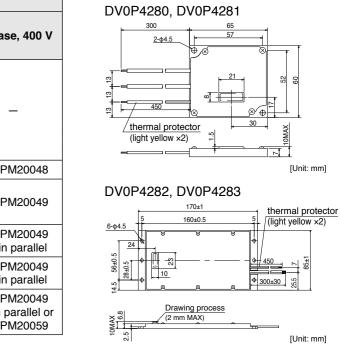
		Power supply	
Frame	Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-pha
А	DV0P4280	DV0P4281 (50 W, 100 W) DV0P4283 (200 W)	
В	DV0P4283	DV0P4283	
С	DV0P4282	DV0F4203	
D		DV0P4284	DV0P
E		DV0P4284 × 2 in parallel or DV0P4285	DV0P
F	_	DV0P4285 × 2 in parallel	DV0P × 2 in
G		DV0P4285 × 3 in parallel	DV0P × 3 in
Н		DV0P4285 × 6 in parallel or DV0PM20058	DV0P × 6 in p DV0P

A5 Family Options

A5 Family

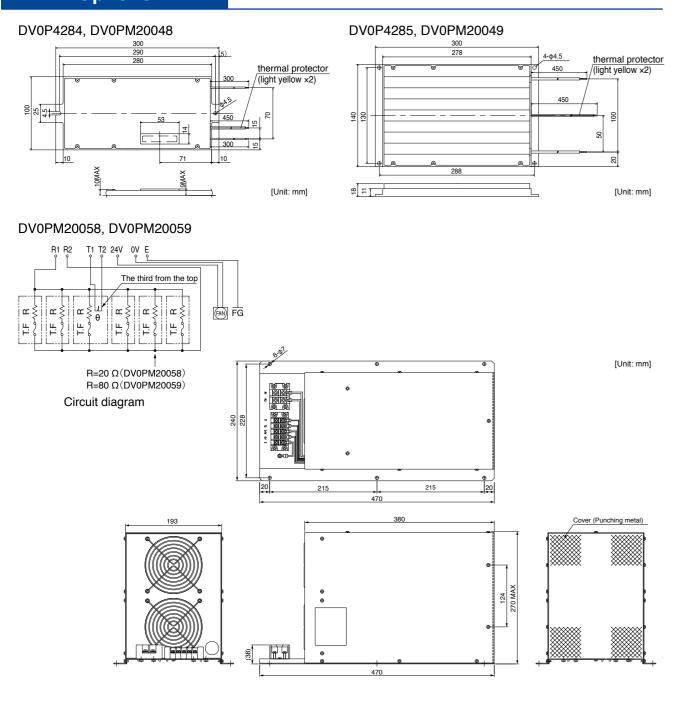
The circuit should be so designed that the power supply will be turned off as the thermal protector operates.

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
	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
-	I		

<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.

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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/	External scale
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/	Enternal Stale
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/	Noise filter
TDK-Lambda Corporation	+81-3-5201-7140 http://www.tdk-lambda.com/	

* 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 Driver

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

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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

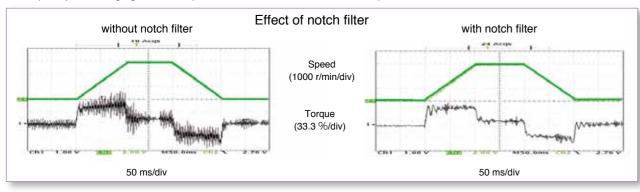
DIN-rail mounting unit (option)

DIN-rail mounting unit allows parallel mounting with small

control devices such as PLC.

Easy to mount and easy to dismount.

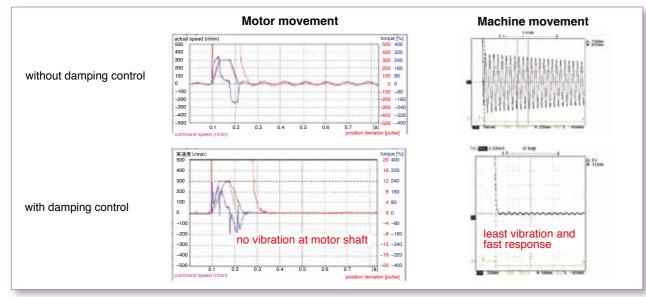
- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain tuning.
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.
- dent from adaptive filter.
 Each 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 CSA22.2 No.100	Conforms to Low-Voltage
	EN50178	UL508C CSA22.2 No.14	Directives
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	
	EN61000-6-2	Immunity for Industrial Environments	
	EC61000-4-2	Electrostatic Discharge Immunity Test	
Motor and driver	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	Conforms to references
unver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives
	IEC61000-4-5	Lightening Surge Immunity Test	
	IEC61000-4-6	High Frequency Conduction Immunity Test	
	IEC61000-4-11	Instantaneous Outage Immunity Test	1
EN : E EMC : E UL : U	nternational Elec Europaischen No Electromagnetic (Inderwriters Lab Canadian Standa	Compatibility oratories	
Pursuar	nt to at the directi	ve 2004/108/EC,article 9(2)	
	nic Testing Centr		

Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH Winsbergring 15, 22525 Hamburg EB Germany

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

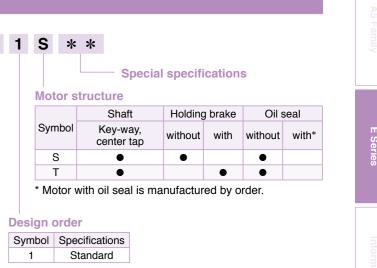
M U M A 0 1 1 P 3 1 N

			Motor	rated o	output	
Symbol	Туре		Symbo	Rateo	l output	
	Ultra low in	ertia	01	10	0 W 0	1
MUMA	(100 W to 40	(W 00	02	20	0 W 0	
			04	40	0 W 0	1
			Specific			
			e specif			
		1	100	V		
		2	200	V		
Rotary e	encoder spe	cificat	tions —			
Symbol	Format	P	ulse cour	ts Res	solution	Wi
Р	Incrementa	l	2500 P/r	1	0000	Į

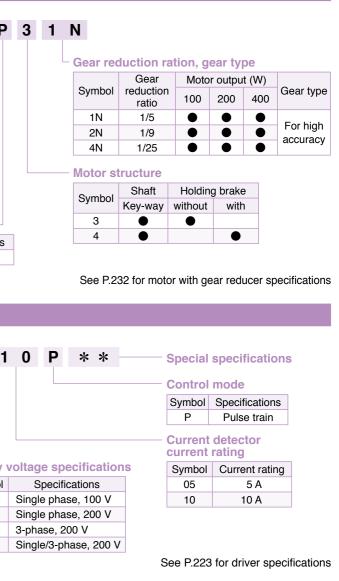
Servo Driver

		М	K	D	Ε	Т	1	3	1
Frame s	ymbol —								
Symbol	Fra	me							
MKDE	E series,	K-fran	ne						
MLDE	E series,	L-fran	ne						
	P							Supp	oly v
		wer d ax. cu			ina			Sym	loc
		vmbol			rating			1	
	5	T1	0	10		-		2	
		••						3	
		T2		15	A			5	

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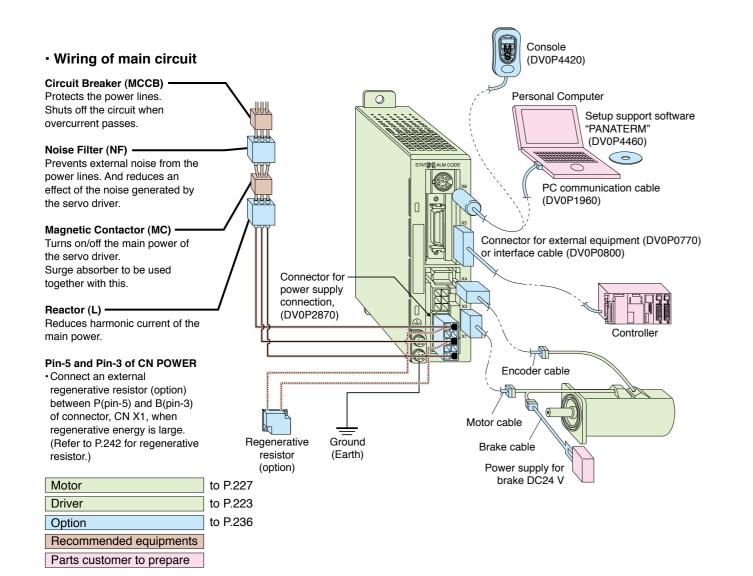


See P.227 for motor specifications



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Overall Wiring/ Driver and List of Applicable Peripheral Equipments



List of recommended peripheral equipments

_	Motor		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)		(01 +14)																			
		50 W	0.3 kVA																						
Single		100 W	0.3 KVA	(5 A) 15 A	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	
phase, 200 V	MUMA	200 W	0.5 kVA						(3P+1a)	0.75 mm ² to 0.85 mm ² AWG18															
200 1		400 W	0.9 kVA	(10 A)	(10 A)		AWGIO																		
	1	50 W	0.0 14/4	(5 A) 10 A																					
3-phase		100 W	0.3 kVA			(5 A) 10 A	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	(5 A)	10 A									
200 V		200 W	0.5 kVA		(3P+1a)		(3P+1a)																		
		400 W	0.9 kVA	(10 A)																					

* Select the single and 3-phase common specifications corresponding to the power supplies.

To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, 🖲 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	Brake Cable Note) 2	External Regenerative Resistor	Reactor	Noise Filter							
Single	50	MUMA5AZP1 🗌	227	MKDET1105P	226 (K)					DV0P227								
phase	100	MUMA011P1 🗌	227	MKDET1110P	226 (K)				DV0P2890	DV01 221								
100 V	200	MUMA021P1	227	MLDET2110P	226 (L)					DV0P228								
	50	MUMA5AZP1	229	MKDET1505P	226 (K)													
Single	100	MUMA012P1	229	MKDET1505P	226 (K)													
phase 200 V	200	MUMA022P1	229	MLDET2210P	226 (L)							.6 (L)	26 (L) MFECA0 * * 0EAM					
	400	MUMA042P1	229	MLDET2510P	226 (L)		MFMCA0 * *0AEB	MFMCB0 * * 0GE			DV0P4160							
	50	MUMA5AZP1	229	MKDET1505P	226 (K)	-			DV0P2891	DV0P220								
	100	MUMA012P1	229	MKDET1505P	226 (K)													
3-phase 200 V	200	MUMA022P1	229	MKDET1310P	226 (K)													
200 V	400		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.

	Opt	ions	i	Part No.	Carrying page
Console				DV0P4420	241
Setup Support			Japanese		
Software, PANATERM			English	DV0P4460	236
RS232 Commu (for Connection				DV0P1960	241
Interface Cable)			DV0P0800	241
Connector Kit f	or E	xterr	nal Equipment	DV0P0770	240
Connector Kit f	or N	lotor	and Encoder	DV0P3670	239
Connector Kit f	or D	river	Power Supply	DV0P2870	239
Encoder Cable			MFECA0 * *	0EAM	238
Motor Cable			MFMCA0 * *	238	
Brake Cable			MFMCB0 * *	238	
Cable Set (3 m) ^{(Not}	e 3)	DV0P37300	238	
Cable Set (5 m) ^{(Not}	e 3)	DV0P39200	238	
DIN Rail Mount	t Un	it	DV0P3811		242
External Regenerative	10	0 V	50 Ω 10 W	DV0P2890	242
Resistor	20	0 V	100 Ω 10 W	DV0P2891	242
			100 V	DV0P227	
Reactor			100 V	DV0P228	243
			200 V	DV0P220	
Noise Filter	Noise Filter			DV0P4160	256
			gle phase) V, 200 V	DV0P4190	256
-		3-р	hase 200 V	DV0P1450	
Noise Filter for	DV0P1460	256			

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

amily

E Series

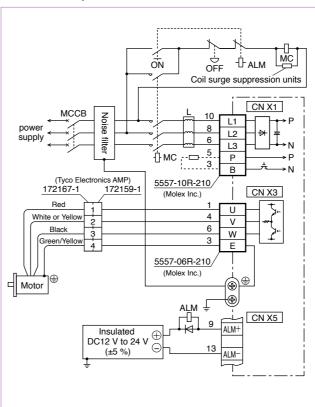
Driver Specifications

	In	Sing	gle 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	nase, 200 V	3-phase, 200 V to 240 V +10 % -15 % 50 Hz/60 Hz
	ĒŊ	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	Altit	ude	1000 m or lower
	nt	Vibr	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.
ł		trol m		IGBT PWM Sinusoidal wave drive
			eedback	2500 P/r (10000 resolution) incremental encoder
ł				
	Control	Inpu Out		 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.
+		1		
c	Pulse signal	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.
	_ •	Out		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	ED	(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)
ľ	Req	enera	tion	No built-in regenerative resistor (external resistor only)
		, iamic t		Built-in
	Dyn		Jake	
	Con	itrol m	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)
	ositio		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>o</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
	mal	Con	trol output	(1) Speed arrival (at-speed)
	spe	Inter	rnal speed command	Internal 4-speed is selectable with control input.
	Internal speed control	Soft	-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.
1			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	control, (2) Internal speed control and (3) High-functionality position control. Masking of the following input signal is enabled.
	Co	inpu Divis	t sion of encoder feedback	 (1) Over-travel inhibition, (2) Speed zero clamp, (3) Torque limit switching 1 P/r to 2500 P/r (encoder pulses count is the max.).
	Common	puls	e	
	on	Protective function	Hardware error	Over-voltage, under-voltage, over-speed over-load, over-heat, over-current and encoder error etc.
		on	Software error	Excess position deviation, command pulse division error, EEPROM error etc.
		Trac	eability of alarm data	Traceable up to past 14 alarms including the present one.
			nping control function	Manual setup with parameter
			Manual	Console
		Setup		
		σ	Setup support software	PANATERM (Supporting OS : Windows98, Windows ME, Windows2000, and WindowsXP)

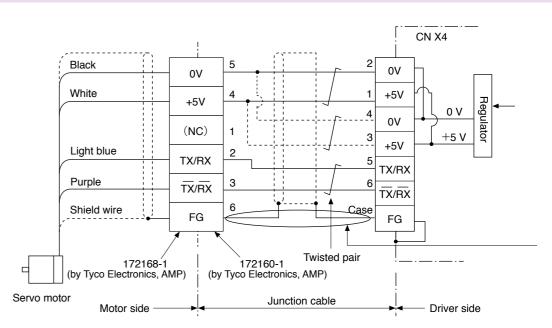
Standard Wiring Example of Main Circuit/ **Encorder Wiring Diagram**

Standard Wiring Example of Main Circuit

3-Phase, 200 V



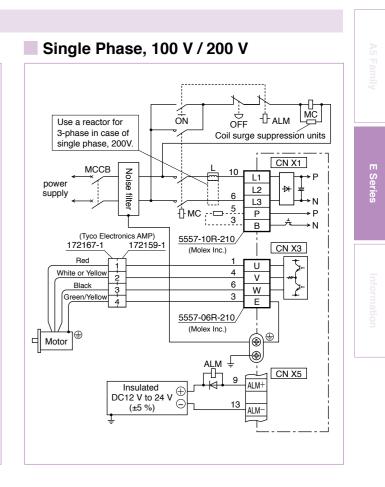
Encorder Wiring Diagram



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



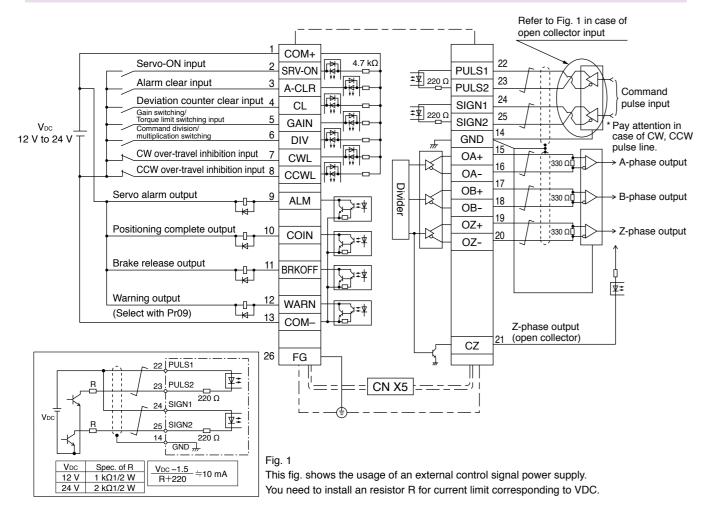
When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher

