

High performance, multi function and easy use, all advanced.



DIGITAL AC SERVO MOTOR & DRIVER

MINAS A5



A small step for axis. Large step ahead for system motion. Series

· Innovative encoder



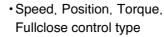
Five industry-leading advantages supported by a variety of new technologies and new features.



Series Line-up







•20bit incremental Encoder, 17bit absolute/incremental Encoder

Rated output: 50W to 5.0kW A5E



- Only position control
- · 20bit incremental Encoder, 17bit incremental Encoder

Rated output: 50W to 15.0kW



 Ultra High-speed Network "Realtime Express (RTEX)" Communication speed: 100Mbps Full-dupleex.



* For details, see the website or request for information



Capacity of applying Linear motor: Compatible with 5.0kW rotaly AC Servo motor



- · Linear Motor and DD Motor Control
- Automatic Setup
- * For details, see the website or request for information



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- · Low noise
- IP67 enclosure rating





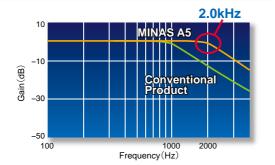
2.0 kHz frequency response

Example application Semiconductor production equipment, packaging, etc.



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

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



<At incremental type>

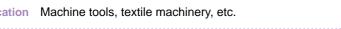


20 bits/revolution, 1.04 million pulses (At incremental type)

Example application Machine tools, textile machinery, etc.







Ensures smoother operation and reduced vibration at stopping.

Ensures accurate positioning in a short time.

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

Conventional A4 Series 2,500 p/r

A5 Series 1,048,576 p/r [1.04 million_pulses]



Low cogging torque (Excluding MSMD, MHMD, MDME 11.0kW. 15.0kW)

Example application

Semiconductor production equipment, textile machinery, etc.

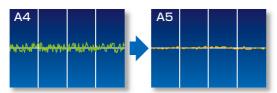






For the industry's most stable speed and lowest cogging

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

Example application Semiconductor production equipment, machine tools, etc. A5

2





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 A5 only.)





Smart

Auto tuning

Highly Functional Real-time Auto-Gain Tuning

Example application

Semiconductor production equipment, food processing machinery, etc.





Incorporates the industry's quickest high-performance real-time auto-gain tuning featuring simple setup.

After installation, tuning will be completed automatically after several operations. When the response is adjusted, simple tuning is supported with a change of one parameter value. Use of the gain adjustment mode in the setup support software contributes to optimum adjustment. The built-in auto vibration suppression function reduces equipment damage. Appropriate modes are provided for various machines such as vertical axis machines and high friction machines with belts.

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





Manual/Auto Notch Filters

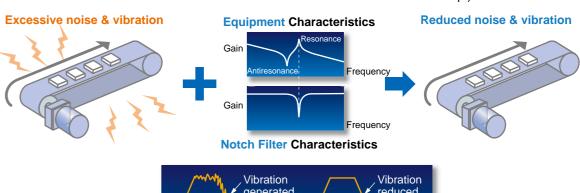
Semiconductor production equipment, **Example application** food processing machinery, etc.

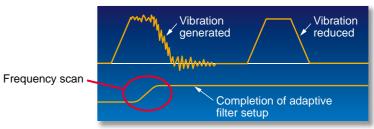


Equipped with auto-setting notch filters for greater convenience.

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

during operation. The A5 Series features an industry-largest total of four notch filters with setup frequencies of 50 to 5,000 Hz. This approach enables depth adjustment within this frequency range. (Two of the filters share the auto set-up.)





Features



Manual/Auto Damping Filter

Example application

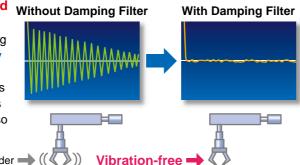
Chip mounters, food processing machinery, robots, general production machinery, etc.





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

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





function.

Motion Simulation

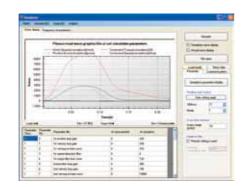
Example application General production machinery, etc.





Equipped with a simplified machine simulation

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.







New Structure/ Innovative Core/ Innovative Encoder (Excluding MSMD, MHMD

Example application Robots, chip mounters, general production machinery, etc. A5







Innovative core



Featuring significantly reduced weight and a more compact motor

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

	- An
=	
	MSMA 2kW
	MSME 2kW

[Examples for MSM or MDM]					
	A4 Series	A5 Series	Weight Reduction		
MSM 1kW	4.5kg	3.5kg	▲ 1kg		
MSM 2kW	6.5kg	5.3kg	▲1.2kg		
MDM 1kW	6.8kg	5.2kg	▲1.6kg		
MDM 2kW	10.6kg	8.0kg	▲2.6kg		





Complies with European Safety Standards.

Example application Semiconductor and LCD production equipment, etc.



Complies with the latest European safety standards.

Features non-software-based (hardware-based?) independent redundant circuitry for motor power isolation. This obviates the need for magnetic contactors to isolate the required motor in order to

accommodate low-voltage machinery commands. (The final safety compliance must be applied as



Low noise

Example application

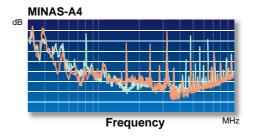
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market



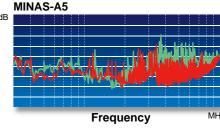


Complies with the European EMC Directive

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







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

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





IP67 enclosure rating for increased environmental resistance

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



IP67 Protection against water Protection against temporary immersion

in water

Protection against dust Protected against dust penetration when in full contact

- Motors of MSMD and MHMD series and 0.9 kW or higher standard stock items have IP65 rating.
- · Motors of IP67 have smaller encoder connector that requires cable compatible with IP67 motor.
- * IP67motor is build to order items.

Easy







PANATERM Set-up Support Software

New PANATERM Set-up Support Software, With many added features.

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.

Trial run

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

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.

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

Encoder Temperature Monitor

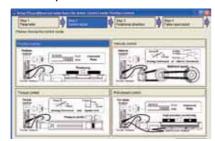
The Encoder Temperature Monitor is a new function capable of real-time measurement of the interior temperature of the encoder, something that has been difficult to achieve in the past. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided with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

Other New Function

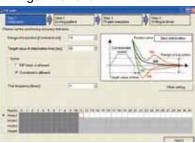
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.



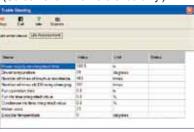
Set up wizard function



· Fit gain function



Service Life Prediction function (Screen shown for reference only.)



· The Data Logging function handles a variety of data types.



* Please download the set up software 「PANATERM」 from our web site and useafter install to the PC <CAUTION>

This software is applicable only to A5 series.

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

Command Control Mode

A5

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

Full closed Control

AB-phase linear scale (for general all-purpose products) or serial scale (for products with Panasonic's exclusive format) scales can be used (page 9.).

SEMI F47

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

Inrush Current Preventive Function A5 A5E

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

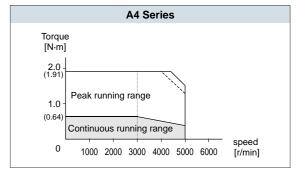
Regenerative Energy Discharge A5 A5E

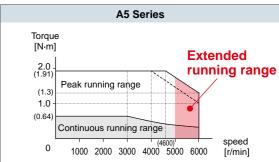
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- Frame A. B. G and frame H model drivers do not contain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

6,000-rpm capability (build to order item) A5 A5E

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

[Comparison of new and conventional 200 W]





Gear head

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

When customers prepare a gear head,

use it as follows: MSME → 6000 r/min

MSMD → 5000 r/min MHMD

Dynamic Braking

- 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

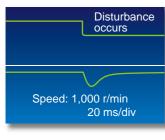
A5 A5E

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

Disturbance Observer

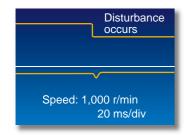
By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

Disturbance observer function not in effect





Disturbance observer function in effect



Torque Feed Forward

A5 A5E

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

Friction Torque Compensation



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

3-Step Gain

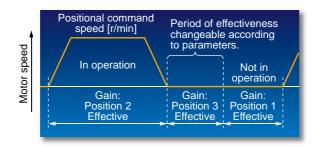


A 3-step gain switch is available in addition to the normal gain switch.

This chooses appropriate gain tunings at both stopping and running.

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

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



Inertia Ratio Conversion



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

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

It ends up quicker response of your system.

Input/Output Signal Assignment A5 A5E



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

Torque Limiter Switching



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

Applicable international safety standards















		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 IEC61800-3	_
	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
EC Directives	Machinery Directives Functional safety 11	EN954-1(CAT3) ISO13849-1(PL c,d) (Cat. 3) EN61508(SIL2) EN62061(SIL2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standards		UL508C (E164620)	UL1004-1 (E327868: 50W to 750W, 6.0kW to 15.0kW) UL1004 (E327868: 400W(400V), 600W(400V), 750W(400V), 0.9kW to 5.0kW)
CSA Standards		C22.2 No.14	C22.2 No.100

IEC: International Electrotechnical Commission

EN: Europaischen Normen

EMC : Electromagnetic Compatibility UL: Underwriters Laboratories

CSA: Canadian Standards Association

Pursuant to the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

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

Applicable External Scales

A5

Applicable External Scale	Manufacturer	Model No.	Resolution [µs]	Maximum Speed (m/s) ^{*2}
Parallel Type (AB-phase)	General	_		speed after
r araller type (AB phase)	General		4 × multiplica	ation: 4 Mpps
		SR75	0.01	3.3
	Magnescale Co., Ltd.	SR85	0.01	3.3
Serial Type (Incremental)	Magnescale Co., Ltd.	SL700, PL101-RP	0.1	10
Serial Type (incremental)		SL710, PL101-RP	0.1	10
	MicroE Systems	MII-5000	0.1*3	5 ^{*3}
	WICIOL Systems	MII-6000	0.1	3
		AT573A	0.05	2
	Mitutoyo Corporation	ST771A(L)	0.5	5
		ST773A(L)	0.1	4
	Mannagala Ca. Ltd	SR77	0.01	3.3
	Magnescale Co., Ltd.	SR87	0.01	3.3
Serial Type (Absolute)			0.001	0.4
	Renishaw plc	RESOLUTE	0.05	20
			0.1	40
		SVAP	0.05	2
	Fagor Automation S.Coop	SAP	0.05	2
		GAP	0.05	2

^{*2:} The maximum speed is a characteristic of the driver. It is limited by the configuration of the machine and the system.

^{*} When export this product, follow statutory provisions of the destination country.

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

^{*3:} It changes by the setting.

Motor Line-up

IVIC	nor Line	-up			Rated	Rotary 6	encoder							
	Мо	tor	Voltage	Rated output (kW)	rotational speed (Max. speed) (r/min)	20-bit	17-bit absolute	Enclosure (*1)	Features	Applications				
	MSMD		100V 200V	0.05 0.1 0.2 0.4	3000 (5000)	0	0	IP65	Leadwire typeSmall capacitySuitable for high speed application					
		384	200V	0.75	3000 (4500)				Suitable for all applications	 Bonder Semiconductor production equipment 				
Low inertia			100V 200V	0.05 0.1 0.2 0.4	3000 (6000)	0	0	IP67	 Small capacity Suitable for high speed application Suitable for all 	Packing machines etc				
rtia	MSME		200V	0.75	` ,				applications					
	IVISIVIE		400V	0.75	3000				Middle capacity Suitable for the machines directly	• SMT machines • Food				
			200V 400V	2.0 3.0	(5000)	0	0	IP65 ^(*2)	coupled with ball screw and high stiffness and high repetitive applica-	machines • LCD production equipment				
			400\/	4.0 5.0	(4500)				tion	etc				
	MDME	400V 1DME 200V 400V	OME 200V	MDME	0.4 0.6 1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines	Conveyors Robots Machine tool			
					400V	400V	400V	400V	400V	400V	7.5 (*3)	1500 (3000)		
Mide				11.0 15.0	1500 (2000)									
Middle inertia	MFME (Flat type)		200V 400V	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		200V 400V	0.9 2.0 3.0 4.5 6.0 (*3)	1000 (2000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low speed and high torque application	Conveyors Robots Textile machines etc				
				3000 (5000)				Leadwire type Small capacity	• Conveyors					
High inertia	MHMD		200V	0.75	3000 (4500)		O IP65	IP65	Suitable for low stiffness machines with belt driven	• Robots etc				
nertia	мнме		200V 400V	1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines with belt driven, and large load	• Conveyors • Robots • LCD manufacturing				
				7.5	1500 (3000)				moment of inertia	equipment etc				

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

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MINAS A5

Model Designation

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

Servo Motor

Symbol

M S M E 5 A Z G 1 S ** Type MSMD Low inertia(50W to 750W) MSME Low inertia(50W to 5.0kW) MDME Middle inertia (400W to 15.0kW) MFME Middle inertia (1.5kW to 4.5kW) MGME Middle inertia (0.9kW to 6.0kW) MHMD High inertia(200W to 750W)

Motor rated output

Rated output	Symbol	Rated output
50W	25	2.5kW
100W	30	3.0kW
200W	40	4.0kW
400W	45	4.5kW
750W	50	5.0kW
0.9kW	60	6.0kW
1.0kW	75	7.5kW
1.5kW	C1	11.0kW
2.0kW	C5	15.0kW
	50W 100W 200W 400W 750W 0.9kW 1.0kW	100W 30 200W 40 400W 45 750W 50 0.9kW 60 1.0kW 75 1.5kW C1

MHME High inertia(1.0kW to 7.5kW)

voitag	Voltage specification			
Symbo	Specifications			
1	100V			
2	200V			
4	400V			
Z	100V/200V common (50W only)			

Rotary encoder specifications

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

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

Special specifications

Motor specifications

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

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

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

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

Design order

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

Motor with reduction gear

M S M E 0 1 1 G 3 1 N

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

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

Motor rated output

Voltage specification								
Symbol Specifications								
1	100V							
2	200V							

Voltage specification									
Symbol	Specifications								
1	100V								

Rotary encoder specifications Symbol Format Pulse counts Resolution Wires G Incremental 20-bit 1,048,576

131,072

17-bit

Gear ratio, gear type

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

^{*} MHMD 100W is not prepared.

Motor structure

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

Servo Driver

S Absolute

Standard type	M	Α	D	Н	Т	1	5	0	5	*	*	*	Special specifications

Positioning type M A D H T 1 5 0 5 E ** -

Frame symbol *

Symbol	Frame
MADH	A5 series Frame A
MBDH	A5 series Frame B
MCDH	A5 series Frame C
MDDH	A5 series Frame D
MEDH	A5 series Frame E
MFDH	A5 series Frame F
MGDH	A5 series Frame G
MHDH	A5 series Frame H

Power device Max. current rating

SVIIIDOI	Frame		
MADH	A5 series Frame A	Symbol	Current rating
MBDH	A5 series Frame B	T1	10A
MCDH	A5 series Frame C	T2	15A
MDDH	A5 series Frame D	T3	30A
MEDH	A5 series Frame E	T4	35A
MFDH	A5 series Frame F	T5	50A
MGDH	A5 series Frame G	T7	75A
MHDH	A5 series Frame H	TA	100A
* A5E seri	ies is up to F-frame.	TB	150A
	•	TC	300A

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

Only position control

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

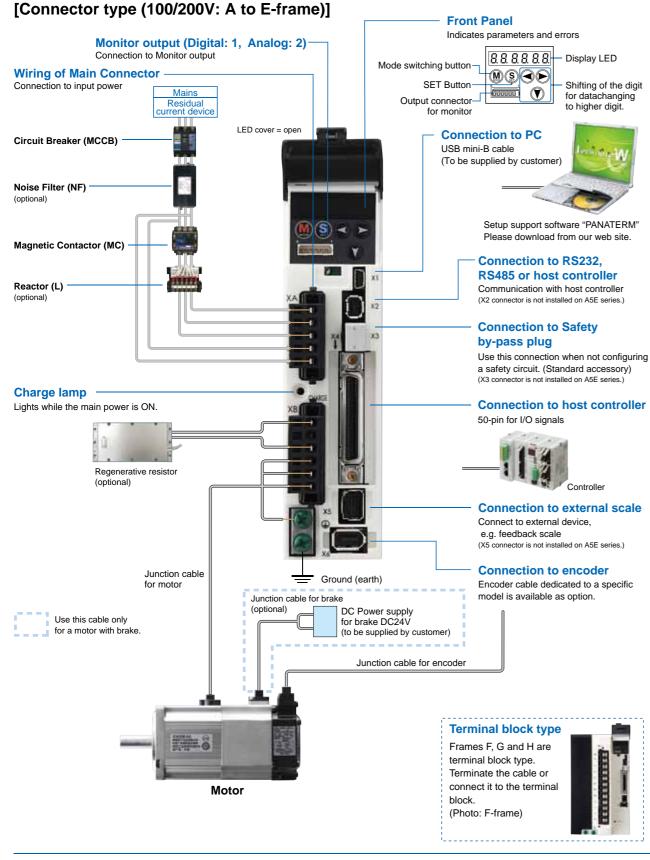
30 30A

- Special specifications

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

^{*} See the page 16 to 23, driver and motor combination.