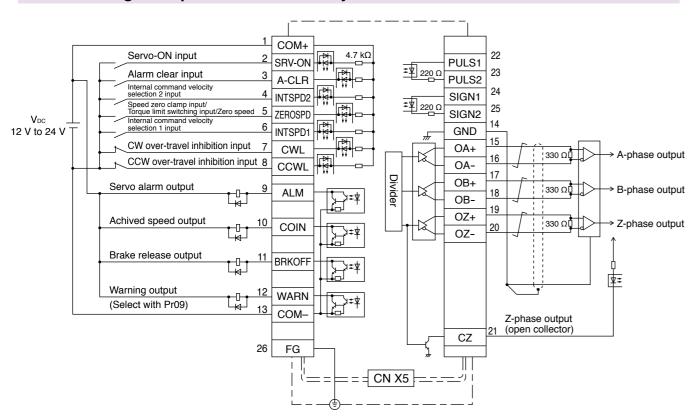
Wiring Diagram

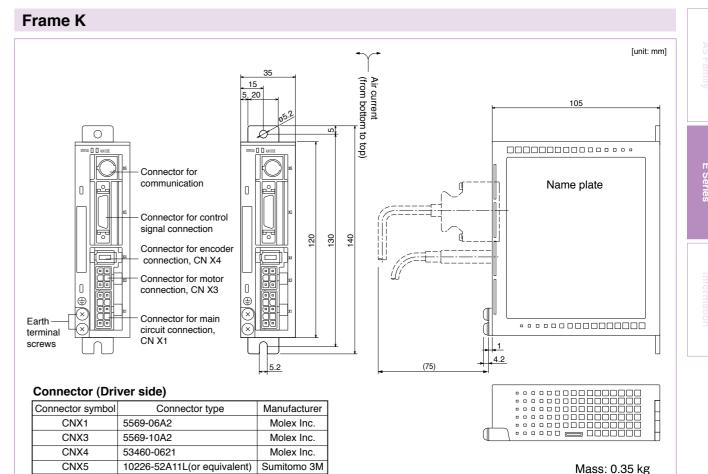
Control Circuit Standard Wiring Example

CN X 5 Wiring Example at Position Control Mode



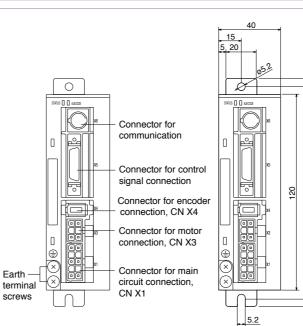
CN X 5 Wiring Example at Internal Velocity Control Mode





Connector (Driver side)							
Connector symbol	Connector type	Manufacturer					
CNX1	5569-06A2	Molex Inc.					
CNX3	5569-10A2	Molex Inc.					
CNX4	53460-0621	Molex Inc.					
CNIVE	10000 50 411 (ar aguin alamt)	Cumitoma OM					

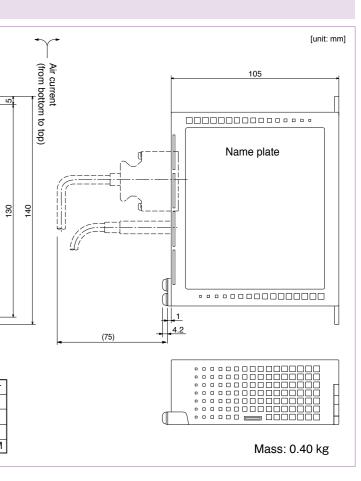




Connector (Driver side)

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]

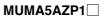
				AC100 V				
Rated output (W) Rated torque (N·m) Momentary Max. peak Rated current (Arms) Max. current (Ao-p) Regenerative brake frequency times/min) Note)1 Rated rotational speed Max. rotational speed Moment of inertia of rotor ×10 ⁻⁴ kg·m ²) Recommended mome of the load and the rotation Rotary encoder specific		MUMA	5AZP1	011P1	021P1			
applicable driver F rower supply capacity (KV/ tated output (W) tated torque (N·m) domentary Max. peak torq tated current (Arms) tated current (Arms) tated current (Arms) tated current (Ao-p) tegenerative brake W requency Note)1 tated rotational speed (r/mint) Note)1 tated rotational speed (r/mint) W fortor W k10 ⁻⁴ kg·m ²) W tecommended moment of M the load and the rotor Resolution p Protective enclosure rating Ambient ter invironment Ambient ter Ambient hu Installation	Model No.	MKDET1105P	MKDET1110P	MLDET2110P				
Applicable driv	Accepted by the symbol capacity (kVA) W) N·m) ax. peak torque (N·m) (Arms) Ac-p) brake Without option Note)1 DV0P2890 al speed (r/min) It speed (r/min) rtia Without brake d moment of inertia ratio ather rotor Note)3 er specifications Resolution per single turn closure rating Ambient temperature Ambient humidity Installation location Altitude	Frame symbol	Fram	ne K	Frame L			
Power supply	capacity (kVA)	0.3	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	MLDET2110F Frame L 0.5 200 0.64 1.91 2.5 11.7 0.10 0.13			
frequency (times/min)	Note)1	DV0P2890		No limit Note)2				
Rated rotation	al speed	(r/min)		3000				
Max. rotationa	al speed (r	/min)		5000				
	ent of inertia Without brake		0.021	0.032	0.10			
of rotor (×10 ⁻⁴ kg·m²)		With brake	0.026	0.036				
			30 times or less					
.				2500 P/r				
Rotary encod	er specific	cations		Incremental				
	Resolutio	on per single turn		10000				
Protective en	closure ra	ting	IP65 (except ro	tating portion of output shaft and	lead wire end)			
	Ambient	temperature						
	Ambient	t humidity	85 %	RH or lower (free from condensi	11.7 0.10 0.13			
Environment	Installat	ion location	Indoors (no direct sunlight),	free from corrosive gas, inflamma				
	Altitude			5000 0.032 0.10 0.036 0.13 30 times or less 2500 P/r Incremental 10000 tept rotating portion of output shaft and lead wire end) 40 °C (free from freezing), Storage : -20 °C to 65 °C rature guarantee 80 °C for 72 hours <nomal humidity="">) 85 %RH or lower (free from condensing) nlight), free from corrosive gas, inflammable gas, oil mist and du 1000 m or lower 49 m/s² or less</nomal>				
	Vibratio	n resistance		49 m/s ² or less				
Mass (kg), ()	represents	holding brake type	0.4 (0.6)	0.5 (0.7)	0.96 (1.36)			

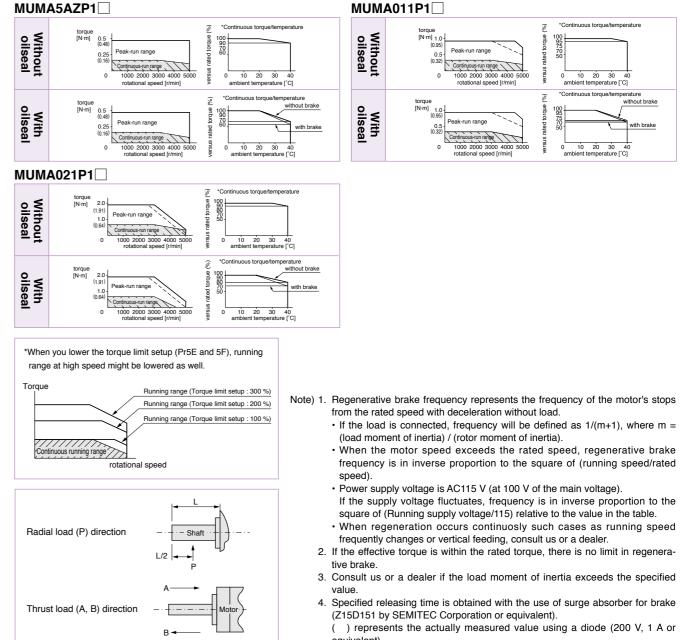
Brake spec	cifications (This brake wil	I be released when it is energized. Do not use this for braking	the motor in motion.)
Static friction	n torque (N·m)	0.29	1.27
Engaging tir	me (ms)	25	50
Releasing ti	me (ms) Note)4	20 (30)	15 (100)
Exciting cur	rent (DC) (A)	0.26	0.36
Releasing v	oltage	DC 1 V or more	·
Exciting volt	age	DV 24 V ±10 %	
Permissible	load		
_ ·	Radial load P-direction (N)	147	392
During assembly	Thrust load A-direction (N)	88	147
	Thrust load B-direction (N)	117	196
	Radial load P-direction (N)	68	245
During operation	Thrust load A-direction (N)	58	98
	Thrust load B-direction (N)	58	98

For motor dimensions, refer to P.231, and for the diver, refer to P.226.

g.) <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 sea	al
Notor rate	ed output		Voltage s	pecifications		Symbol	Key-way, center tap	rithout with	without	with
Symbol	Rated output	:	Symbol	Specifications		S		•	•	
5A	50 W	1	1	100 V		T	•	•	•	
01	100 W		Z	100/200 V						
02	200 W]	L	(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.)]





- 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 Ma	ax. peak to	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. rotationa	l speed (r	/min)		50	000				
Moment of ine	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 or less						
Rotary encode	reposific	ations		250	0 P/r				
notary encode	i specifica			Incre	mental				
	Resolut	ion per single turn		10	000				
Protective enc	losure rati	ing	IP65 (e	except 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>				
	Ambier	nt 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	² or less				
Mass (kg), () r	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	4 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
	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.

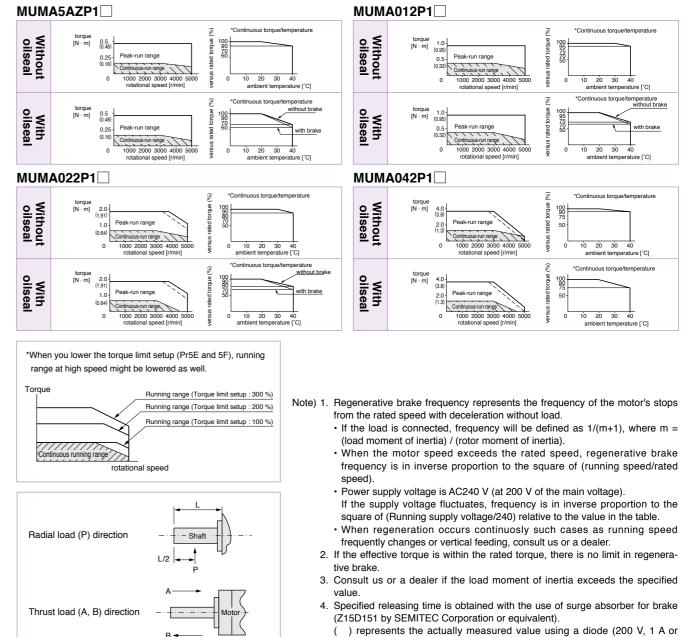
Driver for 200 W, the upper row is the power supply of 3-phase 200 V, and lower is the power supply of single-phase 200 V.

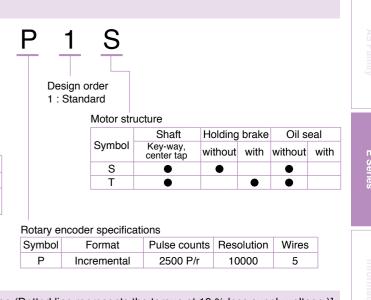
Driver for 400 W, the upper row is the power supply of 3-phase 200 V, and lower is the common power supply of single-phase and 3-phase 200 V.

N	lode	el C	Design	ati	on					
e.ę	g.)	N	I U		Μ	Α		5	Α	Ζ
	Symbol Ty			эе						
	MUMA Ultra low (50 W to									
	Motor	rate	ed output				Volta	ge spe	cification	s
	Symb	ool	Rated out	put			Sym	bol	Specifica	tions
	5A		50 W			2			200 \	V
	01		100 W				7		100/20	
	02		200 W				2		(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.)]



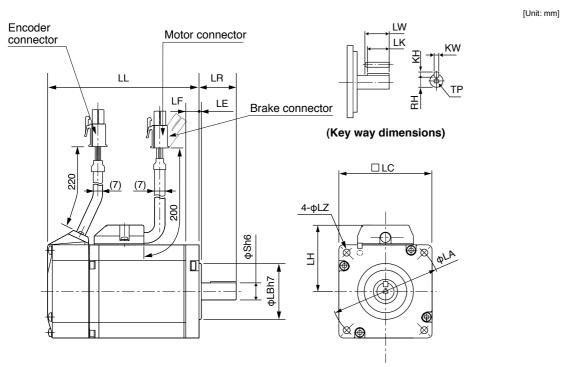




- () represents the actually measured value using a diode (200 V, 1 A or equivalent)

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		
		Without brake	75.5	92.5	96	123.5		
S L L L		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	42 60			
	LE		2	2	3	3		
	LF		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)		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**

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	on				
e.g.)	Μ	U	Μ	A	A ()	1	1
	Symbol		Туре					
	MUMA	Low inertia (100 to 400 W)						
	Motor rate	ed outp	out ——					
	Symbol	Rateo	l output		Valtaga		ification	
	01	10	0 W 0		Voltage s	_		
	02	20	0 W 0		Symbol	S	pecifica	
	04	40	0 W 0		1		100 \	/
					2		200 \	/
Rot	ary encod	der spe	cification	is —				
S	/mbol	Fo	rmat	P	ulse count	ts	Pulse of	counts

Specifications of Motor with Gear Reducer

Incremental

2500 P/r

Р

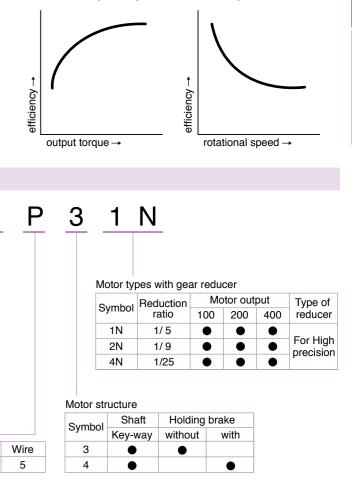
	Motor type	MUMA					
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer					
	Composition of gear	Planetary gear					
	Gear efficiency	65 % to 85 %					
0	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft					
Gear	Composition of gear	Planetary gear					
reducer	Mounting method	Flange mounting					
	Permissible moment of inertia of the load	10 times of smaller these values means of insuling of the meter					
	(conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor					
	Protective structure	IP44 (at gear reducer)					
	Ambient temperature	0 °C to 40 °C					
-	Ambient humidity	85 %RH (free from condensation) or less					
Environment	Vibration resistance	49 m/s ² or less (at motor frame)					
	Impact resistance	98 m/s ² or less					

E Series

Motors with Gear Reducer

MINAS 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	UMA with g	ear reduc	er				
Model	Output	Reduction ratio	Output	Rated speed		torque	Peak max. torque	Moment of inertia (motor + reducer/converted) to motor shaft		·			Permissible
								w/o brake	w/ brake	w/o brake	w/ brake	radial load	thrust load
	(W)		(W)	(r/min)			(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.

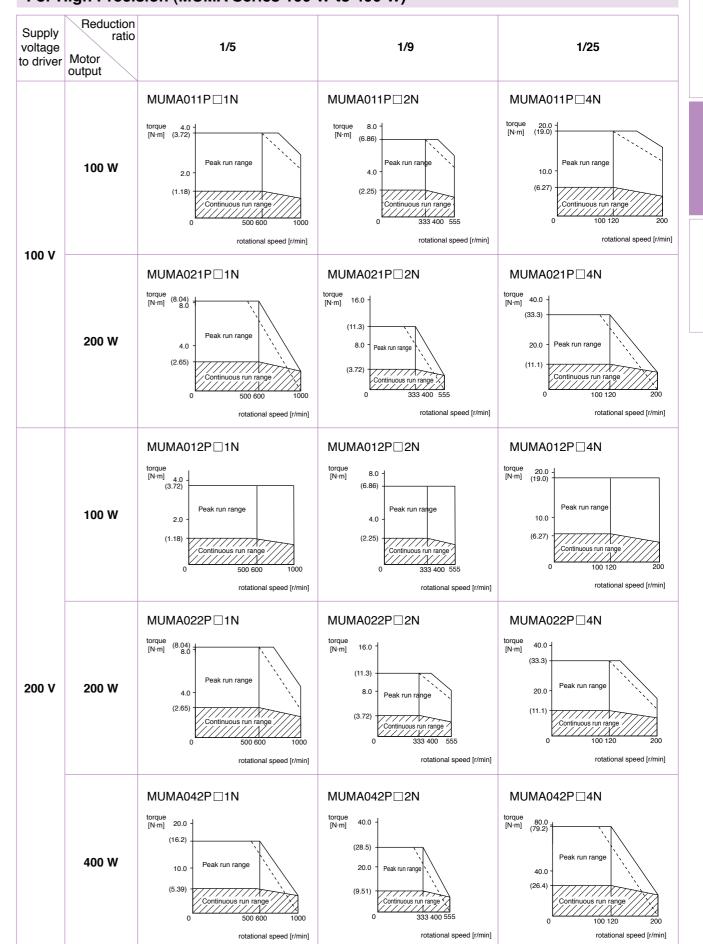
The Combination of the Driver and the Motor with Gear Reducer

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 _			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.

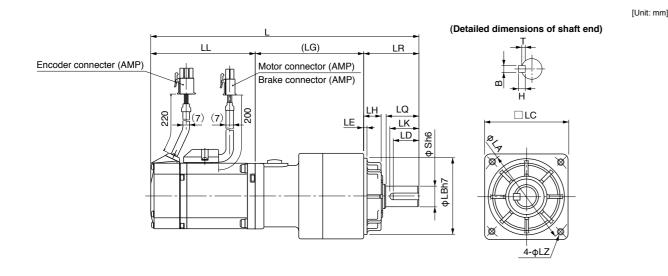
E Series

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 00	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	70	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	12.5		424210	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										100			
		1/20	279	129	50	30	78	70	90	19	17	M6	26	100		6×6×22	3.5
MUMA042P 1N		1/5	263	123.5	50	50	70	70	90	19	17	(Depth: 20)	20			0X0X22	5.5
		175	296	156.5										89.5			
MUMA042P 2N	400 W	1/9	263	123.5										09.0			
	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)	35	104	5	0×/×30	4

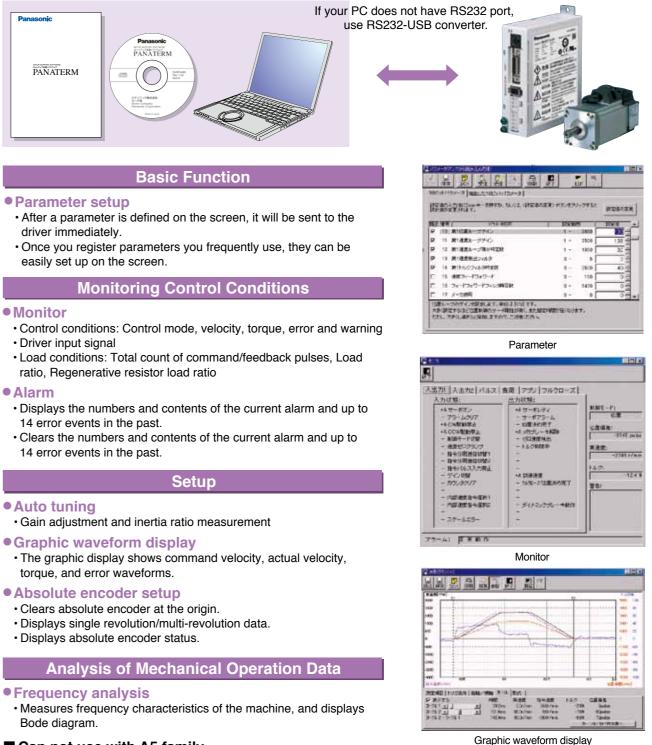
Upper column : without brake Lower column · with brake

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

Graphic waveform display

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

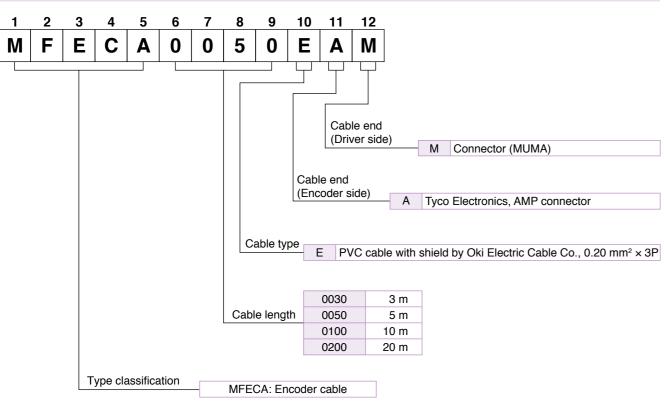
• Hard disk capacity (vacancy of 25 MB or more recommended) • OS : Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version) · Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

Ε	Series

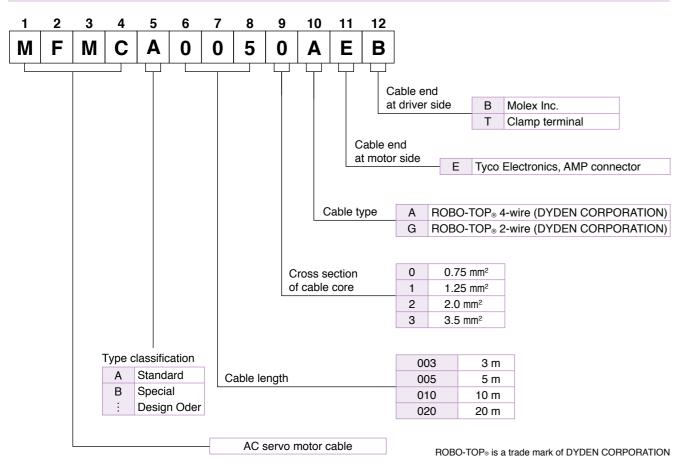
Options

Cable part No. Designation

Encoder Cable



Motor Cable, Brake Cable



Cable

D	DV/0D07000					
Part No.	DV0P37300			/0P39200		
	e cable : DV0P0800		1) Interface ca			
-	r cable (3 m) : MFEC		2) Encoder ca			
-	able (3 m) : MFMCA		3) Motor cable			
DV0P28	-	er supply connection :	DV0P2870	at for aniver p	ower sup	ply connection :
ncoder	Cable					
Part No.	MFECA0 * * 0E	АМ				
						[Unit: r
	Title	Part No.		facturer	L (m)	Part No.
Con	nector (Driver side) Shell kit	3E206-0100KV		omo 3M uivalent	3	MFECA0030EAN MFECA0050EAN
		3E306-3200-008		uivalent	5	
		172160-1			10	MEECA0100EAN
	Connector	172160-1 170365-1		lectronics	10	MFECA0100EAN MFECA0200EAN
	Connector Connector Pin Cable	172160-1 170365-1 0.20 mm ² × 3P P _® 105 °C 600 V . DP)	Тусо Е	Cable Co., Ltd.	20	MFECA0100EAN MFECA0200EAN of DYDEN CORPORATIO
	Connector Connector Pin Cable	170365-1 0.20 mm ² × 3P P _® 105 °C 600 V . DP)	Тусо Е	Cable Co., Ltd.	20	MFECA0200EAN
lotor Ca	Connector Connector Pin Cable Able (ROBO-TC MFMCA0 * * 04	170365-1 0.20 mm ² × 3P P _® 105 °C 600 V . DP)	Oki Electric	Cable Co., Ltd.	20	MFECA0200EAN
lotor Ca	Connector Cable Able (ROBO-TC MFMCA0 * * 0A	170365-1 0.20 mm ² × 3P PP _® 105 °C 600 V . DP) EB	Oki Electric	Cable Co., Ltd.	20	MFECA0200EAN
lotor Ca	Connector Connector Pin Cable able (ROBO-TC MFMCA0 * * 0A	170365-1 0.20 mm ² × 3P P _® 105 °C 600 V . DP) EB	Oki Electric	Cable Co., Ltd. ROBO-TOP₀ i	s a trade mark	MFECA0200EAN
Part No.	Connector Cable Cable Able (ROBO-TC MFMCA0 * * 0A	170365-1 0.20 mm ² × 3P P _® 105 °C 600 V . DP) KEB 50) L (50) € Part No. 172159-1 170362-1, 170366-1	Oki Electric	Cable Co., Ltd. ROBO-TOP₀ i	s a trade mark	MFECA0200EAN of DYDEN CORPORATIO [Unit: r [Unit: r MFMCA0030AEI MFMCA0050AEI
Part No.	Connector Cable Cable Able (ROBO-TC MFMCA0 * * 0A	170365-1 0.20 mm ² × 3P P _® 105 °C 600 V . DP) KEB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210	Oki Electric	Cable Co., Ltd. ROBO-TOP₀ i	s a trade mark	MFECA0200EAN of DYDEN CORPORATIO [Unit: r [Unit: r MFMCA0030AEI MFMCA0050AEI MFMCA0100AEI
Part No.	Connector Connector Pin Cable Able (ROBO-TC MFMCA0 * * 0A MFMCA0 * * 0A Connector Connector Pin Connector Pin Connector Pin Connector Pin	$170365-1$ 0.20 mm ² × 3P $P_{\circledast} 105 °C 600 V . DP$ EB $50) L (50)$ $Fart No.$ $172159-1$ $170362-1, 170366-1$ $5557-06R-210$ $5556T$	Chi Electric	facturer lectronics	s a trade mark	MFECA0200EAN of DYDEN CORPORATIO [Unit: r [Unit: r MFMCA0030AEI MFMCA0050AEI
Part No.	Connector Cable Cable Able (ROBO-TC MFMCA0 * * 0A	170365-1 0.20 mm ² × 3P P _® 105 °C 600 V . DP) KEB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210	Chi Electric	Cable Co., Ltd. ROBO-TOP _® i facturer lectronics	s a trade mark	MFECA0200EAN of DYDEN CORPORATIO [Unit: r [Unit: r MFMCA0030AEI MFMCA0050AEI MFMCA0100AEI
Part No.	Connector Cable Cable Able (ROBO-TC MFMCA0 * * 0A MFMCA0 * * 0A Connector Connector Connector Pin Connector Pin	170365-1 0.20 mm ² × 3P 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	Chi Electric	Cable Co., Ltd. ROBO-TOP _® i facturer lectronics lex Inc n Co.,Ltd.	s a trade mark L (m) 3 5 10 20	MFECA0200EAN of DYDEN CORPORATIC [Unit: r [Unit: r MFMCA0030AEI MFMCA0030AEI MFMCA0100AEI MFMCA0200AEI
lotor Ca Part No.	Connector Cable Able (ROBO-TC MFMCA0 * * 0A MFMCA0 * * 0A Connector Connector Connector Connector Pin Connector Connector Pin Connector Connector Pin Cable	170365-1 0.20 mm ² × 3P P P 105 °C 600 V . DP) EB 50	Chi Electric	Cable Co., Ltd. ROBO-TOP _® i facturer lectronics lex Inc n Co.,Ltd.	s a trade mark L (m) 3 5 10 20	MFECA0200EAN of DYDEN CORPORATIO [Unit: r [Unit: r MFMCA0030AEI MFMCA0050AEI MFMCA0100AEI
Part No.	Connector Cable Cable Able (ROBO-TC MFMCA0 * * 0A MFMCA0 * * 0A Connector Connector Connector Pin Connector Pin	170365-1 0.20 mm ² × 3P 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	Oki Electric Oki Electric Manu Tyco E Mol Daider	Cable Co., Ltd. ROBO-TOP _® i facturer lectronics lex Inc n Co.,Ltd.	s a trade mark L (m) 3 5 10 20	MFECA0200EAN of DYDEN CORPORATIC [Unit: r [Unit: r MFMCA0030AEI MFMCA0050AEI MFMCA0100AEI MFMCA0200AEI of DYDEN CORPORATIC
lotor Ca Part No.	Connector Cable Able (ROBO-TC MFMCA0 * * 0A MFMCA0 * * 0A Connector Connector Connector Connector Pin Connector Connector Pin Connector Connector Pin Cable	170365-1 0.20 mm ² × 3P P P 105 °C 600 V . DP) EB 50	Chi Electric	Cable Co., Ltd. ROBO-TOP _® i facturer lectronics lex Inc n Co.,Ltd.	s a trade mark L (m) 3 5 10 20	MFECA0200EAN of DYDEN CORPORATIC [Unit: r [Unit: r MFMCA0030AEI MFMCA0030AEI MFMCA0100AEI MFMCA0200AEI