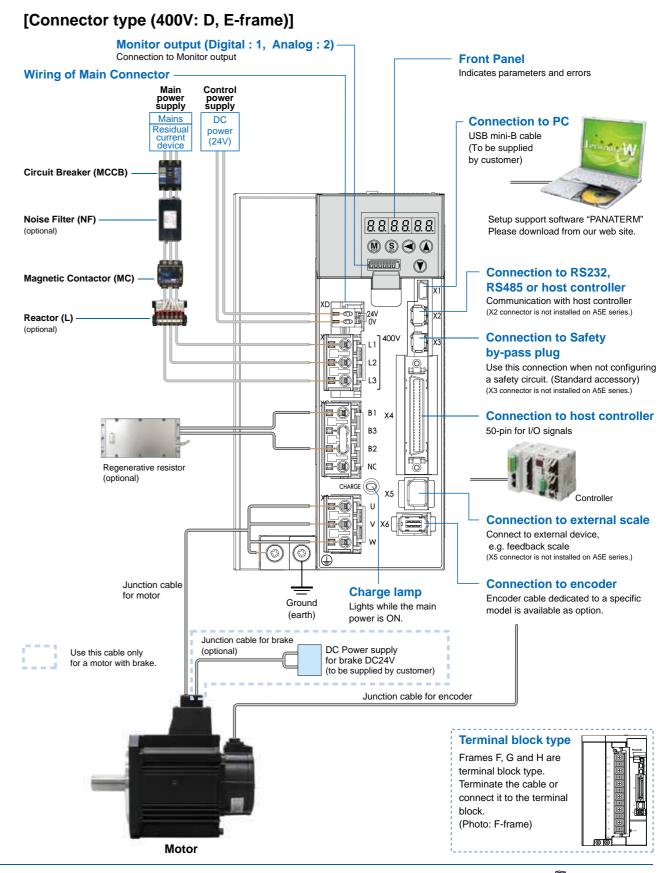
^{*} S: can be used in incremental.



<Caution>

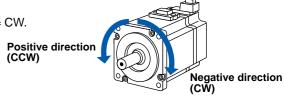
Apply adequate tightening torque to the product mounting screw by taking into consideration strength of the screw and the characteristics of material to which the product is installed. Overtightening can damage the screw and/or material; undertightening can result in loosening.

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



<Note:

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



Driver and List of Applicable Peripheral Equipments

Driver	Applicable motor	Voltage	Rated output	Required Power (at the (rated load)	Circuit breaker (rated (current)	Noise filter (Single phase 3-phase	Surge absorber (Single phase) 3-phase	Noise filter for signal	Rated operating current of magnetic (contactor Contact configuration *1	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *3	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *4	Diameter and withstand voltage of brake cable
		Single phase, 100V	50W to 100W	approx. 0.4kVA		DV0P4170	DV0P4190								
MADH	MSME	Single/ 3-phase, 200V	50W to 200W	approx. 0.5kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450								0.28mm² to
		Single 100V	200W	approx. 0.5kVA	10A	DV0P4170	DV0P4190		20A	0.75mm²/ AWG18					0.75mm²/ AWG22 to
MBDH	MSME	Single/ 3-phase, 200V	400W	approx. 0.9kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450		(3P+1a)	600 VAC or more					AWG18 100 VAC or more
		Single 100V	400W	approx. 0.9kVA			DV0P4190					0.75mm²/ AWG18			of more
MCDH	MSME	Single/ 3-phase, 200V	750W	approx. 1.3kVA	15A	DV0PM20042						600 VAC or more			
	MDME MHME		1.0kW	approx. 1.8kVA	10/1										
	MGME	Single/	0.9kW	approx. 1.8kVA approx.			DV0P4190 DV0P1450	DV0P1460	30A		Conn		Conn		
	MSME MHME	3-phase, 200V	1.0kW	1.8kVA	20A	DV0P4220	2701 1400		(3P+1a)		ection		ection		
	MDME MFME		1.5kW	approx. 2.3kVA							Connection to exclusive connector		Connection to exclusive connector	2.0mm²/ AWG14 600 VAC	
MDDH	MSME		400W	approx. 0.9kVA							usive c		usive c	or more	
	MDME MSME		600W 750W	approx. 1.2kVA approx. 1.6kVA							önnect		onnect		
	MSME MDME	3-phase,	1.0kW	approx.	10A	FN258L-16-07 (Recommended)	DV0PM20050		20A	2.0mm²/ AWG14	ğ	0.52mm²/ AWG20	ğ		
	MHME MGME	400V	0.9kW	1.8kVA	10/1	component)	D V 01 1 W 20000		(3P+1a)	or more		100 VAC or more			
	MSME MDME MFME		1.5kW	approx. 2.3kVA											
	MHME MDME MSME	3-phase,	2.0kW	approx. 3.3kVA	30A	DV0PM20043	DV0P1450	DV0P1460 RJ8035	60A			0.75mm²/ AWG18			
MEDII	MHME	200V	2.5kW	approx. 3.8kVA	JUA	D VOF WI20043	DV0F1430	(Recommended) component *5	(3P+1a)			600 VAC or more			
MEDH	MSME MDME	3-phase,	2.0kW	approx. 3.3kVA	454	FN258L-16-07	DV0PM20050	D1/0D4 400	30A			0.52mm²/ AWG20			
	MHME	400V	2.5kW	approx. 3.8kVA	15A	(Recommended) component	D VOF WIZOUSU	DV0P1460	(3P+1a)			100 VAC or more			
	MGME		2.0kW	approx. 3.8kVA											
	MDME MHME MSME		3.0kW	approx. 4.5kVA					60A (3P+1a)		11mm or smaller		11mm or smaller		
	MGME MDME	3-phase,		approx.				DV0P1460 RJ8035				0.75mm²/ AWG18			
	MHME	200V	4.0kW	6.0kVA	50A	DV0P3410	DV0P1450	(Recommended) component *5	1004		<u>φ5.3</u> Terminal	600 VAC or more	φ5.3 Terminal		0.75mm²/ AWG18
	MFME MGME MDME		4.5kW	6.8kVA approx.					100A (3P+1a)		block M5		block M5		100 VAC or more
MFDH	MHME MSME		5.0kW	7.5kVA						3.5mm²/ AWG12				3.5mm²/ AWG12	
WIFDH	MGME MSME		2.0kW	approx. 3.8kVA						600 VAC or more				600 VAC or more	
	MDME MGME MHME		3.0kW	approx. 4.5kVA							10mm or smaller		7mm or smaller		
	MSME MDME MHME	3-phase, 400V	4.0kW	approx. 6.0kVA	30A	FN258L-30-07 (Recommended) component	DV0PM20050	DV0P1460	60A (3P+1a)		Φ4.3	0.75mm²/ AWG18 100 VAC	φ3.2		
	MFME		4.5kW	approx. 6.8kVA							Terminal block	or more	Terminal block		
	MSME MDME MHME		5.0kW	approx. 7.5kVA							M4		M3		
	MDME		7.5kW	approx. 11kVA							11mm or	0.75mm²/	10mm or		
	MGME	3-phase, 200V	6.0kW	approx. 9.0kVA approx.	60A	FS5559-60-34 (Recommended) component	DV0P1450		100A (3P+1a)	5.3mm²/	smaller	AWG18 600 VAC	smaller		
MGDH	MHME		7.5kW 7.5kW	11kVA		FN258-42-07		-		AWG10 600 VAC	φ5.3	or more	φ5.3	13.3 mm²/ AWG6	
	MGME	3-phase, 400V	6.0kW	11kVA approx. 9.0kVA	30A	or FN258-42-33	DV0PM20050	DV0D1460	60A (3P+1a)	or more	Terminal block	0.75mm²/ AWG18 100 VAC	Terminal block	600 VAC or more	
	МНМЕ	-00 V	7.5kW	approx. 11kVA		(Recommended) component		DV0P1460 RJ8095 (Recommended)	(or+ld)		M5	or more	M5		
		3-phase,	11kW	approx. 17kVA	100A	FS5559-80-34	DV6D:	T400-61D	150A		16mm or	0.75mm²/ AWG18	10mm or	21.1 mm²/	
		200V	15kW	approx. 22kVA	125A	(Recommended component	DV0P1450	(Recommended component *5	(3P+1a)	13.3mm²/	smaller	600 VAC or more	smaller	AWG4 600 VAC or more	
MHDH	MDME	3-phase,	11kW	approx. 17kVA	50A	FN258-42-07 or	DV0PM20050		100A	AWG6 600 VAC or more *2	/ φ6.4 Terminal block	0.75mm²/ AWG18	/ φ4.3 Terminal block	13.3 mm ² / AWG6 600 VAC or more	
		400V	15kW	approx. 22kVA	60A	FN258-42-33 (Recommended component)	DVUPINIZUU5U		(3P+1a)	-	M6	100 VAC or more	M4	21.1 mm²/ AWG4 600 VAC or more	

- *1 For the external dynamic brake resistor, use the magnetic contactor with the same rating as that for the main circuit.
- *2 When use the external regenerative resistor of the option (DV0PM20058, DV0PM20059), use the cable with the same diameter as the main circuit cable
- *3 For the ground screw, use the same crimp terminal as that for the main circuit terminal block.
- *4 The diameter of the ground cable and the external dynamic brake resistor cable must be equal to, or larger than that of the motor cable.
- The motor cable is a shield cable, which conforms to the EC Directives and UL Standards. (G, H-frame only)
- *5 Use thses products to suit an international standard.
- Related page

About circuit breaker and magnetic contactor

To comply to EC Directives, install a circuit break er between the power and the noise filter without fail, and the circuit breaker should conform to IEC Standards and UL recognized (Listed and (Lis

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

<Remarks>

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

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

	Driver	Termina	al block screw	Terminal cover fastening screw		
Frame	Terminal name	Nominal size	Fastening torque (N•m)	Nominal size	Fastening torque (N•m)	
F200V	L1, L2, L3, L1C, L2C, B1, B2, B3, NC, U, V, W	M5	1.0 to 1.7			
F400V	24V、0V	M3	0.4 to 0.6	M3	0.19 to 0.21	
F400V	L1, L2, L3, B1, B2, B3, NC, U, V, W	M4	0.7 to 1.0	IVIO		
G	L1C, L2C, 24V, 0V, DB1, DB2, DB3, DB4, NC	M5	1.0 to 1.7			
G	L1, L2, L3, B1, B2, NC, U, V, W	M5	2.0 to 2.4	M3	0.3 to 0.5	
Н	L1C, L2C, 24V, 0V, DB1, DB2	M4	0.7 to 1.0	M5	2.0 to 2.5	
"	L1, L2, L3, B1, B2, NC, U, V, W	M6	2.2 to 2.5	CIVI	2.0 to 2.5	

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>

- · Applying fastening torque larger than the maximum value may result in damage to the product.
- Do not turn on power without tightening all terminal block screws properly, otherwise, loose contacts may generate heat (smoking, firing).
- <Remarks>
- To check for looseness, conduct periodic inspection of fastening torque once a year.

Motor

Driver

Part No.

DV0P4360 DV0P4120 DV0P4121 DV0P4130

DV0P4131 DV0P4132

DV0PM20034

DV0P4290

DV0P4380

DV0PM20035

DV0PM20040

MFECA0**0MJE

MFECA0**0MKE MFECA0**0TJE MFECA0**0TKE MFMCA0**0EED MFMCA0**0NJD

MFMCA0**0NKD 161

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

MFMCB0**0PJT

MFMCB0**0SJT

MFMCB0**0SKT

DV0P4280

DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285

DV0P4190

DV0P1450

DV0P1460

179

150

153

MFMCB0**0PKT 166

Single row DV0PM20032

D-frame Double row DV0PM20033

type

type

A to D-frame

with Battery Box

without Brake

50Ω 25W

25Ω 50W

50Ω 50W

30Ω 100W

20Ω 130W

DV0P3410

Single phase

3-phase (200V)

DV0P220, DV0P221, DV0P222, DV0P223, DV0P224, DV0P225,

DV0P4170, DV0PM20042

DV0P4220, DV0PM20043

DV0P227, DV0P228, DV0P20047

100Ω 25W

Battery For Absolute Encoder

Options

Interface cable

Connector Kit for Power

Supply Input Connection

Connector Kit for Motor

Connection

Connector Kit for

Connector Kit for

Connector Kit

Battery Box

Junction Cable for Encoder

Junction Cable

Junction Cable for Brake

for Motor

External

Resistor

Reactor

Noise Filter

Surge

absorber

Noise Filter for Signal Lines

Regenerative

Mounting

bracket

Motor/Encoder Connection

Motor/Brake Connection

Interface conversion cable

Title

172

173

176

	RS485, RS232	DV0PM20024		
	Safety	DV0PM20025	168	
	Interface	DV0P4350		
	External Scale	DV0PM20026		
	Encoder	DV0PM20010	169	
	Analog Monitor Signal	DV0PM20031		
S	olute Encoder	DV0P2990	477	
		DV0P4430	177	
	A-frame	DV0PM20027		
	B-frame	DV0PM20028	178	
	C-frame	DV0PM20029		
		MFECA0**0EAM		
		MFECA0**0MJD		
	without Battery Box	MFECA0**0MKD	450	
		MFECA0**0TJD	158	
,		MFECA0**0TKD		
		MFECA0**0EAE		