Image: connector (Driver side) Step is the stade mark of DYDEN CORPORATION Shell kit 3E306-0100KV Sumitorno 3M Connector (Driver side) 3E206-0100KV Sumitorno 3M Connector (Driver side) 3E306-0200-008 or equivalent Connector Pin 172180-1 Tyco Electronics Connector Pin 170386-1 Tyco Electronics Connector Pin 0.20 mm² x 3P Oki Electric Cable Co., Ltd. OK Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP is a trade mark of DYDEN CORPORATION (unit: mr (S0)					Jpuc	DIIS
Image: cable : DV0P0800 norder cable (3 m) : MFECA0030EAM lotor cable (3 m) : MFECA0030EAM onnector kit for driver power supply connection : V0P2870 onder Cable two MFECA030EAM 0 montext kit for driver power supply connection : v0P2870 order Cable two MFECA0 * * 0EAM image: cable : two MFECA030EAM shell kit 3E306-3200-006 or equivalent Connector / Intre- 172:160-1 Type Electronics two two MFECA0200EAM two	e Set (3 m)		Cable Set (5 m)		
ncoder cable (3 m): MFECA0030AEM 2) Encoder cable (5 m): MFECA0050AEM 10 monector kit for driver power supply connection : 3) Micro cable (5 m): MFECA0050AEM 10 Connector kit for driver power supply connection : DV0P2870 Doder Cable (unit may be a back mark of the second power supply connection : Doder Cable (unit may be a back mark of the second power supply connection : Title Part No. Connector (Driver side) 32006-0100KV Connector (Driver side) 32006-0100KV Connector Pin 172160-1 Tyoo Electronics Connector Pin 172150-1 Tyoo Electronics Connector Pin 172159-1 Tyoo Electronics Connector Pin 172159-1 Tyoo Electronics Connector Pin 172382-1, 170386-1 Tyoo Electronics Connector Pin 172382-1, 170386-1 Tyoo Electronics Connector Pin 172382-1, 170386-1 Tyoo Electronics S MFMCA0030AEB S	No. DV0P37300		Part No. D	/0P39200		
INO. MFECA0 ** 0EAM (Unit: mm (Interverside) 3E206-0100KV Summing and association of a equivalent Shell kit 3E206-0100KV Summing and association of a equivalent Connector Pin T72160-1 Type Celectronics (MFECA03020EAM Connector Pin T70365-1 Type Celectronics Connector Pin T70362-1 Type	coder cable (3 m) : MFE otor cable (3 m) : MFMC nnector kit for driver pov	CA0030EAM A0030AEB	 2) Encoder ca 3) Motor cable 4) Connector 	ble (5 m) : MFE e (5 m) : MFMC#	CA0050 40050A	EB
Image: construction of the second s	der Cable					
Image: State of the second se	No. MFECA0 * * 0	EAM				
Connector (Driver side) 3E206-0100KV Sumitorno 3M or equivalent 3 MFECA0030EAM Connector 172160-1 Tyco Electronics 5 MFECA0030EAM Connector 172160-1 Tyco Electronics 0 MFECA0200EAM Connector 0.20 mm² x 3P Oki Electric Cable Co., Ltd. 0 MFECA0200EAM or Cable (ROBO-TOP _®) 105 °C 600 V . DP) ROBO-TOP _a is a trade mark of DYDEN CORPORATION iNo. MFMCA0 ** 0AEB (50) L (50) L (50) Title Part No. Manufacturer 1 MFMCA0300AEB 10 MFMCA0300AEB Connector Pin 170366-1 Tyco Electronics 3 MFMCA0030AEB 5 MFMCA0030AEB Connector Pin 170362-1, 170366-1 Tyco Electronics 3 MFMCA0030AEB 5 MFMCA0030AEB Connector Pin 5557-0GR-210 Molex Inc 3 MFMCA0200AEB 3 MFMCA0200AEB 3 3 MFMCA0200AEB 3 MFMCA0200AEB 3 3 MFMCA0200AEB 3 3 MFMCA0200AEB 3 MFMCA0200AEB 3 MFMCA0200AE						[Unit: mm]
Shell kit 3E306-3200-008 or equivalent Connector 172160-1 Tyco Electronics Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. or Cable (ROBO-TOP® 105 °C 600 V . DP) ROBO-TOP, is a trade mark of DYDEN CORPORATION No. MFMCA0 ** 0AEB (10) (50) (11) (50) (12) (50) (11) (11) (12) (12) (13) (12) (14) (10) (15) (10) (16) (10) (17) (10) (10) (10) (11) (10) (11) (10) (11) (10) (11) (10) (11) (11) (11) (11) (11) (11) (11) (11) (11) (11) (11) (11) (12) (11) (11) (11) (12) (11) (11) (11) (12) (Title	Part No.	Manu	ifacturer	L (m)	Part No.
Connector 172160-1 Tyco Electronics Connector Pin 170365-1 Tyco Electric Cable Co., Ltd. r Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. r Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP _* is a trade mark of DYDEN CORPORATION No. MFMCA0 ** 0AEB [Unit: mm] Image: Connector 172159-1 Tyco Electronics Connector Pin 170382-1, 170386-1 Tyco Electronics Connector Pin 170382-1, 170386-1 Tyco Electronics Connector Pin 5557-06R-210 Molex Inc Connector Pin 55567 Molex Inc Cable ROBO-TOP _® 105 °C 600V . DP) ROBO-TOP _* is a trade mark of DYDEN CORPORATION e Cable (ROBO-TOP _® 105 °C 600V . DP) ROBO-TOP _* is a trade mark of DYDEN CORPORATION No. MFMCB0 ** 0GET [Unit: mm] Image: Grade mark of DYDEN CORPORATION Image: Grade mark of DYDEN CORPORATION	Connector (Driver side)	3E206-0100KV	Sumi	tomo 3M	3	MFECA0030EAM
Connector Pin 170365-1 Tyce Electronics Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. r Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATION No. MFMCA0 ** 0AEB (Juni: mm² Image: Connector Pin 170365-1 Tyce Electronics Connector Pin 170365-1 Tyce Electronics Connector Pin 170362-1, 170366-1 Tyce Electronics Connector Pin 5557-06R-210 Molex Inc Connector Pin 5556T Molex Inc Cable ROBO-TOP © 105 °C 600V . DP) Robo-top is a trade mark of DYDEN CORPORATION Connector Pin 5556T Molex Inc MFMCA0200AEB Cable ROBO-TOP @ 105 °C 600V . DP) RoBo-top @ 1a trade mark of DYDEN CORPORATION MFMCB0 ** 0GET (Juni: mm² (40) L (50) (Juni: mm² Unit: mm² (Juni: mm² (Juni: mm² Unit: mm² (Juni: mm² (Juni: mm²	Shell kit	3E306-3200-008	or eq	luivalent	5	MFECA0050EAM
Connector Prin 170365-1 Oki Electric Cable Co., Ltd. Cable 0.20 mm² x 3P Oki Electric Cable Co., Ltd. Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP _» is a trade mark of DYDEN CORPORATION No. MFMCA0 * * 0AEB [Unit: mr Connector 172159-1 Tyco Electronics Connector Pin 170366-1 Tyco Electronics Connector Pin 55567 Molex Inc Connector Pin 55567 Molex Inc Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. e Cable (ROBO-TOP 8 105 °C 600V . DP) ROBO-TOP, is a trade mark of DYDEN CORPORATION MFMCA0200AEB [Unit: mr	Connector	172160-1	Tvco F		10	MFECA0100EAM
Cable (ROBO-TOP _® 105 °C 600 V . DP) ROBO-TOP _* is a trade mark of DYDEN CORPORATION No. MFMCA0 * * 0AEB [Unit: mr (50) (50) [Unit: mr (50) (10) [Unit: mr (50) (10) [Unit: mr (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10)	Connector Pin	170365-1	Tycol		20	MFECA0200EAM
Title Part No. Manufacturer Connector 172159-1 Tyco Electronics 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® is a trade mark of DYDEN CORPORATION (40) L (50) (Unit: mm	<u>No. MFMCA0 * * 0</u>	(50) L	(50)			[Unit: mm]
Connector 172159-1 Tyco Electronics 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. e Cable (ROBO-TOP _® 105 °C 600V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATION No. MFMCB0 ** 0GET (40) L (50) (40) L (50) (10) L (50)	$\begin{array}{c c} \underbrace{\mathbb{C}}_{\underline{1}} & \underbrace{\mathbb{L}}_{\underline{1}} & \underbrace{\mathbb{L}}_{\underline{1}} \\ (\underline{4}) & \underbrace{\mathbb{L}}_{\underline{1}} & \underbrace{\mathbb{C}}_{\underline{1}} \\ (\underline{4}) & \underbrace{\mathbb{L}}_{\underline{1}} & \underbrace{\mathbb{C}}_{\underline{1}} \\ (\underline{4}) & \underbrace{\mathbb{C}}_{\underline{1}} \\ (\underline$					
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. E Cable (ROBO-TOP® 105 °C 600V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATION No. MFMCB0 * * 0GET (40) L (50) (40) L (50) (10) (Unit: mm)			Manu	Ifacturer	- · ·	
Connector 5557-06R-210 Molex Inc Connector Pin 5556T Daiden Co.,Ltd. Cable ROBO-TOP 600 V 0.75 mm² ROBO-TOP, is a trade mark of DYDEN CORPORATION No. MFMCB0 * * 0GET (40) (50) (40) (50) (0) (10) (10) (40) (50) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10) (10)		-+	Тусо Е	lectronics		
Connector Pin 5556T Molex Inc Cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. 20 MFMCA0200AEB cable ROBO-TOP 600 V 0.75 mm² Daiden Co.,Ltd. cable ROBO-TOP _® 105 °C 600V . DP) ROBO-TOP _® is a trade mark of DYDEN CORPORATION No. MFMCB0 ** 0GET (40) (50) for the set of						
e Cable (ROBO-TOP _® 105 °C 600V . DP) No. MFMCB0 * * 0GET		- +	Мс	lex Inc		
No. MFMCB0 * * 0GET	Cable		5 mm ² Doido			
		ROBO-TOP 600 V 0.75		n Co.,Ltd.		
	No. MFMCB0 * * 0	OP _® 105 °C 600V . D GET	P)		trade mark	of DYDEN CORPORATION

					Optic	DIS
le Se	et (3 m)		Cable	e Set (5 m)		
t No.	DV0P37300		Part	No. DV0P39200		
Encode Aotor d	-		2) En 3) Mo 4) Co	erface cable : DV0P08 coder cable (5 m) : MF otor cable (5 m) : MFM nnector kit for driver p /0P2870	FECA0050 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.		Manufacturer	L (m)	Part No.
	Connector Connector Pin	172159-1 170362-1, 170366-1		Tyco Electronics	3	MFMCA0030AEB MFMCA0050AEB
	Connector	5557-06R-210			10	MFMCA0050AEB
	Connector Pin	5556T		Molex Inc	20	MFMCA0200AEB
	Cable	ROBO-TOP 600 V 0.75 mr	m ²	Daiden Co.,Ltd.	1 '	
t No.	able (ROBO-TO MFMCB0 * * 0G	P _® 105 °C 600V . DP)	(50)	ROBO-TOP _® i	s a trade mark	of DYDEN CORPORATION
	포탄 에 드			୦		
	Title	Part No.		Manufacturer	L (m)	Part No.

le Se	et (3 m)		Cable Se	et (5 m)		
rt No.	DV0P37300		Part No.	DV0P39200		
nterfac Encode Aotor c Connec	ce cable : DV0P0800 er cable (3 m) : MFEC cable (3 m) : MFMCA0 ctor kit for driver powe	0030AEB	 2) Encode 3) Motor c 4) Connect 	e cable : DV0P0 r cable (5 m) : M able (5 m) : MFN tor kit for driver p	FECA0050 ICA0050A	EB
V0P2	870		DV0P28	370		
oder	Cable					
t No.	MFECA0 * * 0E	AM				
						[Unit: mn
	Title	Part No.	M	anufacturer	L (m)	Part No.
Con	nnector (Driver side)	3E206-0100KV		umitomo 3M	3	MFECA0030EAM
	Shell kit Connector	3E306-3200-008 172160-1		r equivalent	5 10	MFECA0050EAM MFECA0100EAM
	Connector Pin	170365-1	Tye	co Electronics	20	MFECA0200EAM
	Cable	0.20 mm ² × 3P				
	able (ROBO-TO	PP _® 105 °C 600 V . DP)	OKI Elec	ROBO-TOP®		of DYDEN CORPORATION
or Ca rt No.	able (ROBO-TO MFMCA0 * * 0A	PP _® 105 °C 600 V . DP)				of DYDEN CORPORATION
	able (ROBO-TO MFMCA0 * * 0A	P® 105 °C 600 V . DP) EB				
	able (ROBO-TO MFMCA0 * * 0A	PP _® 105 °C 600 V . DP) EB				
	able (ROBO-TO MFMCA0 * * 0A	PP® 105 °C 600 V . DP)		ROBO-TOP _®	is a trade mark	[Unit: mn Part No. MFMCA0030AEB
	able (ROBO-TO MFMCA0 * * 0A	PP _® 105 °C 600 V . DP) EB 50)		ROBO-TOP₀ anufacturer	is a trade mark	[Unit: mn Part No. MFMCA0030AEB MFMCA0050AEB
	able (ROBO-TO MFMCA0 * * 0A	PP® 105 °C 600 V . DP)		ROBO-TOP₀ anufacturer	is a trade mark	[Unit: mn Part No. MFMCA0030AEB
	able (ROBO-TO MFMCA0 * * 0A	PP _® 105 °C 600 V . DP) EB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210) 	ROBO-TOP _® anufacturer co Electronics	is a trade mark	[Unit: mn Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	PP _® 105 °C 600 V . DP) EB 50) L (50) Part No. 172159-1 170362-1, 170366-1 5557-06R-210 5556T) 	ROBO-TOP _® anufacturer co Electronics Molex Inc aiden Co.,Ltd.	is a trade mark	[Unit: mn Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	PP _® 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)) 	ROBO-TOP _® anufacturer co Electronics Molex Inc aiden Co.,Ltd.	is a trade mark	[Unit: mn Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A	PP _® 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)) 	ROBO-TOP _® anufacturer co Electronics Molex Inc aiden Co.,Ltd.	is a trade mark	[Unit: mn 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 (40))	ROBO-TOP _® anufacturer co Electronics Molex Inc aiden Co.,Ltd.	is a trade mark	[Unit: mn Part No. MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB
rt No.	able (ROBO-TO MFMCA0 * * 0A 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: mn MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB of DYDEN CORPORATION [Unit: mn [Unit: mn Part No. MFMCB0030GET
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: mn MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB of DYDEN CORPORATION [Unit: mn [Unit: mn MFMCB0030GET MFMCB0030GET MFMCB0050GET
rt No.	able (ROBO-TO MFMCA0 * * 0A 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) M M Tyu Da (50) (50) Da Da Da Da Da Da Da Da Da Da	ROBO-TOP。	is a trade mark	[Unit: mn MFMCA0030AEB MFMCA0050AEB MFMCA0100AEB MFMCA0200AEB of DYDEN CORPORATION [Unit: mn [Unit: mn Part No. MFMCB0030GET

E Series

Options

238

Connector Kit

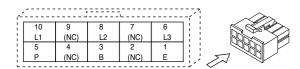
Connector Kit for Power Supply Connection

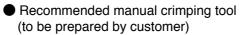
Part No. DV0P2870

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.)

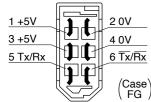
Parts composition

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	Tyco Electronics	
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 ITC.	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.

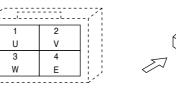
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

Pin configuration of encoder cable junction

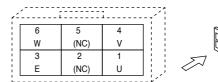
2	i			
ſ	1	2	3	-
	NC	TX/RX	TX/RX	1
Ī	4	5	6	i.
	+5V	0V	FG	1
				1.1



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.

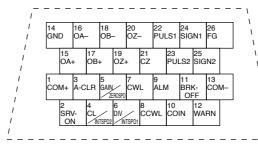
Connector Kit for External Peripheral Equipment

Part No. DV0P0770

Parts composition

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.

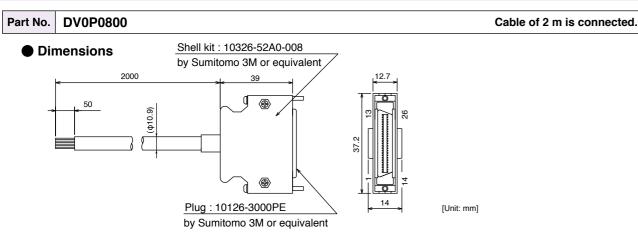


1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by

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>

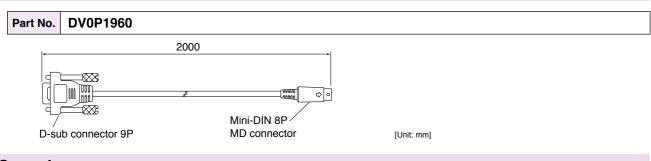
e. g. of Pin No. designation : Pin No. 1 Wire color is orange, and one red dot.

Pin No. 12 ... Wire color is orange, and two black dot.

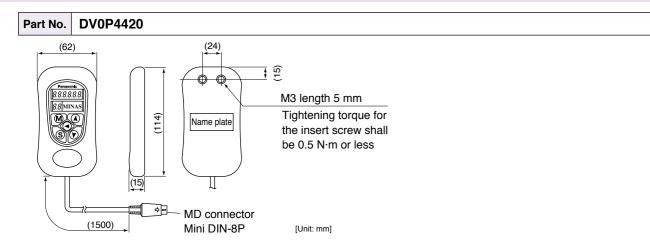
<Remarks>

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.

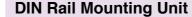
Communication Cable (For Connection with PC)

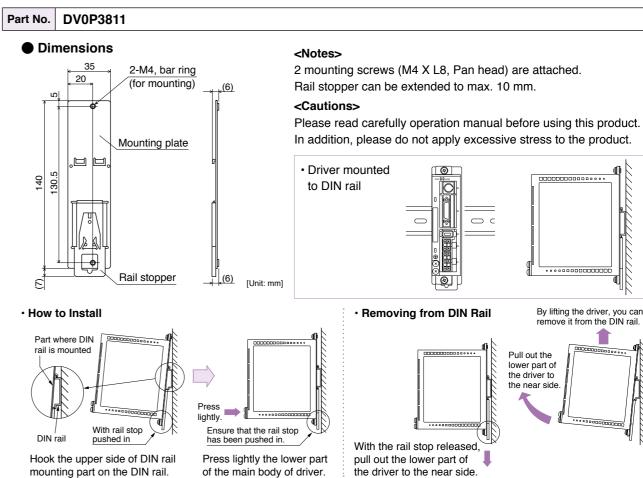


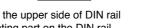
Console









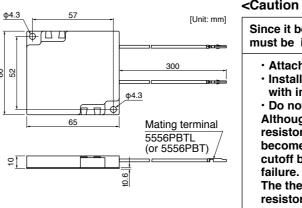


of the main body of driver.

External Regenerative Resistor

			Specifi		
Part No.	Manufacturer's Part No.	Resistance	Rated power	Activation temperature of built-in fuse	Note (Input Power of drive)
		Ω	W	°C	
DV0P2890	45M03	50	10	137 ⁺³ ₋₂	Single phase, 100 V
DV0P2891	45M03	100	10	137 ⁺³ ₋₂	Single/3-phase, 200 V
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			

Dimensions



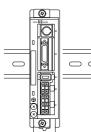
<Remarks>

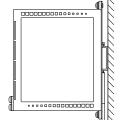
Thermal fuse is installed for safety.

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.

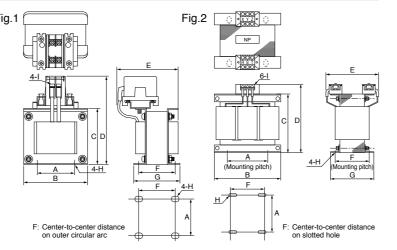
Although the thermal cutoff is built in external regeneration resistor, the skin temperature of regeneration resistor may become high exceeding the operating temperature of thermal cutoff by the time the thermal cutoff operates in amplifier

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.	A	в	с	D	E(Max)	F	G	н	I	Inductance (mH)	Rated current (A)
	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.

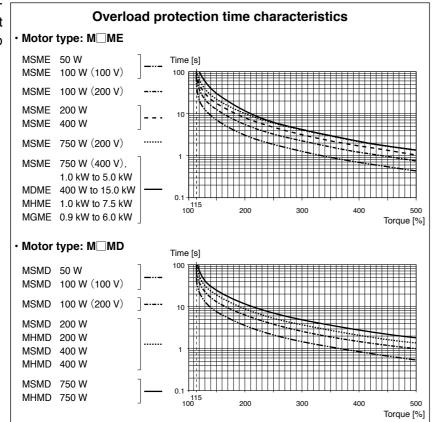
For rated current of circuit breaker and fuse, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

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
	Directives	EN61000-6-2
		EN61800-3
EC	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 Radio Waves Act		C22.2 No.14
		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)

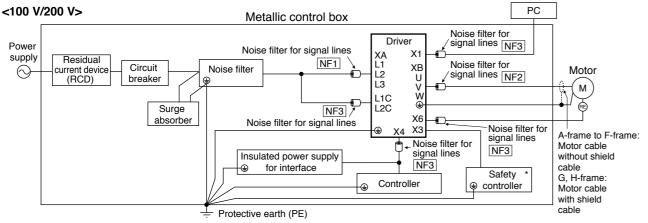
이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

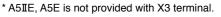
	Motor	A5 F
	_	A5 Family
	EN60034-1 EN60034-5	
3)		E Series
	—	
	UL1004-1, UL1004-6 (E327868)	Information
	C22.2 No.100	nation
, 8, 11	_	

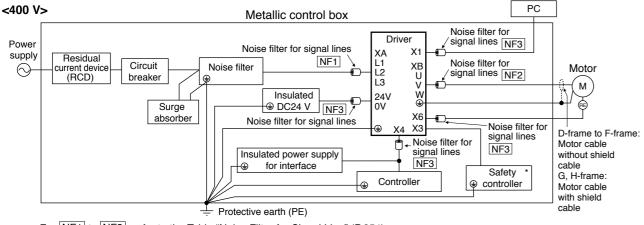
Installation Environment

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

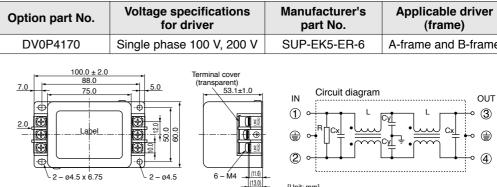
Install a circuit breaker which complies with IEC Standards and UL recognized (Listed and marked) between power supply and noise filter.

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's part No.	Applicable driver (frame)	Manufacturer
	3-phase 200 V		A-frame and B-frame	
DV0PM20042	Single phase 100 V, 200 V 3-phase 200 V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.
DV0P4220	Single/3-phase 200 V	3SUP-HU30-ER-6	D-frame	
DV0PM20043	3-phase 200 V	3SUP-HU50-ER-6	E-frame	

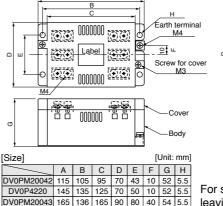
[DV0PM20042, DV0P4220]

[DV0PM20043]

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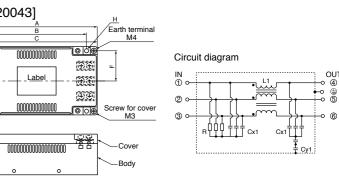
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For single phase application, use 2 terminals among 3 terminals, leaving the remaining terminal unconnected.

Manufacturer's part No.	Applicable driver (frame)	Manufacturer
SUP-EK5-ER-6	A-frame and B-frame	Okaya Electric Ind.

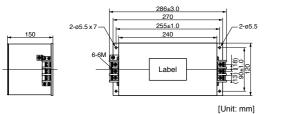
[Unit: mm]

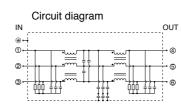


A5 Family Conformance to **International Standards**

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	

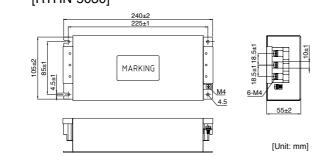
50+2

[Unit: mm]

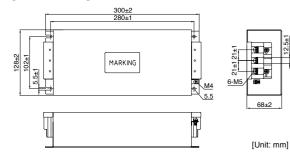








[RTHN-5050]

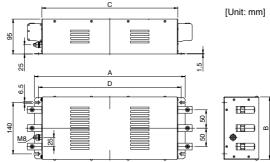


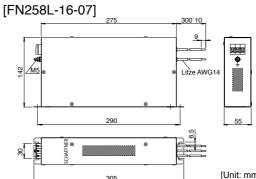
<Remarks>

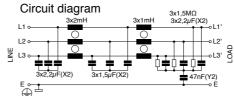
- · Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- · For detailed specification of the filter, contact the manufacturer.
- When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

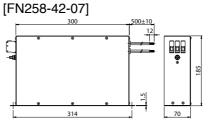
Part No.	Voltage specifications for driver	
FS5559-60-34	2 phase 200 V	Γ
FS5559-80-34	3-phase 200 V	
FN258L-16-07		
FN258L-30-07	2 phase 400 V	
FN258-42-07	3-phase 400 V	
FN258-42-33		

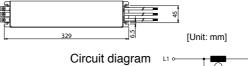
[FS5559-60-34, FS5559-80-34]

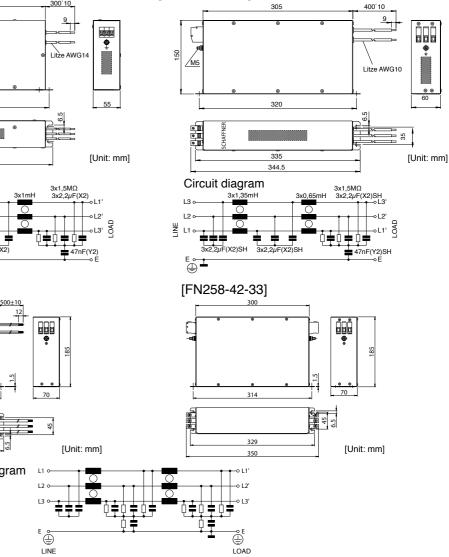






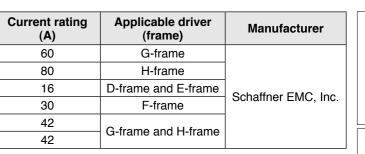


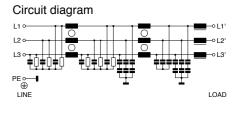


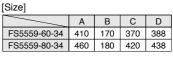


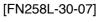
<Remarks>

- · 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

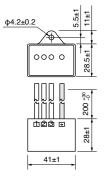
Provide a surge absorber for the primary side of noise filter.

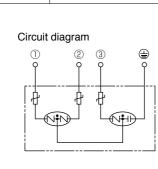
[Unit: mm]

UL-1015 AWG16

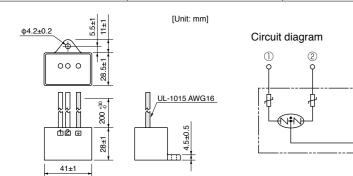
£0.5

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 lilters for signal liftes to all cables (power cable, motor cable, encoder cable and interface cable)										
Symbol ^{*1}	Cable Name			Option part No.	Manufacturer's part No.	Manufacturer	Qty.				
		A, B, C, D	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4				
NF1	Power cable	E, F	_	Recommended components	RJ8035	KK-CORP.CO.JP	1				
		G, H	G, H	Recommended components	RJ8095	KK-CORP.CO.JP	1				
		A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4				
NF2	Motor cable	G, H	G, H	Recommended components	T400-61D	MICROMETALS	1				
NF3	• 24 V Power cable • Encoder cable • Interface cable • USB cable • Control power cable		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.

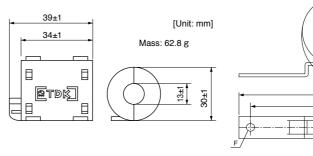
<Caution>

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.		" (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".

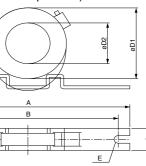
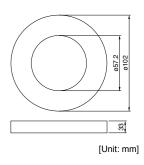


Fig.3: T400-61D (Recommended components)



(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
	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	

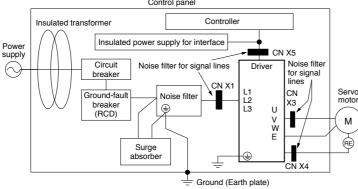
Composition of Peripheral Components

<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

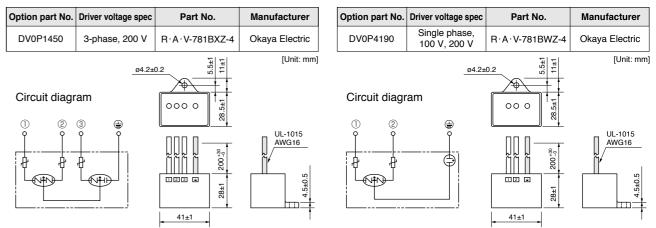
Noise Filter

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.	Manufad
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.

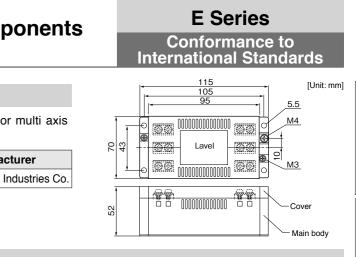
Ground-Fault Breaker

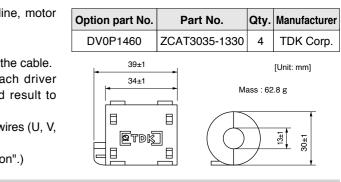
Install a ground fault curcuit braker (RCD) to the primary side of the power supply. Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

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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and the second second	194
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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.

		-	 Sec.	
and the second			 -	
3		1	 1	1
	-	-		
-	-		 _	-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		Contraction of the local division of the loc	******	500 B20
1. Selection according to driver series and motor type Suitable option can be selected by selecting driver	Driver series -		Allenie of alle Allenie Million and Million Allenie Million and Million Allenie Million Million br>Million Million Million Million Million	MINAS A.S.
series, motor type and motor specification through pulldown menu.	Motor type -		-	
	Motor specification –	Annual Data	2 mark 2 mark 2 mark 2 mark 2 mark 2 mark 2 mark	an annan ¹ an an <u>1</u> 2 an an 2 2 an an 2
Mod	el number input area –	Au 10 (88000)	harts, Sairty	2 hart 6 mars 600 km
2. Entry of model number If you know the model number based on the servo motor and driver currently used, enter the model number.	Tab —►	Control Control to 1000 to 100 Control Tage 200 Control Tage Control Cont		Sama and S
Result of selection		1		
Tab sheet specific to each of option model number is used for easier identification of the desired option		Aller dat Stranger		1
* When you are using the motor capacity selection software, simply press [Option Selection] tab and			444	3
the screen as shown right will appear.				

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

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	Solid angle	steradian	sr
Current	ampere	Α			
Thermodynamic temperature	kelvin	K			
Amount of substance	mol	mol			
Luminous intensity	candela	cd			

Table 3: Major derived unit with proper name

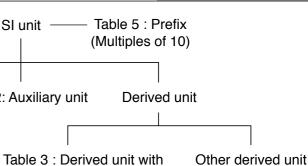
Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1 Hz = 1 s ⁻¹
Force	newton	N	1 N = 1 kg⋅m/s²
Pressure, Stress	pascal	Pa	1 Pa = 1 N/m ²
Energy, Work, Amount of heat	joule	J	1 J = 1 N·m
Amount of work, Work efficiency, Power, Electric power	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	Name	Symbol of unit	Multiples powered	Prefix	
Guunny		-	to unit	Name	Symbol
	minute	min	10 ¹⁸	exa	E
Time	hour	h	10 ¹⁵	peta	Р
TITIO	noui		10 ¹²	tera	Т
	day	d	10 ⁹	giga	G
		•	10 ⁶	mega	М
	degree		10 ³	kilo	k
Diana 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/sislat	1	+	10-6	micro	μ
Weight	ton	ι τ	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)



proper name

Table 2: Auxiliary unit

Table 5: Prefix

Guide to the International System of Units (SI)

Major	Compatible Uni	t
-------	-----------------------	---

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	$1 \text{ Gal} = 10^{-2} \text{ m/s}^2$
	G	m/s ²	1 G = 9.80665 m/s ²
Frequency	c/s, c	Hz	1 c/s = Hz
Revolving speed, Number of revolutions	rpm	s ⁻¹ or min ⁻¹ , r/min	1 rpm = 1 min ⁻¹
Weight	kgf	_	Same value
Mass	_	kg	
Weight flow rate	kgf/s	-	
Mass flow rate	_	kg/s	Same value
Specific weight	kgf/m ³	-	Same value
Density	-	kg/m ³	
Specific volume	m ³ /kgf	m ³ /kg	Same value
Load	kgf	Ν	1 kgf = 9.80665 N
Force	kgf	Ν	1 kgf = 9.80665 N
	dyn	Ν	1 dyn = 10 ⁻⁵ N
Moment of force	kgf∙m	N∙m	1 kgf⋅m = 9.806 N⋅m
Pressure	kgf/cm ²	Pa, bar ⁽¹⁾ or kgf/cm ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
			= 0.980665 bar
	at (Engineering atmospheric pressure)	Pa	1 at = 9.80665 x 10 ⁴ Pa
	atm (Atmospheric pressure)	Pa	1 atm = 1.01325 x 10 ⁵ Pa
	mH₂O, mAq	Pa	1 mH₂O = 9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg (2)	1 mmHg = 133.322 Pa
	Torr	Pa	
Stress	kgf/mm ²	Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
			=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
			= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m ²	Pa or N/m ²	1 kgf/m ² = 9.80665 Pa = 9.80665 N/m
			1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf∙m	J (joule)	1 kgf⋅m = 9.80665 J
	erg	J	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf∙m/s	W (watt)	1 kgf·m/s = 9.80665 W
	PS	W	1 PS = 0.7355 kW
Viscosity	PP	Pa∙s	1 P = 0.1 Pa·s
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	Mx	Wb (weber)	1 Mx = 10 ⁻⁸ Wb
Magnetic flux density	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".