		IVI	otor				Driver					Optiona	parts				
_		Power	Output	Part No.	Rating/	A5 Series Part No.	A5E Series Part No.		Power	Encode	er cable	Mo	or cable	Brake cable	Regenerative	Reactor	Noise filter
	Motor series		(W)	Note) 1	Spec. (page)	Velocity, Position, Torque, Full-Closed type	Only for position control type Note) 2	Frame	(atrated) load	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3	without brake Note) 3	with brake Note) 3	Note) 3	resistor	Single phase 3-phase	Single phase 3-phase
			50	MSMD5AZ ☐ 1 *	44	MADHT1105	MADHT1105E	A-frame	Approx. 0.4kVA						DV0P4280	DV0P227	
		Single phase	100	MSMD011 □ 1 *	46	MADHT1107	MADHT1107E	A-manie	Approx. 0.4kVA						D V 01 4200	DVOI ZZI	DV0P4170
		100V	200	MSMD021 □ 1 *	48	MBDHT2110	MBDHT2110E	B-frame	Approx. 0.5kVA						DV0P4283	DV0P228	
St	MSMD		400	MSMD041 □ 1 *	50	MCDHT3120	MCDHT3120E	C-frame	Approx. 0.9kVA						DV0P4282	D V 01 220	DV0PM20042
Standard	(Leadwire) type		50	MSMD5AZ ☐ 1 *	45	MADHT1505	MADHT1505E		Approx. 0.5kVA	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE	MFMCA 0 * * 0EEI	_	MFMCB 0 * * 0GET	DV0P4281	DV0P227	
Q.	3000r/min	Single	100	MSMD012 ☐ 1 *	47	MADHT1505	MADHT1505E	A-frame	Approx. 0.5kVA							DV0P220	DV0P4170
		phase/ 3-phase	200	MSMD022 □ 1 *	49	MADHT1507	MADHT1507E		Approx. 0.5kVA								DV0PM20042
Ę		200V	400	MSMD042 ☐ 1 *	51	MBDHT2510	MBDHT2510E	B-frame	Approx. 0.9kVA	_						DV0P228	
FOW IN			750	MSMD082 ☐ 1 *	52	MCDHT3520	MCDHT3520E	C-frame	Approx. 1.3kVA							DV0P220	DV0PM20042
Inertia			50	MSME5AZ ☐ 1 *	60	MADHT1105	MADHT1105E	A-frame	Approx.	MFECA 0 * * 0MJD	MFECA 0 * * 0MJE	MFMCA 0 * * 0NJI	,	MFMCB 0 * * 0PJT	DV0P4280	DV0P227	
		Single phase	100	MSME011 □ 1 *	62	MADHT1107	MADHT1107E		Approx. 0.4kVA Approx.	(For movable, to output shaft)	(For movable, to output shaft)	For movable, to output shaf	\	(For movable, to output shaft)			DV0P4170
		100V	200	MSME021 □ 1 *	64	MBDHT2110	MBDHT2110E		0.5kVA Approx.	MFECA 0 * * 0MKD	MFECA 0 * * 0MKE	MFMCA 0 * * 0NKI)	MFMCB 0 * * 0PKT	DV0P4283	DV0P228	
Q	MSME /Connector\		400	MSME041 □ 1 *	66	MCDHT3120	MCDHT3120E	C-frame	0.9kVA Approx.	(to opposite output shaft)	(to opposite output shaft)	For movable, to opposite output si	aft)	(to opposite output shaft)	DV0P4282		DV0PM20042
Order	type /		50	MSME5AZ 1 *	61	MADHT1505	MADHT1505E		0.5kVA Approx.	MFECA 0 * * 0TJD	MFECA 0 * * 0TJE	MFMCA 0 * * 0RJI	_	MFMCB 0 * * 0SJT	DV0P4281	DV0P227	
	3000r/min	Single phase/	100	MSME012 1 *	63	MADHT1505	MADHT1505E	A-frame	0.5kVA Approx.	(ro output shaft) MFECA	(For fixed, to output shaft)	For fixed, to output shall		(for fixed, to output shaft)		DV0P220	DV0P4170 DV0PM20042
		3-phase 200V	200	MSME022 1 *	65	MADHT1507	MADHT1507E	_	0.5kVA Approx.	0 * * 0TKD For fixed.	0 * * 0TKE / For fixed.	0 * * ORKI		0 * * 0SKT	D) (0D 1000		D V OF IVI20042
		2001	400	MSME042 1 *	67	MBDHT2510	MBDHT2510E		0.9kVA Approx.	(to opposite output shaft)		to opposite output s Note) 3	aft)	(to opposite output shaft)	DV0P4283	DV0P228 DV0P220	D) (0D) 4000 40
		Singlo	750	MSME082 1 *	68	MCDHT3520	MCDHT3520E		1.3kVA Approx.			,			D\/0D4282	B v 01 220	D V 01 111200 12
		Single phase	200	MHMD021 □ 1 * MHMD041 □ 1 *	54	MBDHT2110 MCDHT3120	MBDHT2110E MCDHT3120E		0.5kVA Approx.						DV0P4283 DV0P4282	DV0P228	DV0P4170 DV0PM20042
Standard	MHMD Leadwire	100V	400		56				0.9kVA Approx.	MFECA	MFECA	MFMCA		MFMCB	DVUP4202	DV0P227	
Standard	type / 3000r/min	Single phase/	200	MHMD022	55	MADHT1507	MADHT1507E		0.5kVA Approx.	0 * * 0EAM	0 * * 0EAE	0 * * 0EEI	_	0 * * 0GET	D\/0D4000	DV0P220	DV0P4170 DV0PM20042
ω ω	50001/111111	3-phase 200V	400	MHMD042	57	MBDHT2510	MBDHT2510E		0.9kVA Approx.	-					DV0P4283	DV0P228	
			750	MHMD082 1 *	58	MCDHT3520	MCDHT3520E	C-frame	1.3kVA				bla lamath: ** //				DV0PM20042

Note)1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.11)

Note)2 Because A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

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

Brake cable

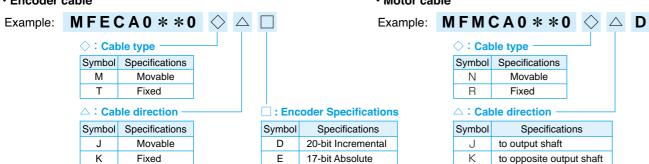
Optional parts

Note)4 Cables for opposite to output shaft cannot be used with 50W or 100W motor.

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

· Encoder cable

· Motor cable



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Example:	MFM	CA0**0	$\Diamond \Diamond \triangle T$
	♦: Cal	ole type ——	
	Symbol	Specifications	
	N	Movable	
	R	Fixed	
	△ : Cal	ole direction —	
	Symbol	Specificati	ons
	J	to output shaft	
	K	to opposite outp	out shaft

Note)2 Because A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification,

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

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Part No.

DV0PM20033

DV0PM20044

DV0PM20051

DV0PM20052

DV0PM20053

DV0PM20034

DV0PM20046

DV0PM20054

DV0PM20045

DV0PM20055

DV0P4310

DV0P4320

DV0P4330

DV0P4340

DV0P4350

DV0P2990

DV0P4430

DV0PM20030

MFMCF0**2ECD

MFMCA0**3ECT

MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD

DV0P4280

DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285

DV0PM20048

DV0PM20049

DV0P4190

DV0P1450

DV0P1460

DV0PM20050

150

153

MFMCA0**3FCT 165

MFECA0**0ESE 160 MFMCA0**2ECD 161 MFMCD0**2ECD MFMCE0**2ECD 162

Analog Monitor Signal DV0PM20031

without Battery Box MFECA0**0ESD 159

DV0PM20024

DV0PM20025

DV0PM20026 DV0PM20010

DV0P4360 DV0P4120 DV0P4121

Single row

type

type

D-frame Double row

E-frame (200V)

D-frame (400V) E-frame (400V)

D, E-frame (400V)

A to D-frame

D-frame (400V)

RS485, RS232

External Scale

Safety

Interface

Encoder

D-frame

with Battery Box

without Brake

with Brake

50Ω 25W

100Ω 25W

25Ω 50W

50Ω 50W

30Ω 100W

20Ω 130W

120Ω 80W

80Ω 190W

DV0P3410

Single phase

3-phase (400V)

Surge absorber 3-phase (200V)

Noise Filter for Signal Lines

DV0P220, DV0P221, DV0P222, DV0P223, DV0P224, DV0P225,

DV0P4220, DV0PM20043

DV0P227, DV0P228, DV0PM20047 DV0P4170, DV0PM20042

Battery For Absolute Encoder

· Options (IP65 motor)

Interface conversion cable

A to

Interface cable

Connector Kit

Supply Input

Connector Kit for Control Power Supply Input Connection

Connector Kit for Motor

Connector Kit

for Regenerativ

Connector Kit for Motor/Encoder Connection

Connector Kit

Battery Box

Junction Cable for Encoder

Junction Cable

for Motor

External

Resistor

Reactor

Noise Filter

Regenerative

Mounting

bracket

Resistor

Connection

for Power

174

175

168

178

		ı	Motor				Driver						Optional p	oarts				
Mot	tor series	Power supply		Part No. Note) 1	Rating/ Spec. (page)	A5 Series Part No. (Velocity, Position, Torque,	A5E Series Part No. (Only for position control type	Frame	Power capacity (atrated) load	Encode 20-bit	17-bit		without	cable with	Brake cable	Regenerative resistor	Reactor Single phase	Noise filter
					(12.30)	Full-Closed type	Note) 2		(load)	Incremental Note) 3	Absolute Note) 2,3		brake Note) 3	brake Note) 3	Note) 3		3-phase	
		Single phase/	1000	MSME102□C*	69	MDDHT5540	MDDHT5540E	D-frame	Approx. 1.8kVA	,				=		DV0P4284	DV0P228 DV0P222	DV0P42
		3-phase 200V	1500	MSME152□C*	70	MDDHT5540	MDDHT5540E	J	Approx. 2.3kVA	MFECA	MFECA		MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	5 7 01 12
			2000	MSME202□C*	71	MEDHT7364	MEDHT7364E	E-frame	Approx. 3.3kVA	0**0ESD	0**0ESE				_	DV0P4285 Note) 5	DV0P223	DV0PM2
	MSME			MSME302□C*	72	MFDHTA390	MFDHTA390E		Approx. 4.5kVA				MEMOA	MENAGA		D) (0D 4005 - 0	DV0P224	
	3000r/min	200V		MSME402□C*	73		MFDHTB3A2E	F-frame	Approx. 6kVA				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 x2 in parallel	DV0P225	DV0P3
1.	30001/111111			MSME502□C*	74	MFDHTB3A2	MFDHTB3A2E		Approx. 7.5kVA								Note) 4	
				MSME104 C*	100	MDDHT3420	MDDHT3420E	D-frame	Approx. 1.8kVA				MFMCD	MFMCE		DV0PM20048		
		0 1		MSME154 C * MSME204 C *	101	MDDHT3420 MEDHT4430	MDDH 13420E		Approx. Z.3KVA	MEEGA	MEEGA		0**2ECD	0**2FCD		DV0DM20040		Recomm
				MSME304 C *	102	MFDHT5440	MEDHT4430E MFDHT5440E	E-mame	Approx. 4.5kVA	MFECA 0**0ESD	MFECA 0**0ESE	-			 	DV0PM20049	Note) 4	compor
		1001		MSME404 C*	103	MFDHTA464	MFDHTA464E	F-frame	- ' '	0 0202	0 0202		MFMCA	MFMCA		DV0PM20049	14010) 1	P.15
				MSME504 C*	105		MFDHTA464E	•	Approx. 7.5kVA				0**3ECT	0**3FCT		x2 in parallel		
		Single phase/		MDME102□C*	75	MDDHT3530	MDDHT3530E	D-frame	Approx. 1.8kVA				MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222	DV0P4
		3-phase 200V		MDME152 C*	76	MDDHT5540	MDDHT5540E	_	Approx. 2.3kVA	MFECA	MFECA		0**2ECD	0**2FCD	_	DV0P4285	DV0PM20047 DV0P222	
			2000	MDME202□C*	77	MEDHT7364	MEDHT7364E	E-frame	Approx. 3.3kVA	0**0ESD	0**0ESE					Note) 5	DV0P223	DV0PM2
	MDME			MDME302□C*	78	MFDHTA390	MFDHTA390E		Approx. 4.5kVA							D) (0D 1005 0	DV0P224	
		200V	4000	MDME402□C*	79	MFDHTB3A2	MFDHTB3A2E	F-frame	Approx. 6kVA				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 x2 in parallel	DV0P225	DV0P3
	2000r/min		5000	MDME502 C*	80	MFDHTB3A2	MFDHTB3A2E		Approx. 7.5kVA				U SECT	0 3501		iii parallei	Note) 4	
			1000	MDME104□C*	108	MDDHT2412	MDDHT2412E	D.framo	Approx. 1.8kVA				MFMCD	MFMCE		DV0PM20048		
<u> </u>				MDME154□C*	109	MDDH 1 3420	MDDH13420E		Approx. 2.3KVA				0**2ECD	0**2FCD				Recomm
Middle inertic				MDME204 C*			MEDHT4430E	E-frame	- ' '	MFECA	MFECA		·	0 2: 02	_	DV0PM20049	.	compoi
2.		400V		MDME304 C *		MFDHT5440	MFDHT5440E MFDHTA464E	F	Approx. 4.5kVA	0**0ESD	0**0ESE		MFMCA	MFMCA		DV0PM20049	Note) 4	P.15
ב . ט				MDME404 C *		MFDHTA464	MFDHTA464E		Approx. 7.5kVA				0**3ECT	0**3FCT		x2 in parallel		
	MGME	Single phase/ 3-phase 200V	900	MGME092 C*		MDDHT5540	MDDHT5540E			MFECA 0**0ESD	MFECA 0**0ESE		MFMC D0**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4
/L	_ow speed/\ High torque		2000	MGME202□C*	88	MFDHTA390	MFDHTA390E	F-frame	Approx. 3.8kVA				MFMCA	MFMCA		DV0P4285 x2	DV0P223	DVOD
	type			MGME302□C*	89	MFDHTB3A2	MFDHTB3A2E	⊢ -trame	Approx. 4.5kVA				0**3ECT	0**3FCT		in parallel	DV0P224	DV0P3
	1000r/min		900	MGME094□C*	120	MDDHT3420	MDDHT3420E	D-frame	Approx. 1.8kVA				MFMCD	MFMCE		DV0PM20048		Recomm
		3-phase 400V								MFECA 0**0ESD	MFECA		0**2ECD	0**2FCD	-	D) (0D) 4000 40	— Nata) 4	compor
		400 V		MGME204 C *	_	MFDHT5440 MFDHTA464	MFDHT5440E MFDHTA464E	F-frame	Approx. 3.8kVA Approx. 4.5kVA	0 0550	0**0ESE		MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 x2 in parallel	Note) 4	P.15
		Single											0 0201	0 0101		XZ III paralici	DV0P228/	
		phase/ 3-phase		MHME102 C * MHME152 C *	92	MDDHT3530 MDDHT5540	MDDHT3530E MDDHT5540E	D-frame	Approx. 1.8kVA Approx. 2.3kVA				MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P222 DV0PM20047/	DV0P4
		200V	2000	MHME202□C*	94	MEDHT7364	MEDHT7364E	E-frame	Approx. 3.3kVA	MFECA 0**0ESD	MFECA 0**0ESE		MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 5	DV0P222 DV0P223	DV0PM
_		3-phase	3000	MHME302□C*	95	MFDHTA390	MFDHTA390E		Approx. 4.5kVA				0 ZEOD	V 21 0D	1	, -	DV0P224	
<u>5</u>	мнме	200V		MHME402 C*	96		MFDHTB3A2E	F-frame	Approx. 6kVA				MFMCA	MFMCA		DV0P4285 x2	DV0P225	DV0P3
Ligh in ortion	2000r/min			MHME502 C*	97	MFDHTB3A2	MFDHTB3A2E		Approx. 7.5kVA				0**3ECT	0**3FCT		in parallel	Note) 4	
1.	_5557/111111			MHME104□C*			MDDHT2412E	_	Approx. 1.8kVA				MFMCD	MFMCE			140(6) 4	
				MHME154 C*		MDDHT3420	MDDHT3420E	D-frame	Approx. 2.3kVA				0**2ECD	0**2FCD		D\/0DN400040		
		3-phase		MHME204 C*	127	MEDHT4430	MEDHT4430E			MEECA	MFECA		MFMCE	MFMCE		DV0PM20049		Recomm
		3-phase 400V						L-marne		MFECA 0**0ESD	0**0ESE		0**2ECD	0**2FCD	_		Note) 4	compor
				MHME304 C*	_		MFDHT5440E		Approx. 4.5kVA	0 0200	0 0202		MFMCA	MFMCA		DV0PM20049		P.15
				MHME404 C *			MFDHTA464E		Approx. 6kVA Approx. 7.5kVA				0**3ECT	0**3FCT		x2 in parallel		
					1 211	N/15 1 1 1 1 / / / / / /	N/I = I I = I I A A B A B								1			

(Example. 3m: MFECA0030EAM)

Note)5 Other combinations exist, and refer to P.180 for details.

Table of Part Numbers and Options 400W to 15.0kW IP67 motor (MSME MDME MFME)

		Motor				Driver		B			Optional p	parts					Options (IP6)	Title	Part No.	
					A5 Series	A5E Series		Power capacity	Encode	er cable	Motor	cable	Brake cable				Interface cable	Title	DV0P4360	
lotor series	Power supply	Output (W)	Part No. Note) 1	Rating Spec. (page)	Part No. /Velocity, Position, Torque, Full-Closed type	Part No. (Only for position control type Note) 2	Frame	(atrated) load	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3	without brake Note) 3	with brake Note) 3	Note) 3	Regenerative resistor	Single phase 3-phase	Noise filter	Interface conve	rsion cable	DV0P4120 DV0P4121 DV0P4130	
	Single phase/	1000	MSME102□1*	69	MDDHT5540	MDDHT5540E	D	Approx. 1.8kVA						DV0P4284	DV0P228 DV0P222	DV0P4220			DV0P4131 DV0P4132	
	3-phase 200V	1500	MSME152□1 *	70	MDDHT5540	MDDHT5540E	D-Irame	Approx. 2.3kVA	MFECA	MFECA	MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	DV0F4220	Connector Kit	A to Single row type Double row	DV0PM200	
		2000	MSME202□1*	71	MEDHT7364	MEDHT7364E	E-frame	Approx. 3.3kVA		0**0ETE			_	DV0P4285 Note) 6	DV0P223	DV0PM20043	for Power Supply Input Connection	E-frame (200V)	DV0PM200	
	3-phase 200V		MSME302 1 *	72		MFDHTA390E		Approx. 4.5kVA			MFMCA	MFMCA		DV0P4285	DV0P224		Connection	D-frame (400V)	DV0PM200	
MSME		4000 5000	MSME402 1 * MSME502 1 *	73 74	MFDHTB3A2 MFDHTB3A2	MFDHTB3A2E MFDHTB3A2E	F-frame	Approx. 6kVA Approx. 7.5kVA			0**3ECT	0**3FCT		x2 in parallel	DV0P225	DV0P3410	Connector Kit	E-frame (400V)	DV0PM20	
3000r/min			MSME084_1 * MSME104_1 *	99 100	MDDHT2412 MDDHT3420	-	D-frame	Approx. 1.6kVA			MFMCD	MFMCE		DV0PM20048	Note) 5		for Control Power Supply Input Connection	D, E-frame (400V)	DV0PM20	
	3-phase		MSME154_1 *	101	MDDHT3420	MDDHT3420E		Approx. 2.3kVA	MFECA	MFECA	0**2ECD	0**2FCD			_	Recommended	Connector Kit	A to D-frame	DV0PM20	
	400V	2000	MSME204 1 * MSME304 1 *	102 103		MEDHT4430E MFDHT5440E	E-frame	Approx. 3.3kVA Approx. 4.5kVA	0**0ETD	0**0ETE			-	DV0PM20049	Note) 5	components P.152	for Motor Connection	E-frame (200V) D-frame (400V)	DV0PM20 DV0PM20	
			MSME404_1 *	103		MFDHT3440E	F-frame				MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 x2 in parallel		52		E-frame	DV0PM20	
		5000	MSME504□1*	105	MFDHTA464	MFDHTA464E		Approx. 7.5kVA			0 3501	0 3501		xz III parallel			for Regenerative Resistor	D-frame (400V)	DV0PM20	
	Single phase/ 3-phase		MDME102□1*	75	MDDHT3530	MDDHT3530E	D-frame	Approx. 1.8kVA			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	Connector Kit for Motor/Encoder		DV0PM20 DV0PM20 DV0PM20	
	200V	1500	MDME152□1*	76	MDDHT5540	MDDHT5540E		Approx. 2.3kVA			0**2ECD	0**2FCD			DV0P222				DV0PM20	
		2000	MDME202_1*	77	MEDHT7364	MEDHT7364E	E-frame	Approx. 3.3kVA						DV0P4285 Note) 6	DV0P223	DV0PM20043		RS485, RS232 Safety	DV0PM20 DV0PM20	
		3000	MDME302□1*	78	MFDHTA390	MFDHTA390E		Approx. 4.5kVA	0""0ETD 0""0ETE			_		DV0P224		Connector Kit	Interface	DV0P435		
			MDME402_1*	79			F-frame		0 OEID	O OLIL	MFMCA 0**3ECT			DV0P4285 x2 in parallel	DV0P225	225 DV0P3410	Connector Kit	External Scale	DV0PM20	
	200V	5000	MDME502□1*	80	MFDHTB3A2	MFDHTB3A2E		Approx. 7.5kVA		-				-	DV0P4285				Encoder Analog Monitor Signal	DV0PM20
		7500	MDME752□1*	81	MGDHTC3B4		G-frame	Approx. 11kVA			_	_		x3 in parallel	— Note) F	Recommended	Battery For Abs		DV0P299	
MDME			MDMEC12_1*	_	MHDHTC3B4	_	H-frame	Approx. 17kVA			Note) 4	Note) 4		DV0PM20058	Note) 5	components P.152	Battery Box		DV0P443	
2000r/min		15000 400	MDMEC52 1 * MDME044 1 *	83 106	MHDHTC3B4			Approx. 22kVA Approx. 0.9kVA									Mounting bracket	D-frame	DV0PM20	
		600	MDME064_1*	107	MDDHT2407	MDDHT2407E	_	Approx. 1.2kVA									Junction Cable		MFECA0**	
		1000	MDME104_1*	108	MDDHT2412	MDDHT2412E	D-frame	Approx. 1.8kVA			MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048			for Encoder	with Battery Box	MFECA0**	
			MDME154_1 *	109		MDDHT3420E	-	Approx. 2.3kVA			- ====			D) (oD) (oo o (o					MFMCD0*	
	3-phase		MDME204□1* MDME304□1*	110	MEDHT4430 MFDHT5440	MEDHT4430E MFDHT5440E	L -frame	Approx. 3.3KVA Approx. 4.5kVA	MFECA	MFECA			-	DV0PM20049	_	Recommended		without Brake	MFMCE0**	
	400V		MDME404_1*		MFDHTA464	MFDHTA464E	F-frame		0**0ETD	0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049	Note) 5	components P.152	Junction Cable		MFMCA0*	
		5000	MDME504_1 *	113	MFDHTA464	MFDHTA464E		Approx. 7.5kVA			0 3501	0 3501		x2 in parallel		F.152	for Motor		MFMCD0*	
		7500	MDME754□1*	114	MGDHTB4A2		G-frame	Approx. 11kVA			_	_		DV0PM20049 x3 in parallel				with Brake	MFMCA0*	
			MDMEC14□1*			_	H-frame	Approx. 17kVA			Note) 4	Note) 4		DV0PM20059					MFMCA0*	
	0: 1	15000	MDMEC54□1 *	116	MHDHTB4A2		· · · · · · · · · · · · · · · · · · ·	Approx. 22kVA						D 7 01 11120000				50Ω 25W 100Ω 25W	DV0P428	
	Single phase/	1500	MFME152□1*	84	MDDHT5540		D.	. 2.214/4			MFMCA	MFMCA		DV0P4284	DV0PM20047	DV0P4220		25Ω 50W	DV0P428	
	3-phase 200V	1500	MEINE 152 1 4	04	IVIDDH 15540		D-trame	Approx. 2.3kVA			0**2ECD	0**2FCD		DV0P4204	DV0P222	DV0P4220	External Regenerative	50Ω 50W	DV0P428	
	2001	0500	NATINE OF OF A str	05	MEDITZOGA	_	F.	. 0.013/4	MFECA 0**0ETD	MFECA 0**0ETE	MFMCF	MFMCE	-	DV0P4285	D) (ODOO 4	D) (0D) (000 40	Resistor	30Ω 100W 20Ω 130W	DV0P428	
MFME	3-phase	2500	MFME252□1 *	85	MEDHT7364	_	⊏ -frame	Approx. 3.8kVA	- 02.0	- 02.2	0**2ECD	0**2FCD	1	Note) 6	DV0P224	DV0PM20043			DV0P428 DV0PM20	
(Flat type) 2000r/min	200V	4500	MFME452□1 *	86	MFDHTB3A2		F-frame	Approx. 6.8kVA			MFMCD 0**3ECT	MFMCA 0**3FCT		DV0P4285 x2 in parallel	Note) 5	DV0P3410		80Ω 190W	DV0PM20	
20001/111111			MFME154_1*		MDDHT3420			Approx. 2.3kVA			MFMCF	MFMCE		DV0PM20048		Recommended	Reactor	DV0P220, DV0P221, DV0P223, DV0P224,	DV0P225,	
	3-phase 400V	2500	MFME254□1 *	118	MEDHT4430	_	E-frame	Approx. 3.8kVA	MFECA 0**0ETD	MFECA 0**0ETE	0**2ECD	0**2FCD	-	DV0PM20049	— Noto) F	components		DV0P227, DV0P228, DV0P4170, DV0PM2		
	4007	4500	MFME454□1 *	119	MFDHTA464		F-frame	Approx. 6.8kVA	ט טבוט	O DETE	MFMCD 0**3ECT	MFMCA 0**3FCT		DV0PM20049 x2 in parallel	Note) 5	P.152	Noise Filter	DV0P4170, DV0PM2 DV0P4220, DV0PM2 DV0P3410		
1)1 Potony c	encoder so	ecificat	ions: Motor sp	ecifica	ation: * (refer t	n P 11)					Note)4 Rec	ommend to	ant the	onnoctor kit of	ontions			Cingle phone	DV0P4190	
			rs (dedicated for p											red by the use			Surge absorber	Single phase 3-phase (200V)	DV0P1415	

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

Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.ctiautomation.net - Email: info@ctiautomation.net

Noise Filter for Signal Lines

Part No.

DV0P4360 DV0P4120 DV0P4121

DV0P4130 DV0P4131

			DV0P4132		
	A to	Single row type	DV0PM20032		
Connector Kit for Power	D-frame	Double row type	DV0PM20033	170	
Supply Input Connection	E-frame	(200V)	DV0PM20044	170	
Connection	D-frame	(400V)	DV0PM20051		
	E-frame	(400V)	DV0PM20052		
Connector Kit for Control Power Supply Input Connection	D, E-frar	me (400V)	DV0PM20053		
Connector Kit	A to D-fr	ame	DV0PM20034	171	
for Motor	E-frame	(200V)	DV0PM20046	17.1	
Connection	D-frame	(400V)	DV0PM20054		
Connector Kit	E-frame		DV0PM20045		
for Regenerative Resistor	D-frame	(400V)	DV0PM20055		
			DV0PM20036	173	
Connector Kit fo	r		DV0PM20037	474	
Motor/Encoder (Connectio	n	DV0PM20038	174	
			DV0PM20039	175	
	RS485,	RS232	DV0PM20024		
	Safety		DV0PM20025	168	
0	Interface)	DV0P4350		
Connector Kit	External	Scale	DV0PM20026		L
	Encoder		DV0PM20010	169	
	Analog M	Ionitor Signal	DV0PM20031		
Battery For Abso	olute Enco	oder	DV0P2990	477	
Battery Box			DV0P4430	177	
Mounting bracket	D-frame		DV0PM20030	178	
Junction Cable	without E	Battery Box	MFECA0**0ETD	159	
for Encoder	with Batt	ery Box	MFECA0**0ETE	160	
			MFMCA0**2ECD	161	
			MFMCD0**2ECD		
	without E	Proko	MFMCE0**2ECD	162	
lunation Cabla	WILLIOUL	Diake	MFMCF0**2ECD		
Junction Cable for Motor			MFMCA0**3ECT	163	
IOI WOLOI		103			
		CD 164			
	with Bral	MFMCE0**2FCD	104		
			MFMCA0**3FCT	165	
	50Ω 25V	V	DV0P4280		
	100Ω 25	W	DV0P4281		
	25Ω 50V	V	DV0P4282		
Evtornal				1	

External

Resistor

Reactor

23

Noise Filter

Regenerative

50Ω 50W

30Ω 100W

20Ω 130W

120Ω 80W

80Ω 190W

Single phase

3-phase (400V)

Surge absorber 3-phase (200V)

Noise Filter for Signal Lines

DV0P220, DV0P221, DV0P222,

DV0P223, DV0P224, DV0P225, DV0P227, DV0P228, DV0PM20047

DV0P4170, DV0PM20042 DV0P4220, DV0PM20043 DV0P3410

DV0P4283

DV0P4284

DV0P4285

DV0PM20048

DV0PM20049

DV0P4190

DV0P1450

DV0P1460

DV0PM20050

			Motor				Driver					Optional	parts					· Options (IP6	5 motor)	
						A5 Series	A5E Series		Power			Mata		Brake					Title	
		Power	Outnut	Part No.	Rating/		Part No.		capacity	Encode	er cable	Moto	r cable	cable	Regenerative	Reactor	Noise	Interface cable		
M	otor series	supply		Note) 1	Spec. (page)	Velocity, Position, Torque, Full-Closed type	Only for position control type Note) 2	Frame	(atrated) load	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3	without brake Note) 3	with brake Note) 3	Note) 3	resistor	Single phase 3-phase	filter	Interface conversion cable		
		Single phase/ 3-phase 200V	900	MGME092□1 *	87	MDDHT5540	MDDHT5540E	D-frame	Approx. 1.8kVA			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220			Sin
		2001	2000	MGME202□1*	88	MFDHTA390	MFDHTA390E		Approx. 3.8kVA					-		DV0P223		Connector Kit	A to t	typ Do
				MGME302 1 *	89		MFDHTB3A2E	F-frame		MEECA	MFECA 0**0ETE	MFMCA	MFMCA	_	DV0P4285	DV0P224	DV0P3410	for Power Supply Input	t	typ
		3-phase		MGME452□1*			MFDHTB3A2E	· iiaiiio	Approx. 7.5kVA	0 0212	U UEIE	0**3ECT	0**3FCT		x2 in parallel	2 7 0 7 22 7		Connection	E-frame (2	
Middle	MGME	200V				-	-		11					-		_	Recommended		D-frame (4	
dle inertia	Low speed/ High torque type		6000	MGME602□1*	91	MGDHTC3B4	_	G-frame	Approx. 9.0kVA			Note) 4	Note) 4		DV0P4285 ×3 in parallel	Note) 5	components P.152	Connector Kit for Control Power	D, E-frame	
tia	1000r/min		900	MGME094⊡1*	120	MDDHT3420	MDDHT3420E	D-frame	Approx. 1.8kVA			MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048			Supply Input Connection		`
			2000	MGME204□1*	121	MFDHT5440	MFDHT5440E		Approx. 3.8kVA								Recommended	Connector Kit	A to D-fram	
		3-phase 400V	3000	MGME304□1*	122	MFDHTA464	MFDHTA464E	F-frame	Approx. 4.5kVA	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 x2 in parallel	Note) 5	components	for Motor Connection	E-frame (2 D-frame (4	
		4001	4500	MGME454□1*	123	MFDHTA464	MFDHTA464E		Approx. 7.5kVA		O OLIL	0 3201	0 3101		AZ III PAIAIICI	140(0) 0	P.152	Connector Kit	E-frame	100
			6000	MGME604⊡1 *	124	MGDHTB4A2	_	G-frame	Approx. 9.0kVA			— Note) 4	— Note) 4		DV0PM20049 x3 in parallel			for Regenerative Resistor	D-frame (4	400
		Single phase/	1000	MHME102□1*	92	MDDHT3530	MDDHT3530E	D-frame	Approx. 1.8kVA			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222	DV0P4220	Connector Kit for Motor/Encoder		ı
		3-phase 200V	1500	MHME152 1 *	93	MDDHT5540	MDDHT5540E	D-mame	Approx. 2.3kVA			0**2ECD	0**2FCD		D V 01 4204	DV0PM20047	B V 01 4220		D0107 D	
			1000	WI IIVIE TOE	00	111221110010	1115511166162		Approx. 2.01017							DV0P222			RS485, R	S2
			2000	MHME202□1*	94	MEDHT7364	MEDHT7364E	E-frame	Approx. 3.3kVA	MFECA	MFECA	MFMCE	MFMCE 0**2FCD		DV0P4285	DV0P223	DV0PM20043		Interface	
			2000	MHME302□1 *	95	MFDHTA390	MFDHTA390E		Approx. 4.5kVA	0++0570	0**0ETE	0**2ECD	U ZFCD	 	Note) 6	DV0P224		Connector Kit	External S	cal
				MHME402 1 *	96		MFDHTB3A2E	E 6				MFMCA	MFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410		Encoder	
		3-phase 200V		MHME502 1 *	+		MFDHTB3A2E	r-trame	Approx. 7.5kVA			0**3ECT	0**3FCT		x2 in parallel	DV0F225	DV0F3410		Analog Mo	
Hig			3000	MUNICOUZ ☐ 1 本	91	WIFDHIBSAZ	WIFDHIBSAZE		Approx. 7.3KVA					_			Recommended	Battery For Abs	olute Encod	ler
Ξ.	MHME		7500	MHME752□1 *	98	MGDHTC3B4	_	G-frame	Approx. 11kVA			_	_		DV0P4285	Note) 5	components	Mounting	I	
High inertia	2000r/min		7000			WODIN OOD I		O mamo	лиргох.			Note) 4	Note) 4		x3 in parallel	,	P.152	bracket	D-frame	
_			1000	MHME104□1*	125	MDDHT2412	MDDHT2412E	D-frame	Approx. 1.8kVA			MFMCD			DV0PM20048					
			1500	MHME154□1 *	126	MDDHT3420	MDDHT3420E	D-frame	Approx. 2.3kVA			0**2ECD	MFMCE		D V 0F IVI20040			ioi Liicodei	with Batte	ТУ
				MHME204□1 *	127	MEDHT4430	MEDHT4430E	E-frame	Approx. 3.3kVA		==	MFMCE 0**2ECD	0**2FCD		DV0PM20049		Recommended			
		3-phase 400V	3000	MHME304□1 *	128	MFDHT5440	MFDHT5440E		Approx. 4.5kVA	MFECA 0**0ETD	MFECA 0**0ETE			—	D) /2D1 /200 /2	Mote) 5	components		without Br	ak
		.50 v	4000	MHME404□1 *	129	MFDHTA464	MFDHTA464E	F-frame	Approx. 6kVA	J OLID	O OLIL	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 x2 in parallel	110.07 0	P.152	Junction Cable for Motor		
			5000	MHME504□1 *	130	MFDHTA464	MFDHTA464E		Approx. 7.5kVA			0 3201	0 01 01		III parailoi					
			7500	MHME754 <u></u> 1∗	131	MGDHTB4A2	_	G-frame	Approx. 9.0kVA			Note) 4	— Note) 4		DV0PM20049 x3 in parallel				with Brake	Э