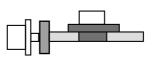
Flow of Motor Selection

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

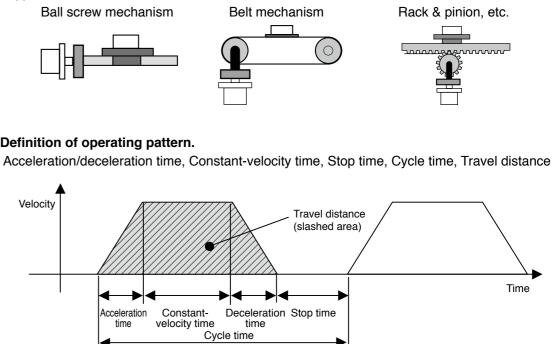
<Typical mechanism>

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

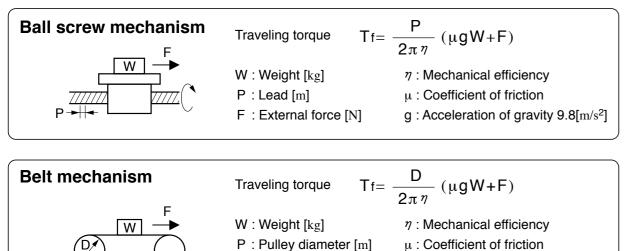
(1) Peak torque

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]

time [s]

$$Trms = \sqrt{\begin{array}{c} Ta^{2} x \ ta \ + \ Tf^{2} x \ tb \ + \ Td^{2} x \ td}{tc}}$$

$$Ta: Acceleration torque [N·m] ta: Acceleration time [s] tc: Cycle time [s] tc: Cycle time [s] (Run time \ + \ Stop time) Td: Deceleration torque [N·m] td: Deceleration time [s] td: Deceleration time [$$

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.

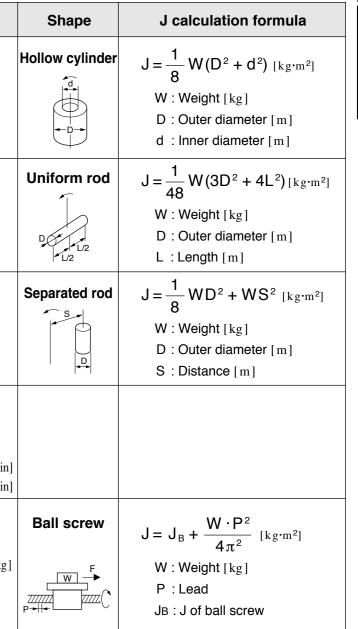
3. Inertia and inertia ratio

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

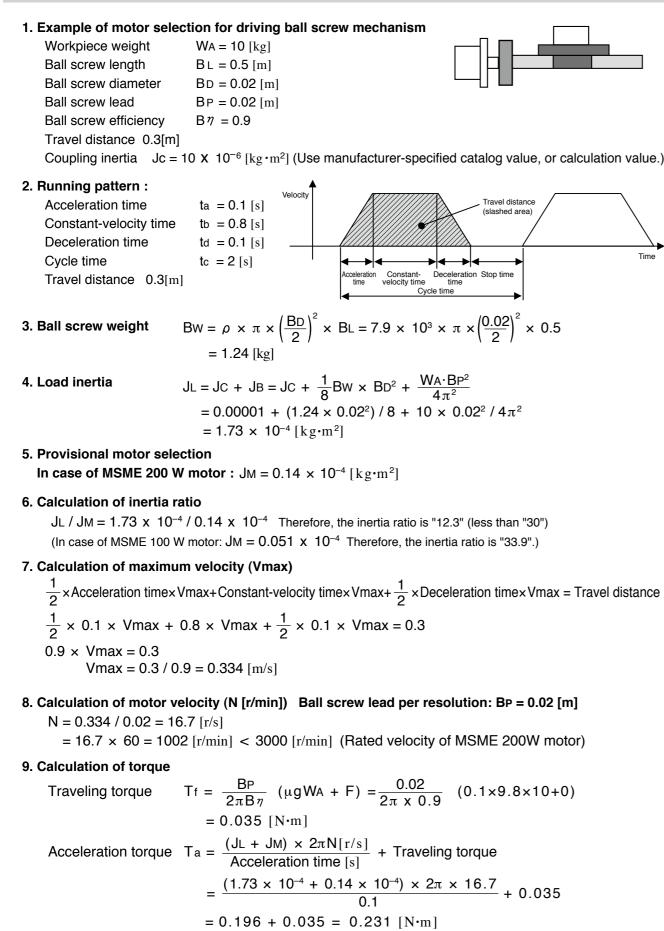
Shape	J calculation formula
Disk	$J = \frac{1}{8} W D^2 [kg \cdot m^2]$
	W : Weight [kg]
Ţ	D : Outer diameter [m]
Prism	$J = \frac{1}{12} W (a^2 + b^2) [kg \cdot m^2]$
	W : Weight [kg]
ab	a, b, c : Side length [m]
Straight rod	$J = \frac{1}{3} WL^2 [kg \cdot m^2]$
	W : Weight [kg]
	L : Length [m]
Reduction 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]
<u>e</u>	* Excluding drum J

If weight (W [kg]) is unknown, calculate it with the following formula: Weight W[kg]=Density p [kg/m³] x Volume V[m³] Density of each material Iron $\rho = 7.9 \times 10^3 \, [\text{kg/m}^3]$ Aluminum $\rho = 2.8 \times 10^3 \, [kg/m^3]$ Brass $\rho = 8.5 \times 10^3 \, [\text{kg/m}^3]$

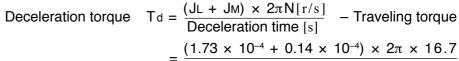


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To Drive Ball Screw Mechanism



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 motor selection for timing 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	JB			
	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)

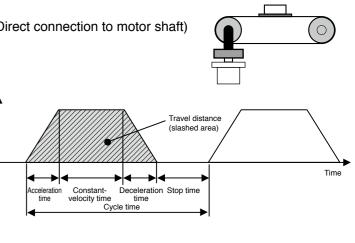
 $8 + 0.161^2 \times 0.1$

 $= 0.067 [N \cdot m] < 0.64 [N \cdot m]$ (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 = 15.6×10^{-4} / 0.87×10^{-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

$$Trms = \sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$
$$= \sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$$
$$= 0.241 [N \cdot m] < 2.4 [N \cdot m] \text{ (Rated torque of MSME 750 W motor)}$$

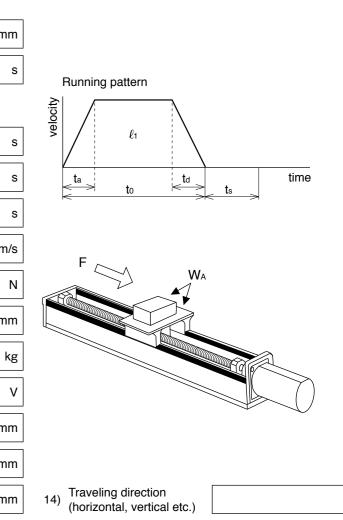
11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

Request Sheet for Motor Selection

Reques	st for motor s	ele
1. Driven mechanism and r	unning data	
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	±	m
9) Total weight of the work load and the table	WA:	k
10) Power supply voltage		
11) Diameter of the ball screw		m
12) Total length of the ball		m
13) Lead of the ball screw		m

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	D1: 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		\setminus	
8)	Positioning accuracy of the work load	± mm	l l l l l l l l l l l l l l l l l l l	\backslash	
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.)				₩м
				D1(W1)	

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

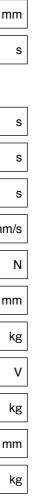
Company name :
Department/Section :
Name :
Address :
Tel :
Fax :
E-mail address:

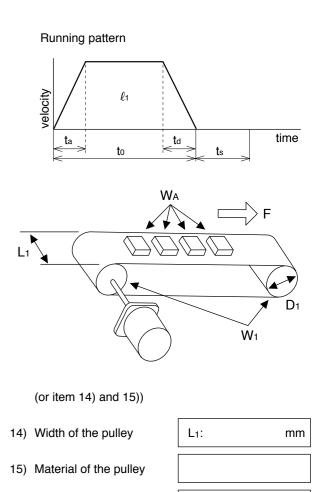
	Requ	est for motor s
1. Driven mecha	anism and ru	inning data
1) Travel distance of per one cycle	f the work load	ℓ1: m
2) Cycle time		to:
(Fill in items 3) ar	nd 4) if required.)	
3) Acceleration time		ta:
4) Deceleration time	,	td:
5) Stopping time	[ts:
6) Max. velocity	[V: mm
7) External force	[F:
8) Positioning accur work load	acy of the	± m
9) Total weight of the	e work load	Wa:
10) Power supply vol	tage	
11) Weight of the belt	: [۲	WM:
12) Diameter of the d	riving pulley	D1: m
13) Total weight of the	e 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

B

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

		Sin an	aru	ig	uuu			I	Motor si	de	Belt	side
1)	Travel distance of the load per one cycle	e work	ℓ 1:		mm	16)	Diameter of the pulley	D	3:	mm	D4:	mm
2)	Cycle time		to:		S	17)	Weight of the pulley	W	3:	kg	W4:	kg
	(Fill in items 3) and 4)) if requi	red.)				(or item 18) and 19))					
3)	Acceleration time		ta:		S	18)	Width of the pulley		L2:		r	ım
4)	Deceleration time		td:		S	19)	Material of the pulley					
5)	Stopping time		ts:		S	20)	Weight of the belt		W∟:			kg
6)	Max. velocity		V:		mm/s	21)	Traveling direction (horizontal, vertical etc	c.)				
7)	External force		F:		Ν	F	Running pattern					
8)	Positioning accuracy work load	of the	±		mm							
9)	Total weight of the wo	ork	WA:		kg		دelocity ر		\backslash			
10)	Power supply voltage)			V		ta to to	td	≥ ts	->	time	
11)	Weight of motor side	belt	WM:		kg							א ∠ L2
		Motor s	ide	Belt	t side					W	. /	
12)	Diameter of the Drawley		mm	D ₂ :	mm			WA			\mathcal{F}	\bigcirc
13)	Weight of the pulley	1:	kg	W2:	kg		D2(W2)			S	,	• 04(W4)
	(or item 14) and 15))						WM	Q				
14)	Width of the Lt belt	1:		mm		(~			\sim	D3	(W3)	
15)	Material of the pulley						D1(W1)					

1. 6	Sriven mechanism an	iu ru	inning uata
1)	Travel distance of the work load per one cycle	d1:	deg
2)	Cycle time	to:	s
	(Fill in items 3) and 4) if requi	ired.)	
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	R ₁ :	mm
10)	Diameter of the table	D1:	mm
11)	Mass of the table	W1:	kg

12) Diameter of the table support

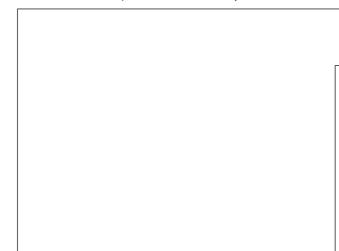
13) Power supply voltage

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 for motor selection V : Turntable drive

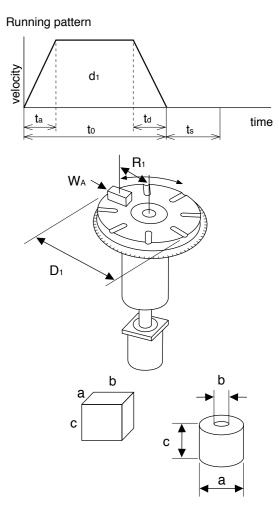
mm

V

1. Driven mechanism and running data

Request Sheet for Motor Selection

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 :
epartment/Section :
lame :
ddress :
el :
ax :
-mail address:

Request for motor selection VI : Timing pulley + Turntable drive

1. Driven mechanism and running data

1.1	Jriven mechar	nism ar	na rur	ning data			Motor	r side	Turnt	able side
1)	Travel distance of t load per one cycle	he work	d1:	deg	16)	Diameter of the pulley	D2:	mm	D3:	mm
2)	Cycle time		to:	S	17)	Weight of the pulley	W2:	kg	W 3:	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		Wм:		kg
6)	Max. rotational spe table	ed of the	v:	deg/s]	Running pattern				
		(or)	V:	r/s]					
7)	Positioning accurac work load	cy of the	±	deg]	d1	\setminus	\backslash		
8)	Weight of one work	load	WA:	kg]	ta to	< td	> ts	_>	time
9)	Driving radius of the of gravity of the wo	e center rk	R1:	mm]			R 1		
10)	Diameter of the tab	le	D1:	mm]	V	NA A			
11)	Mass of the table		W1:	kg]	Υ.	D1			
12)	Diameter of the tab support	le	T1:	mm]					
13)	Power supply volta	ge		V]	D2(W2)		Y	◀	D- 444-
	-	(Prisi	m)	(Cylinder)	-		•		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)	15) Number of work loads			pcs]				-	

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

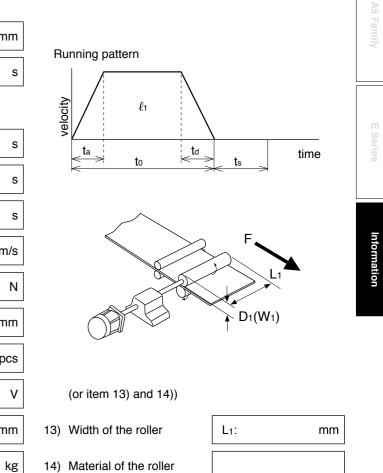
Company name :
Department/Section :
Name :
Address :
Tel :
Fax :
E-mail address:

	Request	for moto	or select
1.	Driven mechanism and ru	unning d	ata
1)	Travel distance of the work load per one cycle	ℓ ₁ :	mn
2)	Cycle time	to:	\$
	(Fill in items 3) and 4) if required.)		
3)	Acceleration time	ta:	ę
4)	Deceleration time	td:	5
5)	Stopping time	ts:	:
6)	Max. velocity	v:	mm/s
7)	External pulling force	F:	١
8)	Positioning accuracy of the work load	±	mn
9)	Number of rollers		pcs
10)	Power supply voltage		١
11)	Diameter of the roller	D1:	mn
12)	Mass of the roller	W1:	k

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Request Sheet for Motor Selection

ction VII : Roller feed drive



Company name :	
Department/Section :	
Name :	
Address :	
Tel :	
Fax :	
E-mail address:	

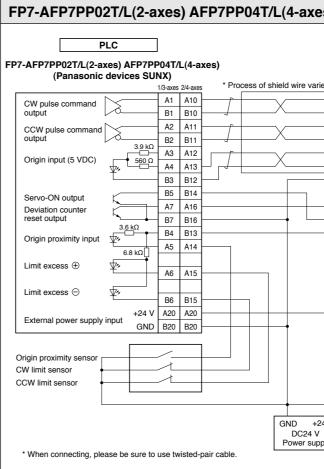
Request for motor selection VII: Driving with Rack & Pinion

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 F: 7) External force 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.)