Note)1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.11)

Note)2 Because A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

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

Note)4 Recommend to get the connector kit of options.

Note)5 Reactor should be prepared by the user.

Note)6 Other combinations exist, and refer to P.180 for details.

			Main	circuit	Single phase, 100 to 120V +10% 50/60Hz						
		100V	Contro	l circuit	Single phase, 100 to 120V +10%						
			Main	A to D-frame	Single/3-phase, 200 to 240V +10%						
	Input	200V	circuit	E to H-frame	3-phase, 200 to 230V +10% 50/60Hz						
	Input power	200 V	Control	A to D-frame	Single phase, 200 to 240V +10% 50/60Hz						
			circuit	E to H-frame	Single phase, 200 to 230V +10% 50/60Hz						
		400V	Main circuit	D to H-frame	3-phase, 380 to 480V +10% 50/60Hz						
		400 V	Control circuit	D to H-frame	DC 24V ± 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 1000m						
			Vibr	ation	5.88m/s² or less, 10 to 60Hz (No continuous use at resonance frequency)						
	Cor	ntrol meth	od		IGBT PWM Sinusoidal wave drive						
Basi	Enc	oder feed	dback		17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial						
c Spec	Fee	edback so	·ale	A/B phase	A/B phase, initialization signal defferential input.						
Basic Specifications		dback	aic	serial	Manufacturers that support serial communication scale: Mitutoyo Corporation Magnescale Co., Ltd. MicroE Systems Renishaw KK, Fagor Automation S.Coop						
	Pe	Control	eignal	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.						
	Parallel I/	Control	Sigriai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.						
	000	Analog	signal	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)						
	connector	7 thalog	Jigilai	Output	2 outputs (Analog monitor: 2 output)						
	ctor	Pulse si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)						
		. 0.00 0.	9.1.	Output	4 outputs (Line driver: 3 output、open collector: 1 output)						
	Cor	nmunicat	ion	USB	Connection with PC etc.						
		ction	IOH	RS232	1 : 1 communication						
				RS485	1 : n communication up to 31 axes to a host.						
	Saf	ety functi	on		Used for functional safety.						
	Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch) (4) Digital monitor output (1ch)						
	Regeneration				A, B, G and H-frame: no built-in regenerative resistor (external resistor only) C to F-frame: Built-in regenerative resistor (external resistor is also enabled.)						
	Dyr	namic bra	ke		A to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only						
	Control mode				Switching among the following 7 mode is enabled, (1) Position control (2) Velocity control (3) Toque control (4) Position/Velocity control (5) Position/Torque control (6) Velocity/Torque control (7) Full-closed control						

*1 Air containing water vapor wil	become saturated with wate	r vapor as the temperature	falls, causing dew.
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	Control inpu	ut	(1) Deviation counter clear (2) Command pulse inhibitation(3) Electric gear (4) Damping control switching etc.							
	Control out	out	Positioning complete (In-position) etc.							
		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500kpps Exclusive interface for line driver: 4Mpps							
Positio	Pulse	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)							
Position control	input	Electronic gear (Division/Multiplication of command pulse)	1/1000 to 1000 times							
		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input							
	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.							
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.							
	Instantaneo	ous Speed Observer	Available							
	Damping C	•	Available							
	Control inpu		(1) Selection of internal velocity setup 1 (2) Selection of internal velocity setup 2							
			(3) Selection of internal velocity setup 3 (4) Speed zero clamp etc.							
	Control outp	out	Speed arrival etc.							
Velocity control	Analog	Velocity command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (6V/Rated rotational speed Default)							
₽	input	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.							
8		Torque feed forward input	Analog voltage can be used as torque feed forward input.							
1trc	Internal velo	ocity command	Switching the internal 8speed is enabled by command input.							
		own function	Individual setup of acceleration and deceleration is enabled, with 0 t 10s/1000r/min. Sigmoid acceleration/deceleration is also enabled.							
	Zero-speed	clamp	Speed zero clamp input is enabled.							
	-	ous Speed Observer	Available							
	Velocity Co	<u> </u>	Available							
	Control inpu		Speed zero clamp, Torque command sign input etc.							
ᅙ	Control out		Speed arrival etc.							
Torque control	Analog input	Torque command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (3V/rate torque Default)							
_	Speed limit	function	Speed limit value with parameter t is enabled.							
	Control inpu	ut	(1) Deviation counter clear (2) Command pulse inhibition(3) Command dividing gradual increase switching (4) Damping control switching etc.							
	Control outp	out	Full-closed positioning complete etc.							
Ţ		Max. command pulse	Exclusive interface for Photo-coupler: 500kpps							
Ē		frequency	Exclusive interface for line driver : 4Mpps							
solc	Pulse	Input pulse signal format	Differential input							
Full-closed control	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 to 1000 times							
<u>o</u>		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input							
	Analog	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.							
	input	Torque feed forward input	Analog voltage can be used as torque feed forward input.							
	Setup range feedback so	e of division/multiplication of cale	1/40 to 160 times							
	Auto tuning		The load inertia is identified in real time by the driving state of the motor operating according to the command given by the controlling device and set up support software "PANATERM". The gain is set automatically in accordance with the rigidity setting.							
Common	Division of	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).							
_ =	Protective	Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.							
mon	Le la		Excess position deviation, command pulse division error, EEPROM error							
non	function	Soft error	etc.							

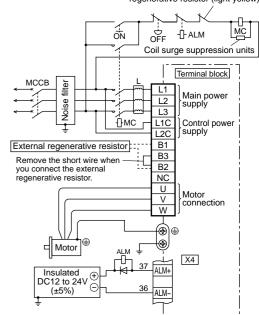
		1001/	Main	circuit	Single phase, 100 to 120V +10%							
		100V	Contro	ol circuit	Single phase, 100 to 120V +10% 50/60Hz							
			Main	A to D-frame	Single/3-phase, 200 to 240V +10% 50/60Hz							
	Input power	200V	circuit	E to F-frame	3-phase, 200 to 230V +10% 50/60Hz							
	ower	200 V	Control	A to D-frame	Single phase, 200 to 240V +10% 50/60Hz							
			circuit	E to F-frame	Single phase, 200 to 230V +10% 50/60Hz							
		400V	Main circuit	D to F-frame	3-phase, 380 to 480V +10% 50/60Hz							
			Control circuit	D to F-frame	DC 24V ± 15%							
Ва			tempe	erature	Ambient temperature: 0°C to 50°C (free from freezing) Storage temperature: -20°C to 65°C (Max.temperature guarantee: 80°C for 72 hours free from condensation*1)							
Basic S	Env	ironment	hun	nidity	Both operating and storage : 20 to 85%RH (free from condensation 1)							
Specifications		Environment		tude	Lower than 1000m							
catio			Vibr	ation	5.88m/s² or less, 10 to 60Hz (No continuous use at resonance frequency)							
ഗ	Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive							
	Enc	oder feed	dback		20-bit (1048576 resolution) incremental encoder, 5-wire serial							
	Ţ,	On material	-:	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.							
	Parallel I/O	Control	signai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.							
	8	Analog	sinnal	Input	none							
	nnector	7 trialog t	oigilai	Output	2 outputs (Analog monitor: 2 output)							
	ğ	Pulse si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)							
				Output	4 outputs (Line driver: 3 output, open collector: 1 output)							
	Communication function USB			USB	Connection with PC etc.							
	Front panel				(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)							
	Regeneration				A, B-frame: no built-in regenerative resistor (external resistor only) C to F-frame: Built-in regenerative resistor (external resistor is also enabled.)							
	Dyn	namic bra	ke		Built-in							
	Cor	ntrol mod	е		(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control							

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

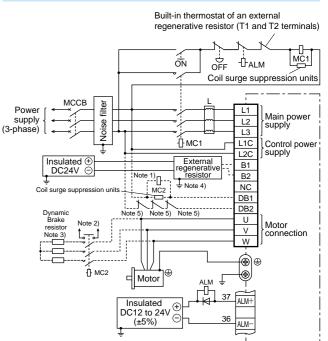
	Control input		(1) Deviation counter clear (2) Command pulse inhibitation (3) Electric gear (4) Damping control switching etc.	
	Control outp	out	Positioning complete (In-position) etc.	
		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500kpps Exclusive interface for line driver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

OFF - ALM Coil surge suppression units supply -⊕MC I vlagus Motor - I Motor X4

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



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



Note 1) Magnetic contactor MC2 must be the same as the contactor MC1 in the main circuit.

Note 2) Servo may be turned on in the external sequence if the dynamic brake resistor deposits: to protect the system, provide the auxiliary contact.

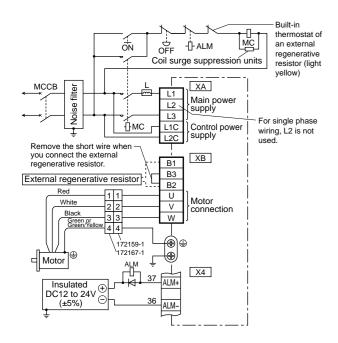
Note 3) Use 1.2 Ω , 400 W resistor (to be supplied by customer).

Note 4) To use the external dynamic brake resistor: Connect the R1 and R2 terminals to B1 and B2. Connect the T1 and T2 terminals as shown in the left diagram. Connect the 24 V and 0 V terminals to a 24 VDC power supply. Connect the E terminal to the ground.

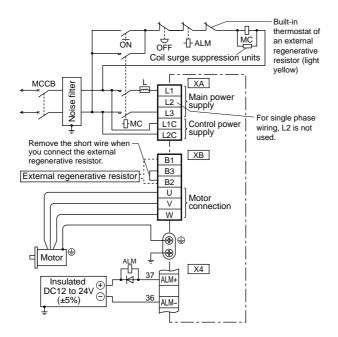
Note 5) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor.

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

· In Case of MSMD, MHMD



· In Case of MSME



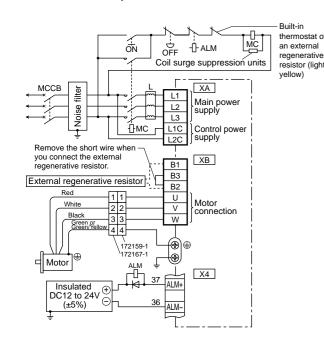
<CAUTION>

A-frame and B-frame: Open between B2 and B3. C-frame and D-frame: Short between B2 and B3.

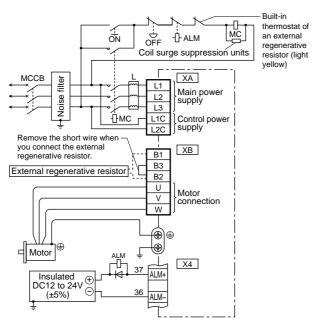
A-frame and B-frame: Open between B2 and B3. C-frame and D-frame: Short between B2 and B3.

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

• In Case of MSMD, MHMD



· In Case of MSME



A-frame and B-frame: Open between B2 and B3. C-frame and D-frame: Short between B2 and B3.

A-frame and B-frame: Open between B2 and B3. C-frame and D-frame: Short between B2 and B3 Normally, do not disconnect the shorting bar.

DC12 to 24V Insulated

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

Remove the short wire when

you connect the external

regenerative resistor.

External regenerative resistor

DC12 to 24V

MCCB

Power supply

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

regenerative resistor (light yellow)

-D-ALM

XA

supply

Coil surge suppression units

Main powe

Motor connection

X4

OFF

ÓΝ

∱мс1

Built-in thermostat of an external

-Ò-аlм

L2C

B1

DB3

DB4

Coil surge suppression units

supply

Control power

Motor

regenerative resistor (light yellow)

OFF

L2

В3

NC

ΰ

W

Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.ctiautomation.net - Email: info@ctiautomation.net

^{*} Refer to P.156, P.157, Specifications of Motor connector.

^{*} Reactor should be prepared by the user.

^{*} Refer to P.156, P.157, Specifications of Motor connector.

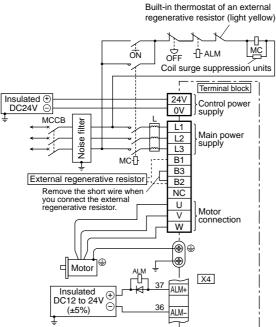
In Case of 3-Phase, Dand E-frame, 400V type Built-in thermostat of an externa regenerative resistor (light yellow)

OFF -∯-ALM Coil surge suppression units XD Insulated (+ supply XA Main power XC External regenerative resistor (Remove the short wire when you connect the external Motor Motor X4 Insulated DC12 to 24V

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

Wiring to Connector, XA, XB, XC, XD

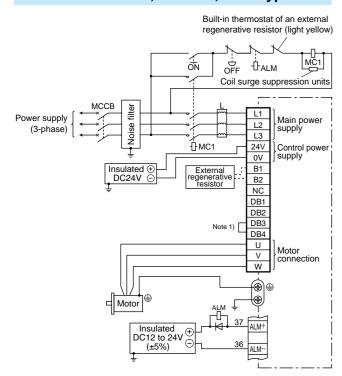
and Terminal block



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

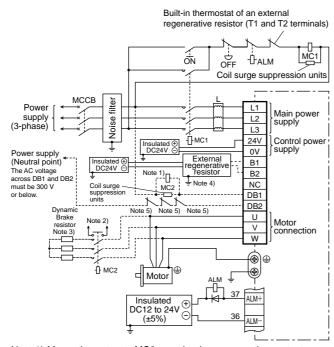
In Case of 3-Phase, G-frame, 400V type

 $(\pm 5\%)$



Note 1 Normally, do not disconnect the shorting bar.