Company name :
Department/Section :
Name :
Address :
Tel :
Fax :
E-mail address:
 •

Connection Between Driver and Controller

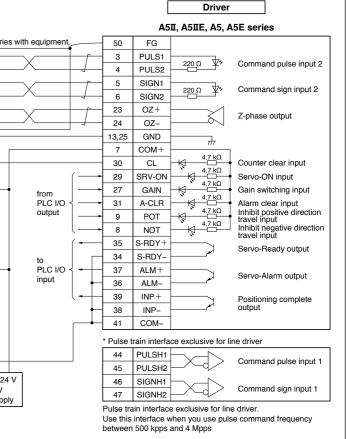


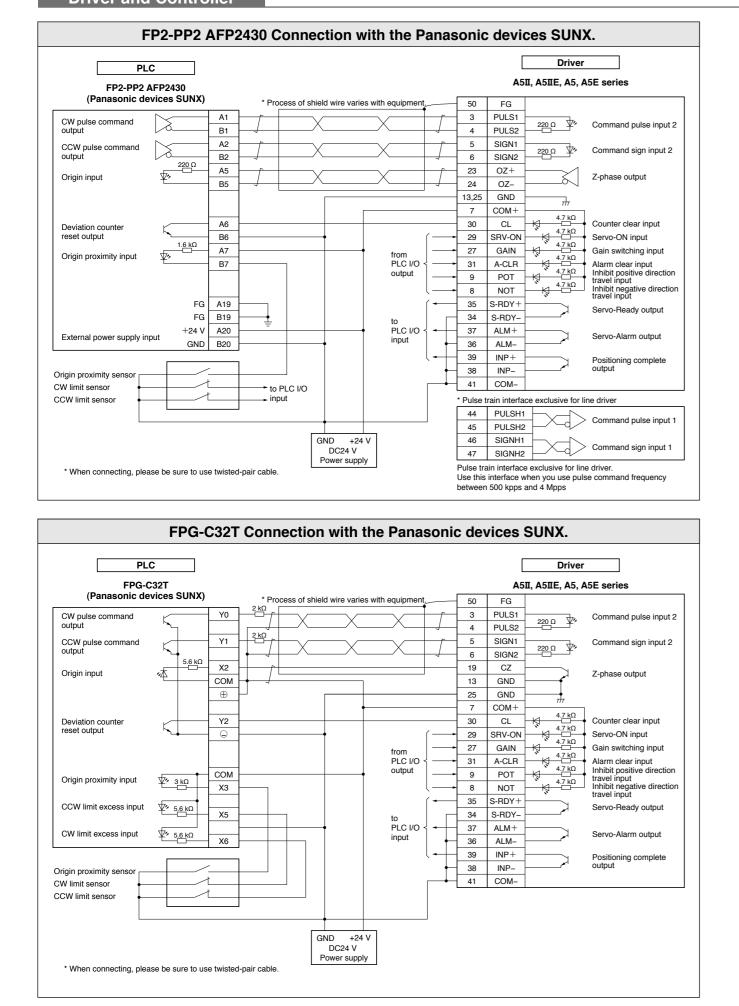
FPG-PP12	AFP	G432	Conn	ection
PLC				
FPG-PP12 AFPG432 (Panasonic devices SUNX)		* Pro	cess of shi	eld wire varie
CW pulse command output	A1 B1			×
CCW pulse command output 560 Ω	A2 B2			×
Origin input	A4 B3			
Deviation counter	A7 B7			
6.8 kΩ Origin proximity input	B7 B4 A5			
FG FG +24 V	A19 B19 A20			
External power supply input GND	B20			-
Origin proximity sensor CW limit sensor CCW limit sensor		to → to	PLC I/O	
* When connecting, please be sure to use	twisted-	nair cable		GND +24 DC24 V Power supp
picture of a contraction of the second of th		pan cabio.		

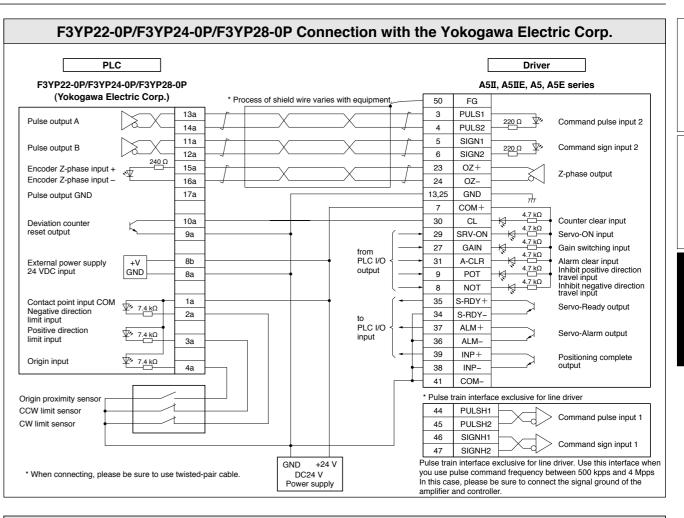
A5 Family **Connection Between Driver and Controller**

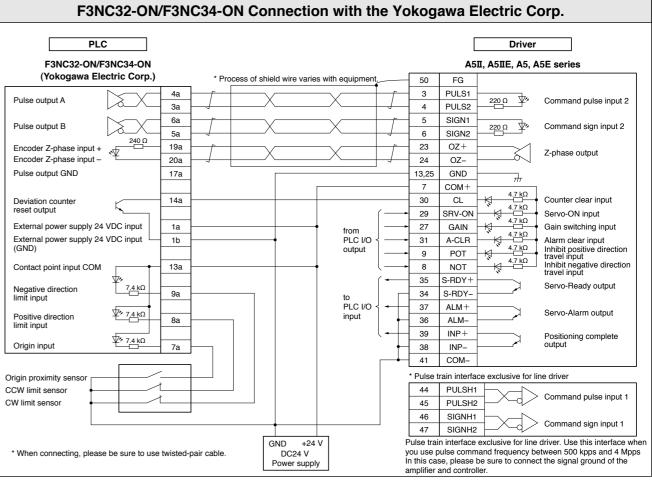
es) Connectior	n with	the P	anasonic	devices SUN
		г		
		L	Driver	
		A5	II, A5IIE, A5, A	5E series
ries with equipment.	50	FG		
	3	PULS1	220 Ω 🖓	0
	- 4	PULS2	<u>220 Ω</u> ¥*	Command pulse input 2
	5	SIGN1	222 Q 1	Command sign input 2
	6	SIGN2	220 Ω ¥*	Command sign input 2
	23	OZ+	1	7 phase sutput
	24	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
+ í—	+ 27	GAIN	4.7 kΩ	Gain switching input
from	+ 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 T	- 34	S-RDY-	ام	Joi vo-neauy Juipul
	37	ALM+		Servo-Alarm output
input	36	ALM-	A	Servo-Alami oulpul
	- 39	INP+		Positioning complete
+	- 38	INP-	الم	output
	41	COM-		
	* Pulse	train interfa	ce exclusive for li	ne driver
	44	PULSH1		Command pulse input 1
	45	PULSH2	4	Commanu puise input 1
24 V	46	SIGNH1		Command sign input 1
nh	47	SIGNH2	$\vdash \land \triangleleft$	Command sign input 1
pply	Use this	interface w	e exclusive for line when you use puls and 4 Mpps	e driver. se command frequency

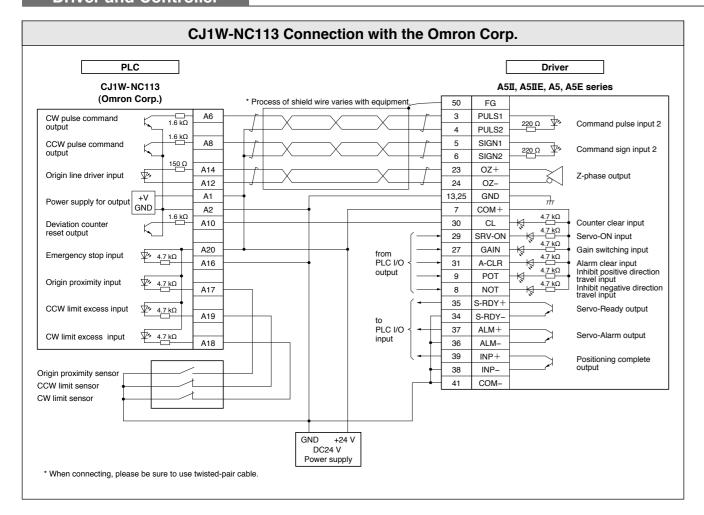
with the Panasonic devices SUNX.

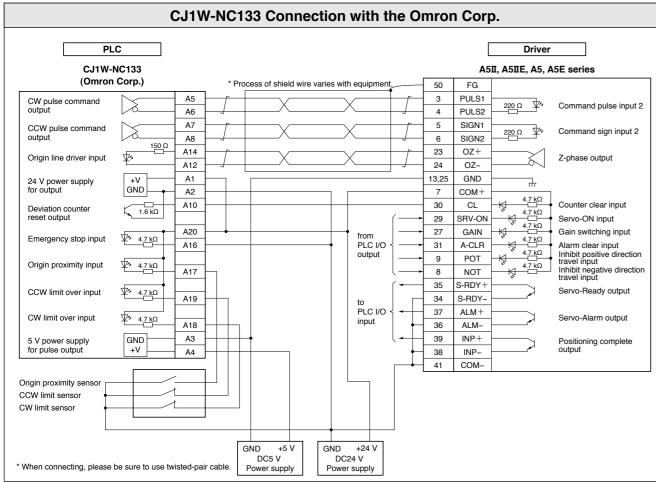


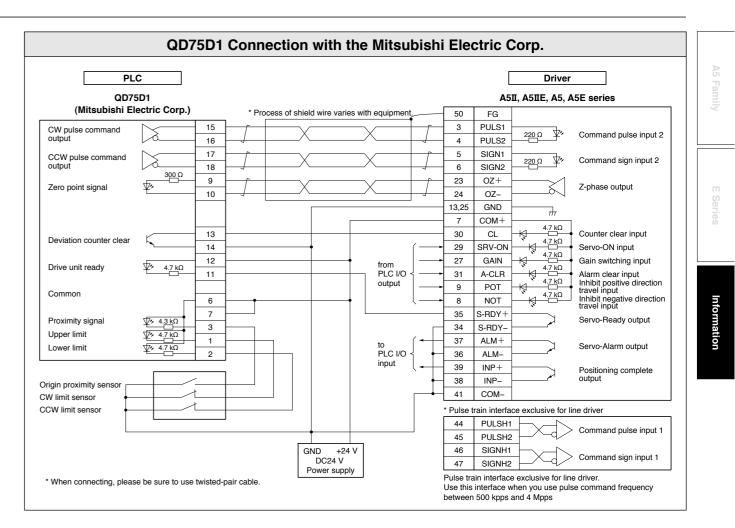


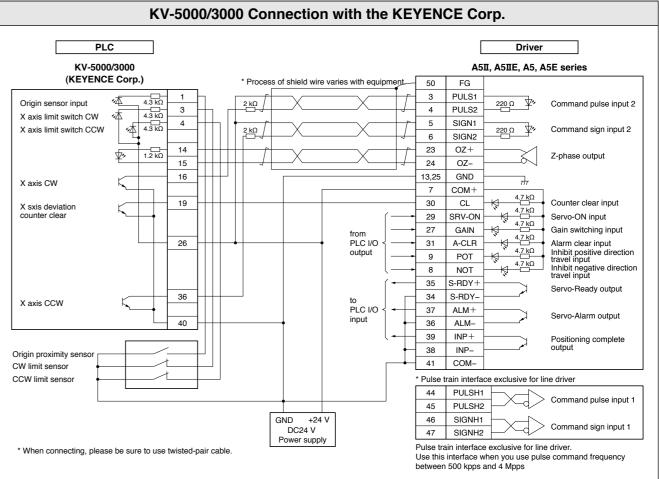






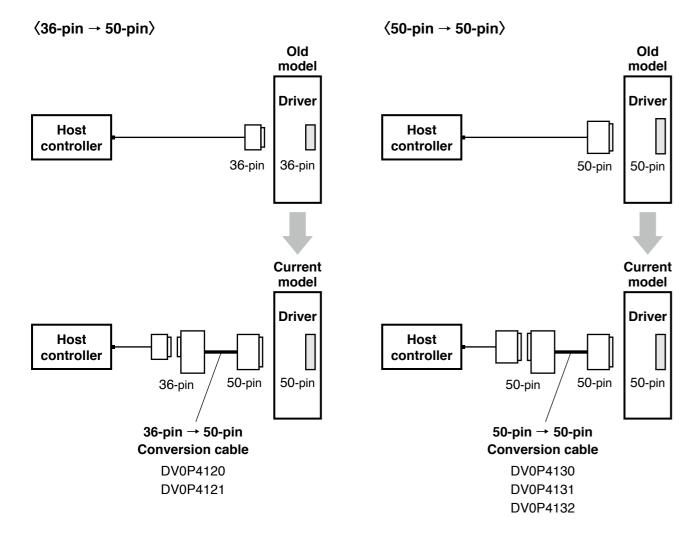






Replacing Old Model Servo Driver with MINAS A5II, A5 series

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	DV0P4121			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
2	24	Z-phase output	OZ-	24	Z-phase output	OZ–	
3	13	Signal ground	GND	13	Signal ground	GND	
4	19	Z-phase output	CZ	19	Z-phase output	CZ	
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2	
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1	
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2	
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1	
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH	
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL	
14	14	Speed command input	SPR	NC			
15	15	Signal ground	GND	15	Signal ground	GND	
16	43	Speed monitor output	SP	43	Speed monitor output	SP	
17	25	Signal ground	GND	25	Signal ground	GND	
18	50	Frame ground	FG	50	Frame ground	FG	
19	21	A-phase output	OA+	21	A-phase output	OA+	
20	22	A-phase output	OA-	22	A-phase output	OA-	
21	48	B-phase output	OB+	48	B-phase output	OB+	
22	49	B-phase output	OB-	49	B-phase output	OB-	
23	NC			NC			
24	NC			NC			
25	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED	
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
	34	Positioning complete output (-) Speed arrival output (-)	COIN- AT-SPEED-	34	Positioning complete output (-) Speed arrival output (-)	COIN- AT-SPEED	
28	36	Servo-Alarm output (-)	ALM-	36	Servo-Alarm output (-)	ALM–	
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (-)	S-RDY-	
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-	
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL	
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL	
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE	
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL	
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR	
35	17	Signal ground	GND	17	Signal ground	GND	
36	42	Torque monitor output	IM	42	Torque monitor output	IM	

* "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	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+			
8	NC			NC					
9	NC			NC					
10	NC	_		NC					
11	11	External brake release signal	BRK-OFF+	11	External brake release signal	BRK-OFF+			
12	12	Zero-speed detection output signal	ZSP	12	Zero-speed detection output signal	ZSP			
13	13	Torque in-limit signal output	TLC	13	Torque in-limit signal output	TLC			
14	NC			14	Speed command input	SPR			
15	15	Signal ground	GND	15	Signal ground	GND			
16	16	CCW direction torque limit input	CCWTL	16	CCW direction torque limit input	CCWTL			
17	17	Signal ground	GND	17	Signal ground	GND			
18	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL			
19	19	Z-phase output	CZ	19	Z-phase output	CZ			
20	NC			NC					
21	21	A-phase output	OA+	21	A-phase output	OA+			
22	22	A-phase output	OA-	22	A-phase output	OA-			
23	23	Z-phase output	OZ+	23	Z-phase output	OZ+			
24	24	Z-phase output	OZ-	24	Z-phase output	OZ-			
25	50	Frame ground	FG	50	Frame ground	FG			
26	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD			
27	27	Gain switching input	GAIN	27	Gain switching input	GAIN			
28	NC			33	Selection 1 input of internal command speed	INTSPD1			
29	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON			
30	30	Deviation counter clear input	CL	NC					
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR			
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE			
33	33	Command pulse inhibition input	INH	NC					
34	NC			NC					
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+			
36	NC			NC					
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+			
38	NC			NC					
39	39	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								
10	NC								
11	11	External brake release signal	BRK-OFF						
12	12	Zero-speed detection output signal	ZSP						
13	13	Torque in-limit signal output	TLC						
14	NC								
15	15	Signal ground	GND						
16 17	16 17	Torque command input	GND						
17	17	Signal ground CW direction torque limit input	CWTL						
19	19	Z-phase output	CZ						
20	NC		02						
21	21	A-phase output	OA+						
22	22	A-phase output	OA-						
23	23	Z-phase output	OZ+						
24	24	Z-phase output	OZ-						
25	50	Frame ground	FG						
26	26	Speed zero clamp input	ZEROSPE						
27	27	Gain switching input	GAIN						
28	NC								
29	29	Servo-ON input	SRV-ON						
30	NC								
31	31	Alarm clear input	A-CLR						
32	32	Control mode switching input	C-MODE						
33	NC								
34	NC								
35	35	Servo-Ready output	S-RDY+						
36	NC								
37	37	Servo-Alarm output	ALM+						
38	NC								
39	39	Speed arrival output	AT-SPEED						
40	40	Torque in-limit signal output	TLC						
	10	External brake release signal (-)	BRK-OFF						
	34	Speed arrival output (-)	AT-SPEED						
41	36	Servo-Alarm output (-)	ALM-						
	38	Servo-Ready output (-)	S-RDY-						
	41	Power supply for control signal (-)	COM-						
42	42	Torque monitor output	IM						
43	43	Speed monitor output	SP						
44	25	Signal ground	GND						
45	25	Signal ground	GND						
46	25	Signal ground	GND						
47	NC								
48	48	B-phase output	OB+						
49	49	B-phase output	OB-						
50	50	Frame ground	FG						
* "NC" i		nnoot							

* "NC" is no connect.