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



Note 1) Magnetic contactor MC2 must be the same as the contactor MC1 in the main circuit.

Note 2) Servo may be turned on in the external sequence if the dynamic brake resistor deposits: to protect the system, provide the auxiliary contact

Note 3) Use 4.8 Ω , 400 W resistor (to be supplied by customer).

Note 4) To use the external dynamic brake resistor Connect the R1 and R2 terminals to B1 and B2. Connect the T1 and T2 terminals as shown in the left diagram. Connect the 24 V and 0 V terminals to a 24 VDC power supply Connect the E terminal to the ground.

Note 5) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor Connecting the host controller can configure a safety circuit that controls the safety functions.

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

Outline description of safe torque off (STO)

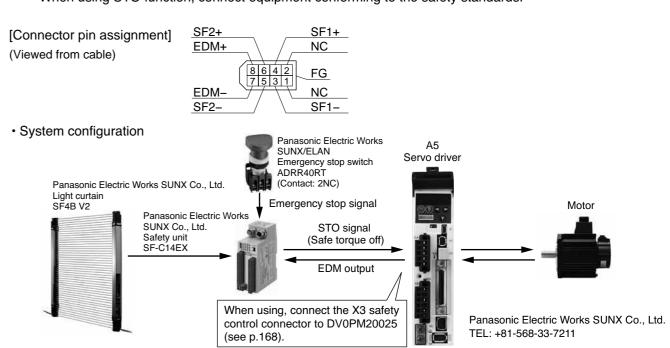
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

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

Safety precautions

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

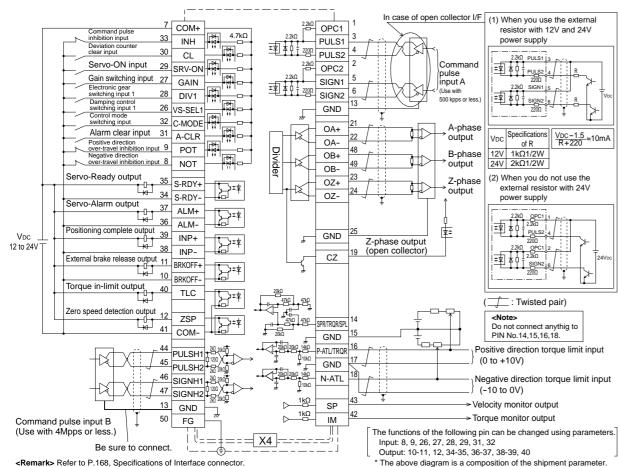


^{*} Refer to P.156, P.157, Specifications of Motor side connector.

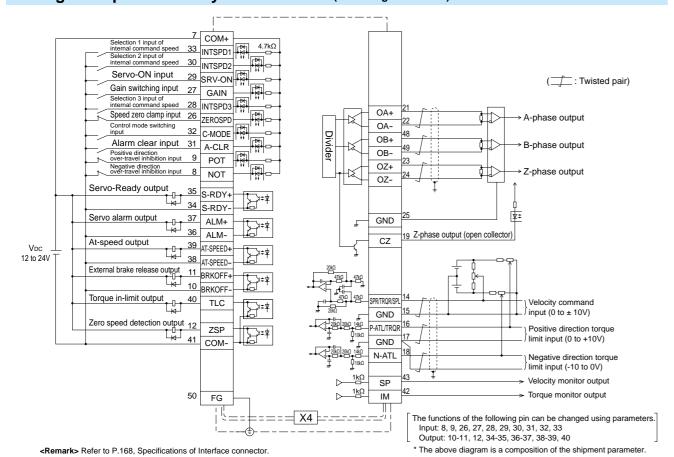
The above diagram is a composition of the shipment parameter

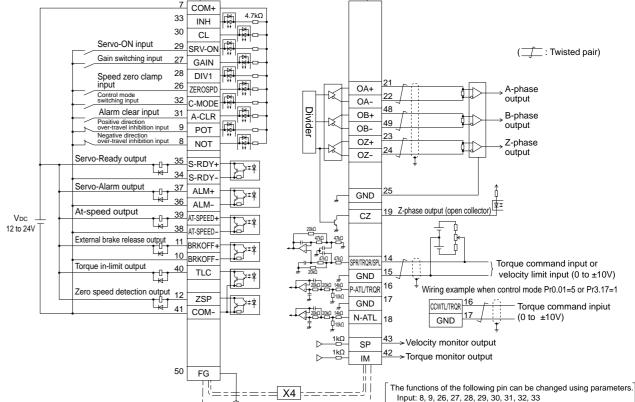
Output: 10-11, 12, 34-35, 36-37, 38-39, 40

Wiring Example of Position Control Mode



Wiring Example of Velocity Control Mode (Excluding A5E Series)

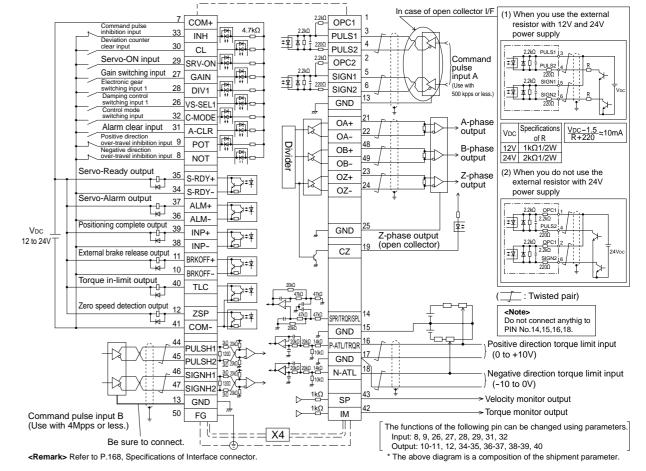




<Remark> Refer to P.168, Specifications of Interface connector.

Wiring Example of Full-closed Control Mode (Excluding A5E Series)

Wiring Example of Torque Control Mode (Excluding A5E Series)

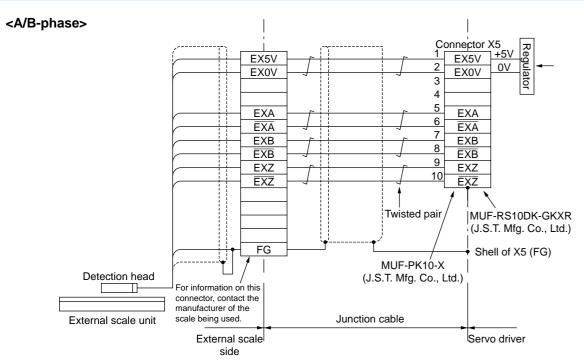


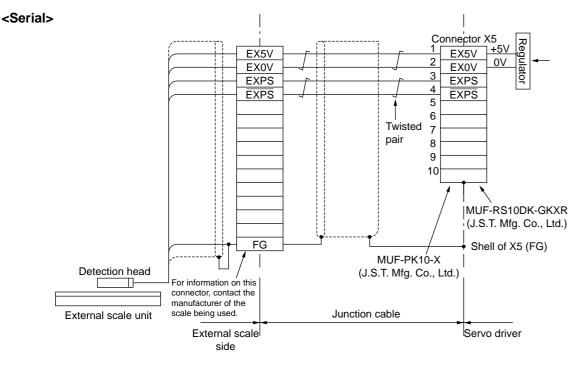
Applicable external scale

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

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

Wiring Diagram of X5

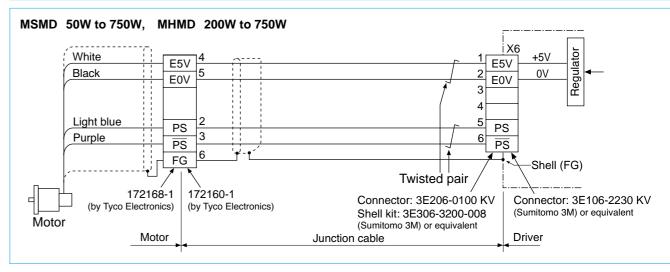


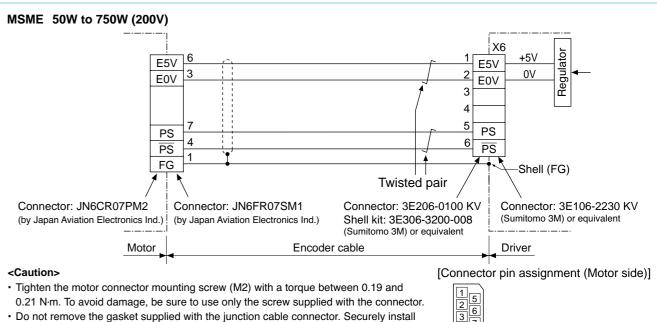


34

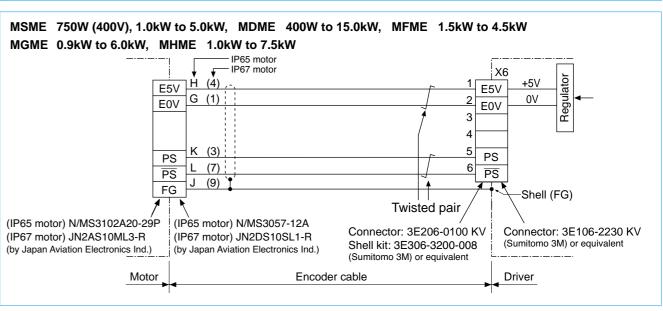
Control Circuit Diagram Wiring to the connector, X6

In case of 20-bit incremental encoder





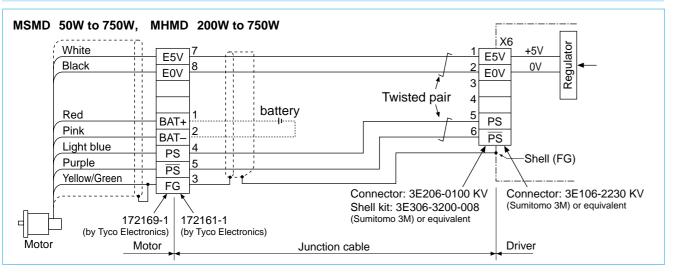
(Viewed from cable)

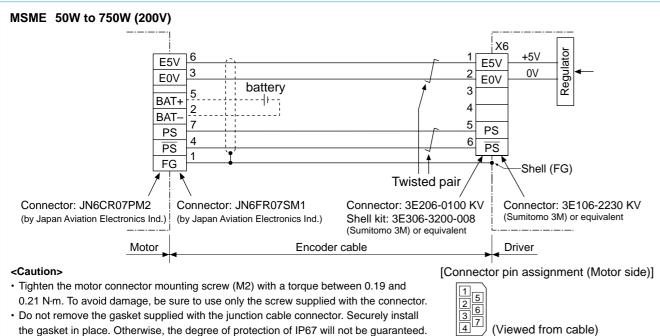


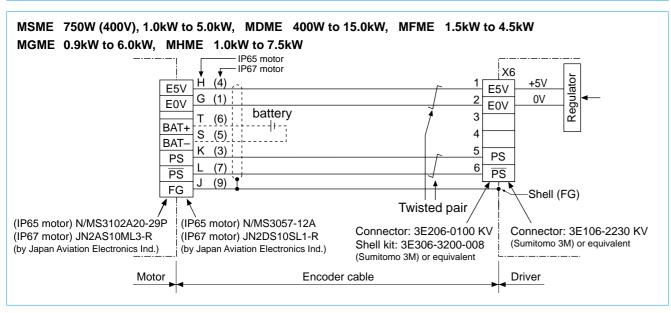
35

[Connector pin assignment] Refer to P.156, 157 "Specifications of Motor connector".

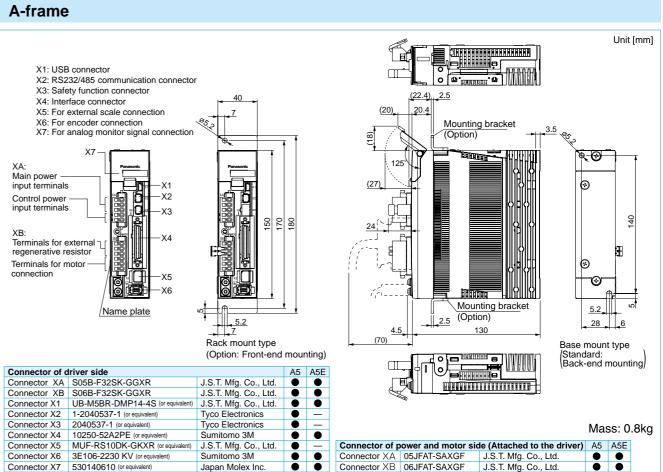
the gasket in place. Otherwise, the degree of protection of IP67 will not be guaranteed.



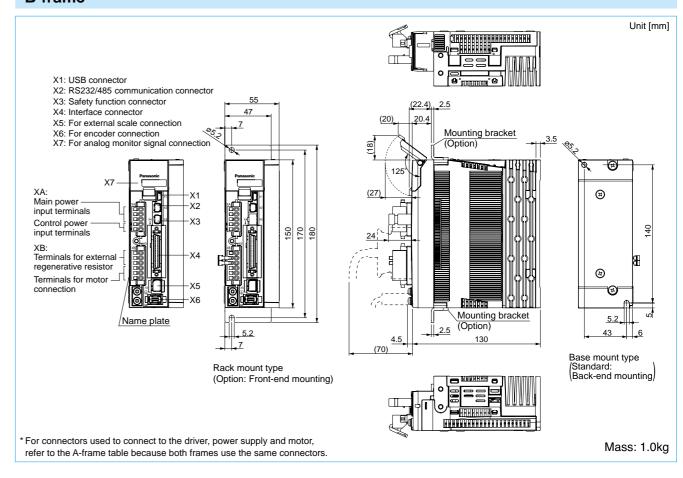




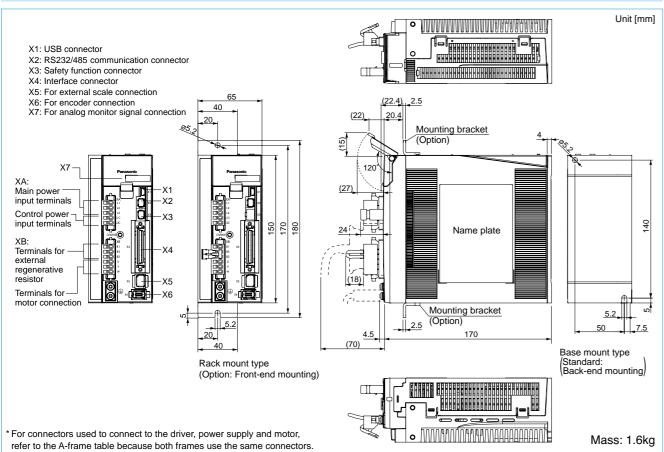
[Connector pin assignment] Refer to P.156, 157 "Specifications of Motor connector".



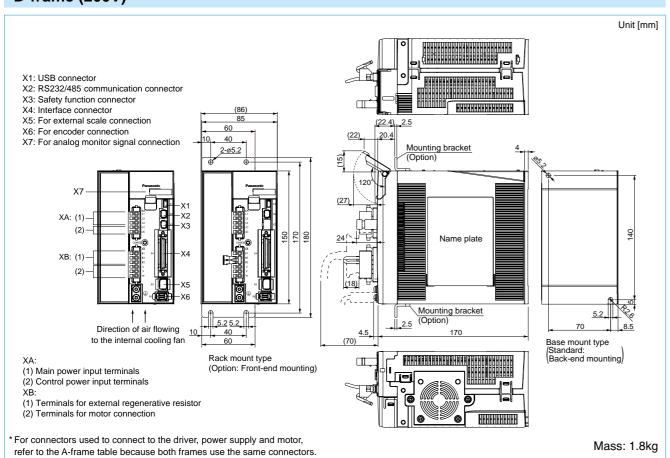
B-frame



C-frame

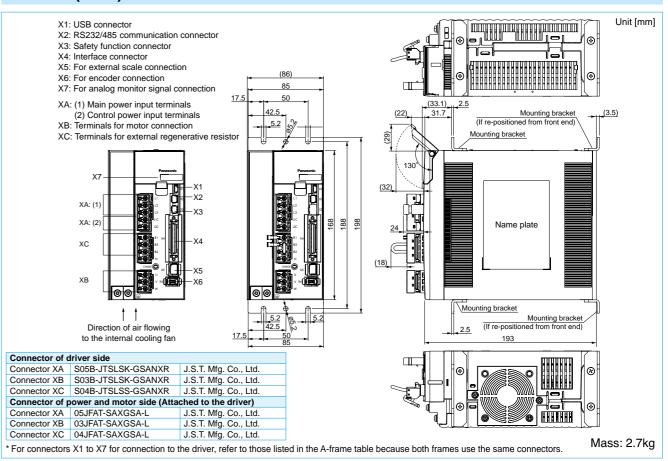


D-frame (200V)



D-frame (400V) XA: Main power input terminals XB: Terminals for motor connection XC: Terminals for external regenerative XD: Control power input terminals Rack mount type X1: USB connector X2: RS232/485 communication connector (Option: Front-end mounting) X3: Safety function connector X4: Interface connector X5: For external scale connection X6: For encoder connection 9-95.2 X7: For analog monitor signal connection X7 XD -X2 XA Name plate XC ΧВ Mounting bracket (Option) 5.2 Base mount type Connector of driver side /Standard: Connector XA S03B-JTSMSS-GSANYR J.S.T. Mfg. Co., Ltd. Back-end mounting Connector XB S03B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSMSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XD S02B-J25SK-GGR Connector XA 03JFAT-SAYGSA-M J.S.T. Mfg. Co., Ltd. Connector XB 03JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd. Connector XC 04JFAT-SAXGSA-M J.S.T. Mfg. Co., Ltd Connector XD 02MJFAT-SAGF J.S.T. Mfg. Co., Ltd. Mass: 1.9kg * For connectors X1 to X7 for connection to the driver, refer to those listed in the A-frame table because both frames use the same connectors.

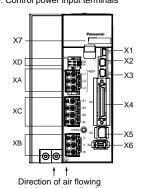
E-frame (200V)



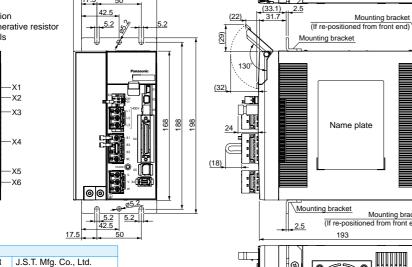
Mass: 13.5kg

E-frame (400V)

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



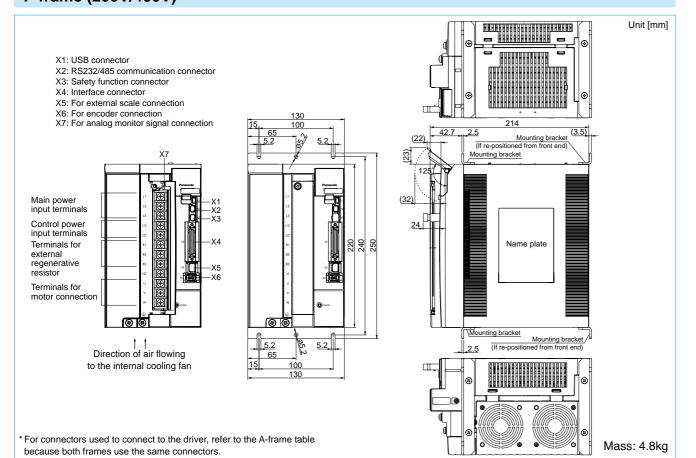
to the internal cooling fan



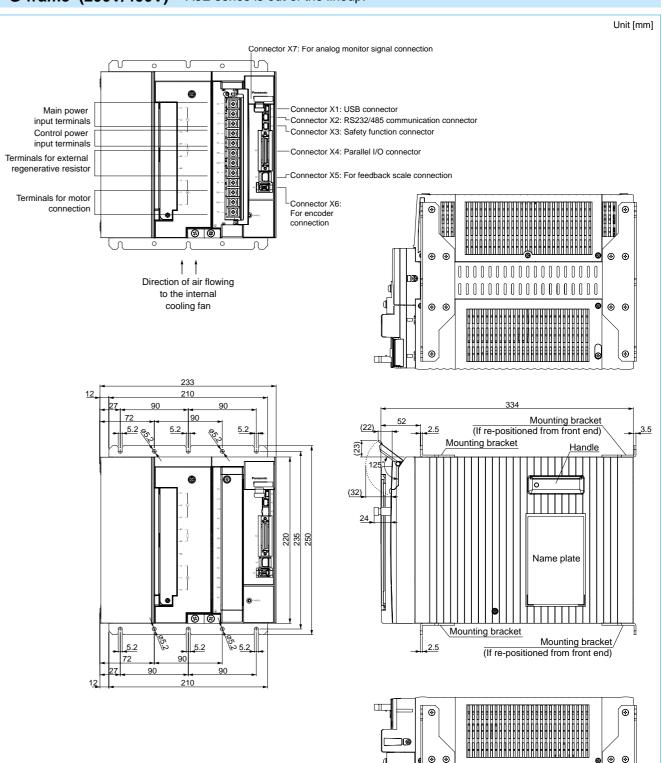
Connector of driver side Connector XA S03B-JTSLSS-GSANYR J.S.T. Mfg. Co., Ltd. Connector XB S03B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd. S02B-J25SK-GGR Connector of power and motor side (Attached to the driver) Connector XA 03JFAT-SAYGSA-L J.S.T. Mfg. Co., Ltd. Connector XB 03JFAT-SAXGSA-L J.S.T. Mfg. Co., Ltd. Connector XC 04JFAT-SAXGSA-L J.S.T. Mfg. Co., Ltd. Connector XD 02MJFAT-SAGF J.S.T. Mfg. Co., Ltd.

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

F-frame (200V/400V)



G-frame (200V/400V) * A5E series is out of the lineup.



Mass: 2.7kg

^{*} For connectors used to connect to the driver, refer to the A-frame table

X7: For analog monitor signal connection

X2: RS232/485 communication connector

X1: USB connector

Screws for earth (x2)

Control terminal for dynamic brake resister

Terminals for motor connection

- Control power input terminals

Terminals for external regenerative resistor

X3: Safety function connector

X6: For encoder connection

X5: For external scale connection

X4: Interface connector

H-frame (200V/400V)

[0]

Main power input terminals

Base mount type

(Back-end mounting)

Mass: 21.0kg

Mount

Unit [mm]

Motor Contents

50W to 750W P.44 to 52

200W to 750W P.54 to 58

50W to 750W P.60 to 68

1.0kW to 5.0kW P.69 to 74

1.0kW to 15.0kW P.75 to 83

400W to 15.0kW ... P.106 to 116

1.5kW to 4.5kWP.117 to 119

0.9kW to 6.0kW P.120 to 124

1.0kW to 7.5kW P.125 to 131

Environmental Conditions.... P.136

Built-in Holding Brake P.137

Motors with Gear Reducer

Type and Specifications...... P.139

Model No. designation...... P.140

Table of motor specifications... P.141

Dimensions of Motor...... P.145

Torque Characteristics of Motor

The combination of the driver

Notes on [Motor specification]

..... P.84 to 86

... P.87 to 91

.. P.92 to 98

... P.99 to 105

P.132

MSMD (100V/200V)

MHMD (100V/200V)

MSME (100V/200V)

MSME (200V)

MDME (200V)

MFME (200V) 1.5kW to 4.5kW.

MGME (200V)

MHME (200V)

MSME (400V)

750W to 5.0kW.

MDME (400V)

MFME (400V)

MGME (400V)

MHME (400V)

IP67 motor

dimensions..

Description

Motor Specification

Permissible Load at

Output Shaft.....

1.0kW to 7.5kW

0.9kW to 6.0kW

Features

- Line-up IP65 motor: 50W to 5.0kW IP67 motor: 50W to 15.0kW
- Max speed: 6000r/min (MSME 50W to 750W)
- · Low inertia (MSME) to High inertia (MHME).
- · Low cogging torque: Rated torque ratio 0.5% (typical value).
- 20-bit incremental encoder (1,048,576 pulse)
- 17-bit absolute encoder (131,072 pulse).
- Enclosure rating: IP65 and IP67
- Compact & Light weight

Motor Lineup

Small

capacity

capacity



Low inertia

Max. speed: 6000r/min Rated speed: 3000r/min Rated output: 50W to 750W(200V) Enclosure: IP67



Low inertia

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



High inertia

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



Low inertia

Max. speed: 5000r/min : 4500r/min (from 4.0kW) Rated speed: 3000r/min

Rated output: 750(400V), 1.0kW to 5.0kW Enclosure: IP65 (IP67)



Middle inertia

Max. speed: 3000r/min : 2000r/min (from 11.0kW) Rated speed: 2000r/min : 1500r/min

Rated output IP65: 1.0kW to 5.0kW IP67: 400W to 15.0kW Enclosure: IP65 (IP67)



(Flat type)* Middle inertia

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

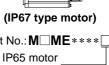
Middle capacity motor has the IP67 type.

* MFME motor is IP67 type only.



High inertia

: 1500r/min(7.5kW)



(IP65 type motor)

Compact

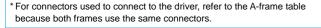
C: IP65 motor 1: IP67 motor

MGME (Low speed/ High torque type) Middle inertia Max. speed: 2000r/min

Rated speed: 1000r/min Rated output IP65: 0.9kW to 3.0kW IP67: 0.9kW to 6.0kW Enclosure: IP65 (IP67)

Max. speed: 3000r/min Rated speed: 2000r/min

Rated output IP65: 1.0kW to 5.0kW IP67: 1.0kW to 7.5kW Enclosure: IP65(IP67) Part No.: **M ME******



Direction of air flowing

to the internal

cooling fan

		AC1	00V	
Motor model *1			MSMD5AZG1□	MSMD5AZS1□
	Model	A5 series	MADH	T1105
Applicable driver *2	No.	A5E series	MADHT1105E	_
	Frame symbol		A-frame	
Power supply capacit	y	(kVA)	0.	.5
Rated output		(W)	5	0
Rated torque		(N·m)	0.	16
Momentary Max. peal	k torqu	e (N·m)	0.48	
Rated current		(A(rms))	1.1	
Max. current		(A(o-p))	4.7	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4280		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	Without brake		0.025	
of rotor (×10 ⁻⁴ kg·m ²) With		th brake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encoder specifications		Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

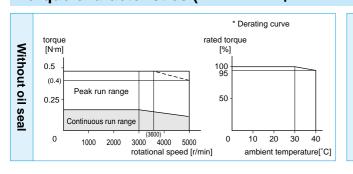
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

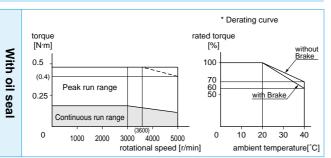
• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

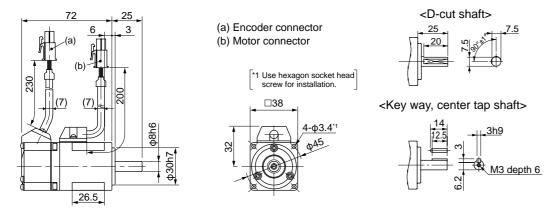
Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions

Mass (kg)/ 0.32 <Without Brake>



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

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

Specifications

			AC200V		
Motor model *1			MSMD5AZG1□	MSMD5AZS1	
	Model	A5 series	MADH	T1505	
Applicable driver *2	No.	A5E series	MADHT1505E	_	
	Fran	ne symbol	A-fr	ame	
Power supply capac	ity	(kVA)	0.	.5	
Rated output		(W)	5	0	
Rated torque		(N·m)	0.	16	
Momentary Max. pe	ak torqu	ie (N·m)	0.4	0.48	
Rated current		(A(rms))	1.1		
Max. current		(A(o-p))	4.7		
Regenerative brake	With	out option	No limit Note)2		
frequency (times/min) Note	¹ DV	/0P4281	No limit Note)2		
Rated rotational spe	ed	(r/min)	3000		
Max. rotational spee	d	(r/min)	5000		
Moment of inertia	With	out brake	0.025		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder spec	ification	1S Note)5	20-bit Incremental	17-bit Absolute	
Resolu	ıtion per	r single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

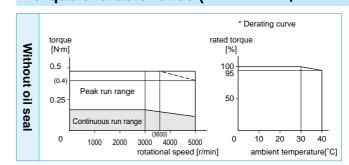
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

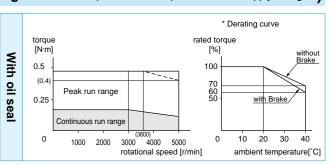
• Permissible load (For details, refer to P.137)

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
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

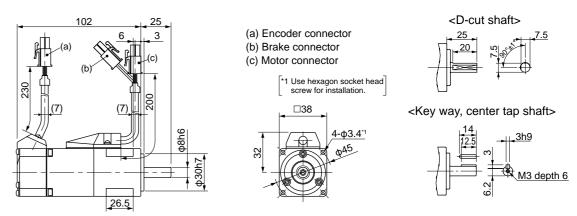
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions

<With Brake> Mass (kg)/ 0.53



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

			AC2	00V
Motor model *1			MSMD012G1□	MSMD012S1
Model A5 series			MADHT1505	
Applicable driver *2	No.	A5E series	MADHT1505E	-
	Fran	ne symbol	A-frame	
Power supply capacit	у	(kVA)	0.	.5
Rated output		(W)	10	00
Rated torque		(N·m)	0.0	32
Momentary Max. pea	k torqu	e (N·m)	0.95	
Rated current		(A(rms))	1.1	
Max. current		(A(o-p))	4.7	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4281		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	With	out brake	0.051	
of rotor (×10 ⁻⁴ kg·m ²)		th brake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072

 Brake specifications (For details, refer to P. 	137
/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.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications: \square
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Specifications Brake specifications (For details, refer to P.137) **AC100V**

		ACTUUV			
Motor model *1			MSMD011G1	MSMD011S1	
	Model	A5 series	MADH	HT1107	
Applicable driver *2	No.	A5E series	MADHT1107E	-	
	Frame symbol		A-frame		
Power supply capacit	у	(kVA)	0.4		
Rated output		(W)	10	00	
Rated torque		(N·m)	0.3	32	
Momentary Max. pea	k torqu	e (N·m)	0.9	95	
Rated current		(A(rms))	1.7		
Max. current		(A(o-p))	7.2		
Regenerative brake	With	out option	No limit Note)2		
frequency (times/min) Note)1	DV0P4280		No limit Note)2		
Rated rotational spee	d	(r/min)	3000		
Max. rotational speed		(r/min)	5000		
Moment of inertia	Without brake		0.051		
of rotor (x10 ⁻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		
Rotary encoder specifications Note		Note)5	20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072	

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

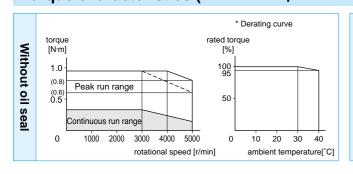
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

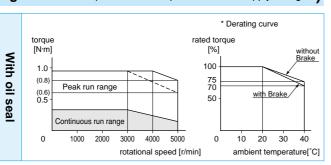
Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

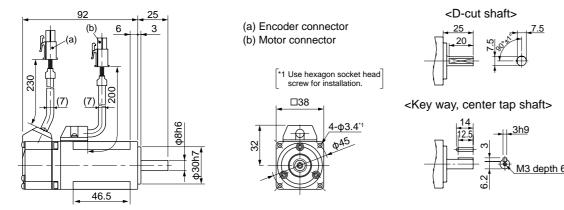
Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions

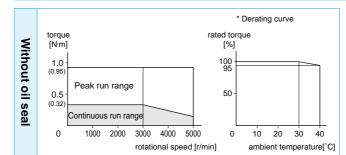
Mass (kg)/ 0.47 <Without Brake>

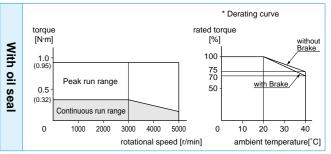


* For the dimensions with brake, refer to the right page.