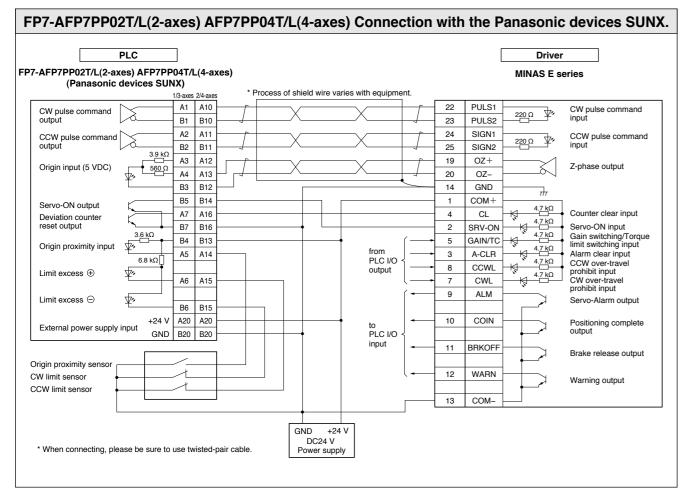


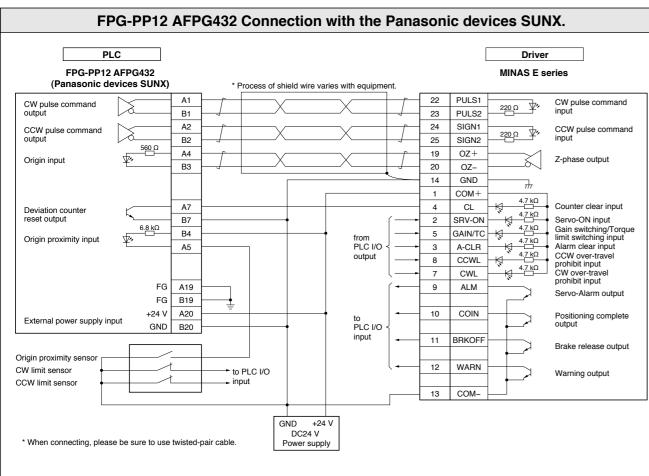
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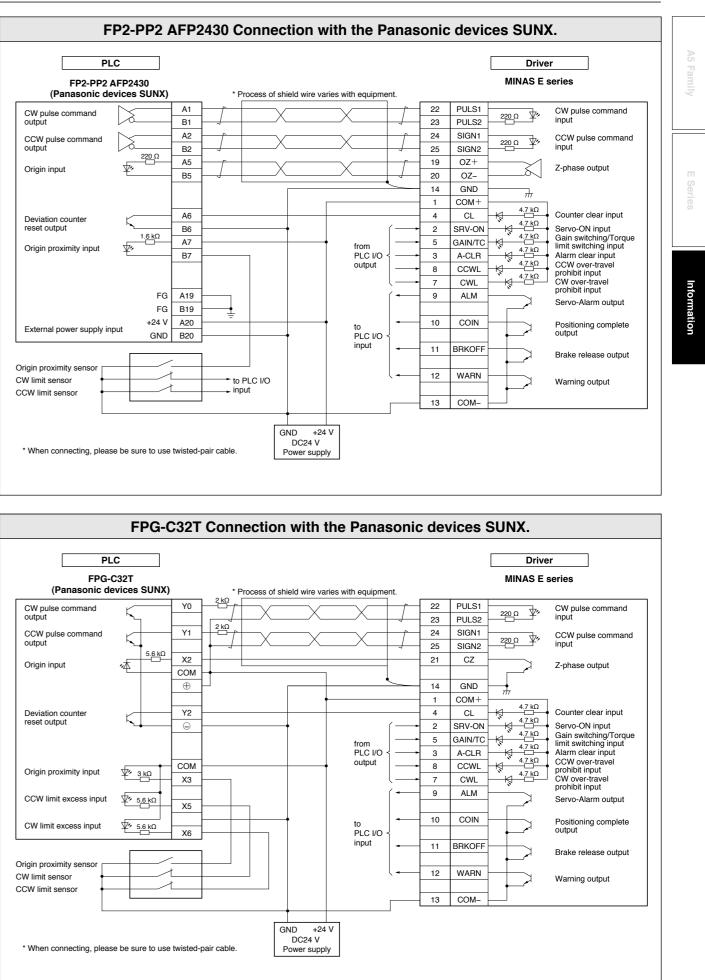
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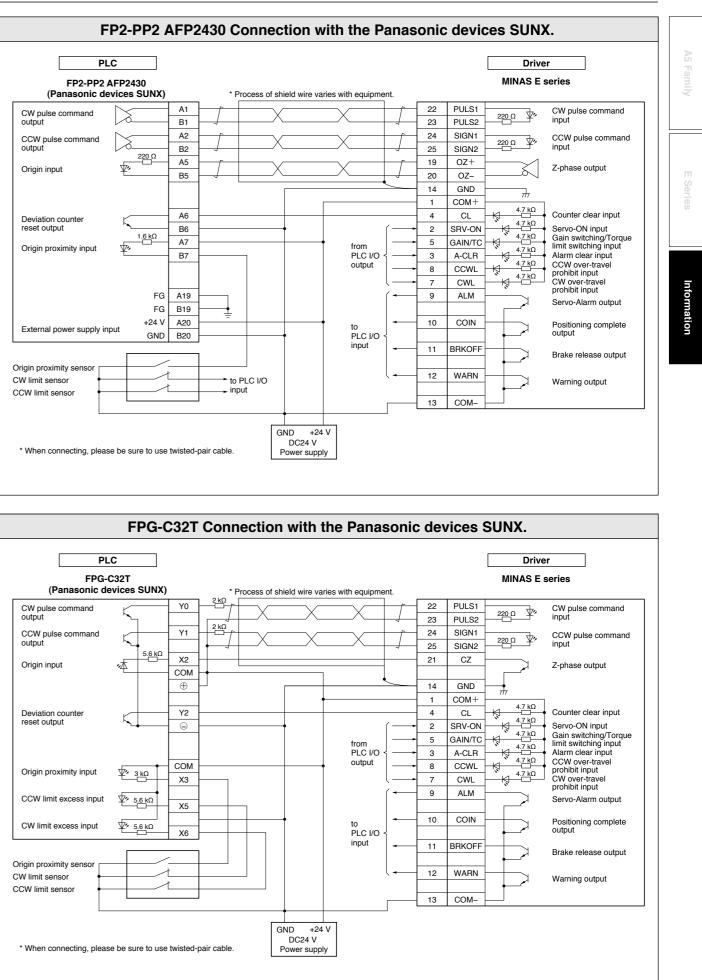
Information

Connection Between Driver and Controller

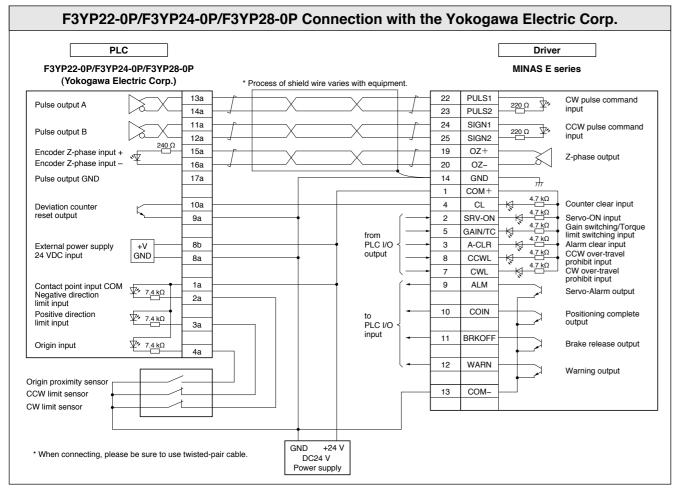


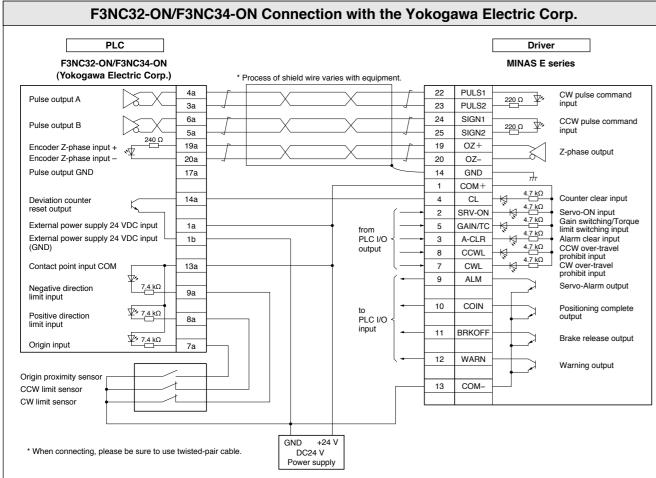


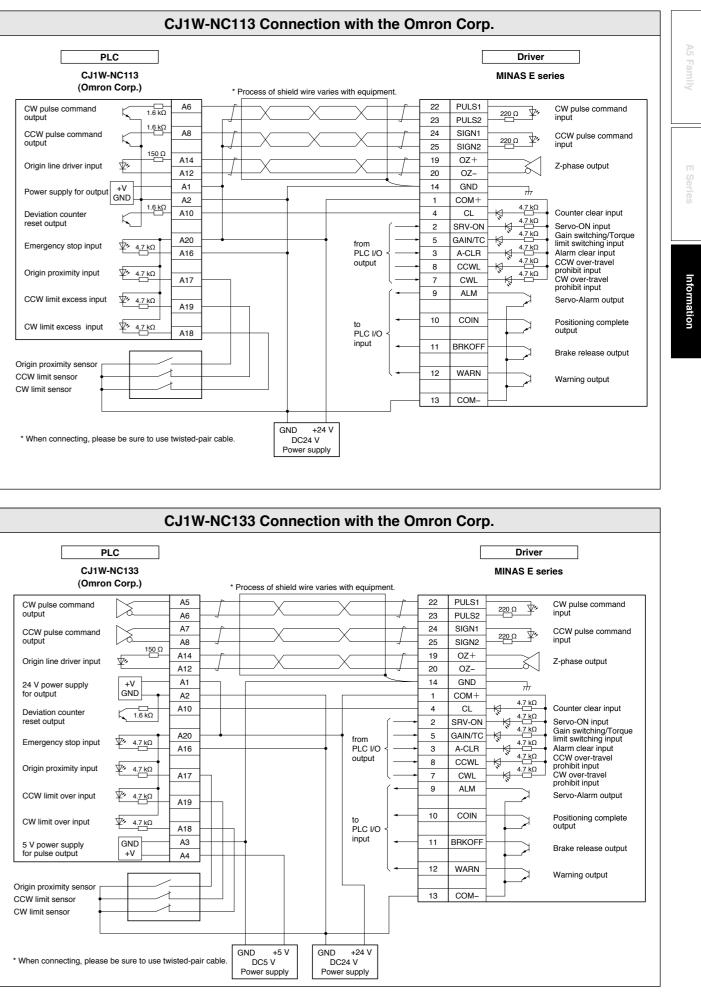


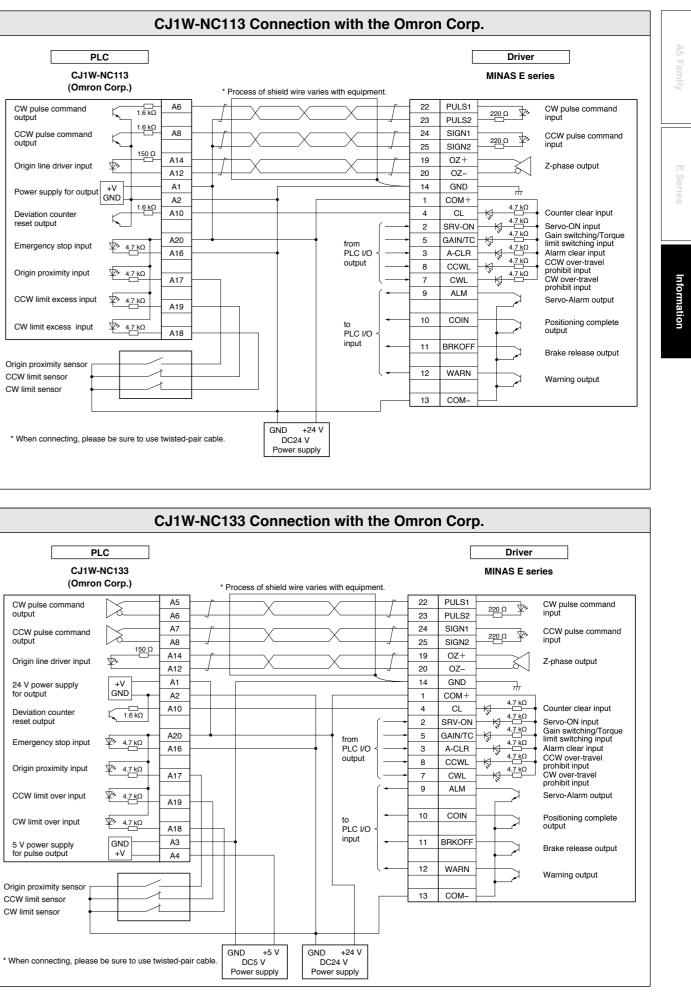


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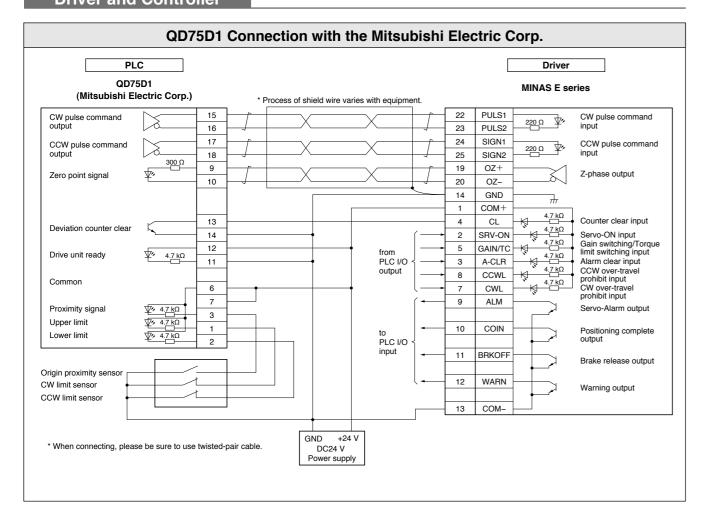






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Connection Between Driver and Controller



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