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

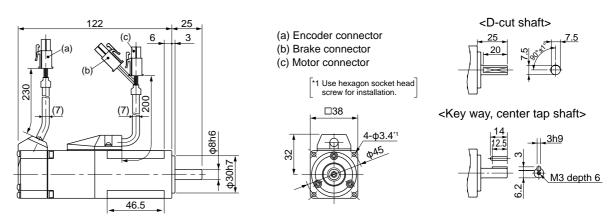
Torque characteristics (at AC200V of power voltage)





Dimensions

<With Brake> Mass (kg)/ 0.68



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

			AC1	00V
Motor model *1			MSMD021G1□	MSMD021S1
	Model	A5 series	MBDH	T2110
Applicable driver *2	No.	A5E series	MBDHT2110E	_
	Fran	ne symbol	B-frame	
Power supply capacit	У	(kVA)	0	.5
Rated output		(W)	20	00
Rated torque		(N·m)	0.0	64
Momentary Max. pea	k torqu	e (N·m)	1.9	91
Rated current (A(rms))			2.5	
Max. current		(A(o-p))	10.6	
Regenerative brake	With	out option	No limit Note)2	
frequency (times/min) Note)	DV	0P4283	No limit Note)2	
Rated rotational spec	ed	(r/min)	3000	
Max. rotational speed	I	(r/min)	5000	
Moment of inertia	With	out brake	0.14	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	
Rotary encoder spec	ficatior	Note)5	20-bit Incremental	17-bit Absolute
Resolu	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

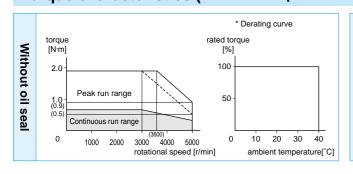
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

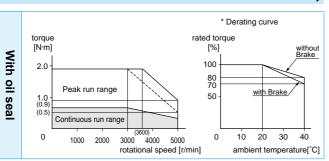
• Permissible load (For details, refer to P.137)

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

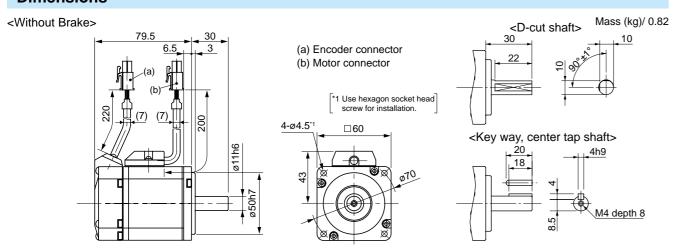
- For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions



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

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

Specifications

			AC2	200V	
Motor model *1			MSMD022G1□	MSMD022S1	
		Model	A5 series	MADH	T1507
Applicable drive	er *2	No.	A5E series	MADHT1507E	_
		Fram	ne symbol	A-frame	
Power supply c	apacit	y	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.0	64
Momentary Ma	x. peal	k torqu	e (N·m)	1.9	91
Rated current			(A(rms))	1.6	
Max. current			(A(o-p))	6.9	
Regenerative br	ake	Without option		No limit Note)2	
frequency (times/mi	in) Note)1	DV0P4283		No limit Note)2	
Rated rotationa	l spee	d	(r/min)	3000	
Max. rotational	speed		(r/min)	5000	
Moment of iner	tia	Without brake		0.14	
of rotor (×10 ⁻⁴ kg·m ²) With brake		th brake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder	speci	fication	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /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

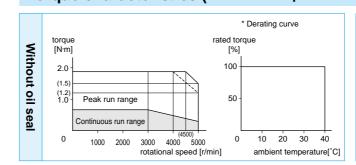
• Permissible load (For details, refer to P.137)

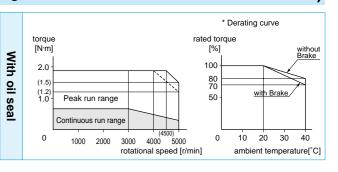
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

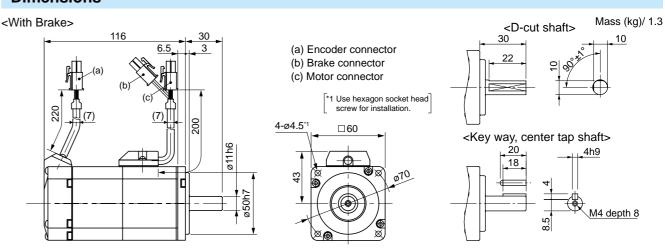
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

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





Dimensions



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

Mass (kg)/ 1.7

M5 depth 10

Specifications

			AC1	00V
Motor model *1		MSMD041G1□	MSMD041S1	
	Model	A5 series	MCDH	T3120
Applicable driver *2	No.	A5E series	MCDHT3120E	_
	Fram	ne symbol	C-frame	
Power supply capacit	y	(kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1	.3
Momentary Max. pea	k torqu	e (N·m)	3.8	
Rated current		(A(rms))	4.6	
Max. current	Max. current (A(o-p))		19.5	
Regenerative brake	With	out option	No limit Note)2	
frequency (times/min) Note)1	DV	0P4282	No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	With	out brake	0.26	
of rotor (×10 ⁻⁴ kg·m ²)	Wit	th brake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

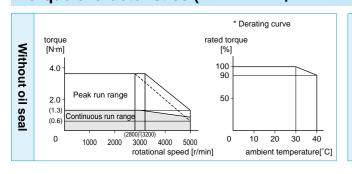
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

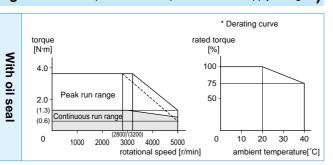
Permissible load (For details, refer to P.137)

	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

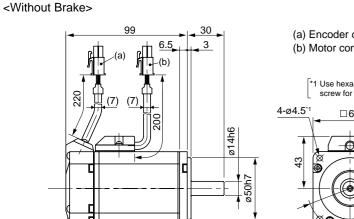
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

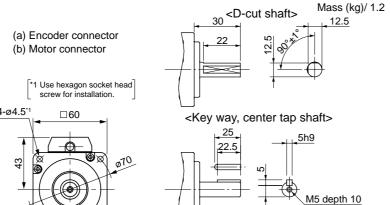
Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions





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

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

Specifications

			AC2	00V
Motor model *1			MSMD042G1□	MSMD042S1□
	Model	A5 series	MBDH	T2510
Applicable driver *2	No.	A5E series	MBDHT2510E	-
	Fran	ne symbol	B-frame	
Power supply capacit	у	(kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1.	.3
Momentary Max. pea	k torqu	ie (N·m)	3.	.8
Rated current		(A(rms))	2.6	
Max. current		(A(o-p))	11.0	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4283		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed	l	(r/min)	5000	
Moment of inertia	With	out brake	0.26	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	0.28	
Recommended moment of inertia ratio of the load and the rotor $$\tt Note)3$$		30 times	s or less	
Rotary encoder speci	fication	Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /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

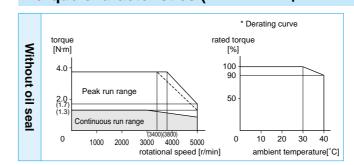
• Permissible load (For details, refer to P.137)

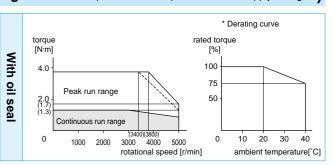
During assembly During operation	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

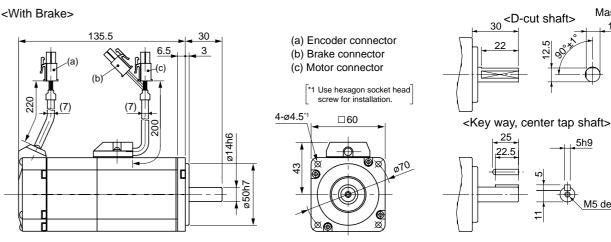
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

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





Dimensions



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

			AC200V		
Motor model *1		MSMD082G1□	MSMD082S1□		
	Model No.	A5 series	MCDHT3520		
Applicable driver *2		A5E series	MCDHT3520E	-	
	Frame symbol		C-fr	C-frame	
Power supply capacity	y	(kVA)	1.	.3	
Rated output		(W)	75	50	
Rated torque		(N·m)	2	.4	
Momentary Max. peal	k torqu	ie (N·m)	7.1		
Rated current		(A(rms))	4.0		
Max. current (A(o-p))			17.0		
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0P4283		No limit Note)2		
Rated rotational spee	d	(r/min)	3000		
Max. rotational speed		(r/min)	4500		
Moment of inertia	Without brake		0.87		
of rotor (×10 ⁻⁴ kg·m ²) With		th brake	0.97		
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

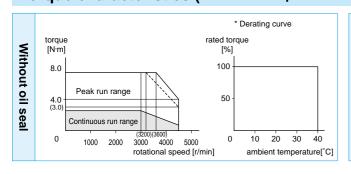
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

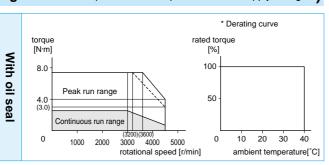
• Permissible load (For details, refer to P.137)

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

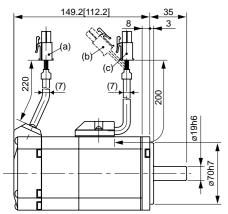
- For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





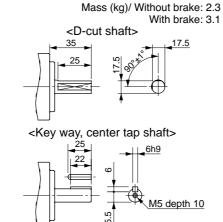
Dimensions



(a) Encoder connector (b) Brake connector

(c) Motor connector

*1 Use hexagon socket head screw for installation. □80



* Figures in [] represent the dimensions without brake.

MEMO

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

Specifications

			AC100V	
Motor model *1		MHMD021G1□	MHMD021S1	
	Model No.	A5 series	MBDHT2110	
Applicable driver *2		A5E series	MBDHT2110E	_
	Frame symbol		B-frame	
Power supply capacit	y	(kVA)	0.	.5
Rated output		(W)	20	00
Rated torque		(N·m)	0.0	64
Momentary Max. peal	k torqu	e (N·m)	1.91	
Rated current		(A(rms))	2.5	
Max. current		(A(o-p))	10.6	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4283		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	Without brake		0.42	
of rotor ($\times 10^{-4}$ kg·m ²)	With brake		0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

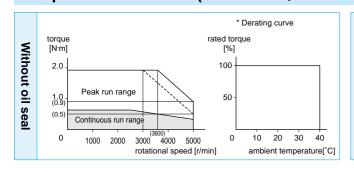
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

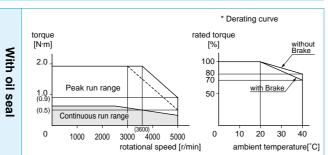
• Permissible load (For details, refer to P.137)

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.136.
- · Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

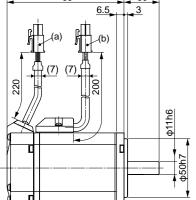


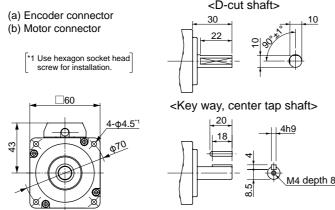


Dimensions

<Without Brake>

Mass (kg)/ 0.96 <D-cut shaft>





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

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

Specifications

		AC200V		
Motor model *1		MHMD022G1□	MHMD022S1	
	Model	A5 series	MADHT1507	
Applicable driver *2	No.	A5E series	MADHT1507E	_
	Fram	ne symbol	A-frame	
Power supply capacit	y	(kVA)	0.	5
Rated output		(W)	20	00
Rated torque		(N·m)	0.0	64
Momentary Max. pea	k torqu	ie (N·m)	1.91	
Rated current		(A(rms))	1.6	
Max. current		(A(o-p))	6.9	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4283		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	Without brake		0.42	
of rotor (x10 ⁻⁴ kg·m ²)	With brake		0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

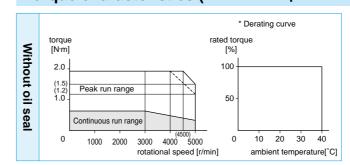
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

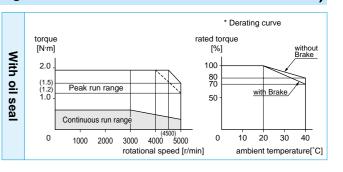
• Permissible load (For details, refer to P.137)

	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.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

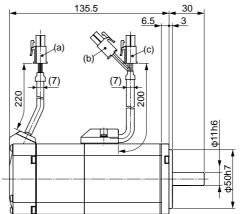
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

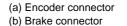




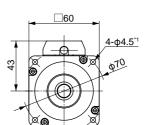
Dimensions

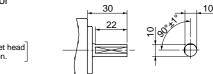
<With Brake>





(c) Motor connector 1 Use hexagon socket head





<Key way, center tap shaft>

<D-cut shaft>

Mass (kg)/ 1.4

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

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

Specifications

		AC1	00V	
Motor model *1		MHMD041G1	MHMD041S1	
	Model	A5 series	MCDHT3120	
Applicable driver *2	No.	A5E series	MCDHT3120E	_
	Frame symbol		C-frame	
Power supply capacit	y	(kVA)	0.	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1.	.3
Momentary Max. peal	k torqu	e (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 rotational speed (r/min)		3000		
Max. rotational speed		(r/min)	5000	
Moment of inertia	With	out brake	0.67	
of rotor (×10 ⁻⁴ kg·m ²) With brake		th brake	0.70	
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	
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

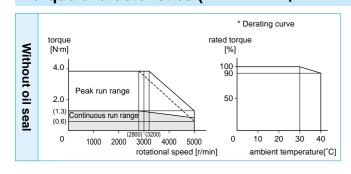
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

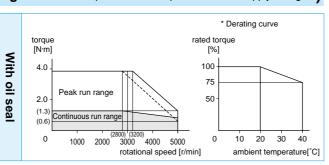
• Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

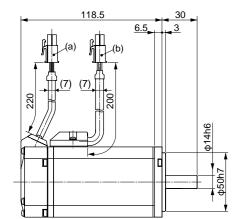


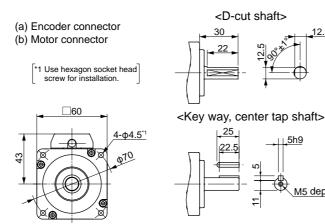


Dimensions

<Without Brake>

Mass (kg)/ 1.4





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

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

Specifications

			AC200V	
Motor model *1			MHMD042G1	MHMD042S1
	Model	A5 series	MBDHT2510	
Applicable driver *	No.	A5E series	MBDHT2510E	_
	Fran	ne symbol	B-frame	
Power supply capa	city	(kVA)	0.9	
Rated output		(W)	40	00
Rated torque		(N·m)	1.	.3
Momentary Max. p	eak torqu	ie (N·m)	3.8	
Rated current (A(rms))			2.6	
Max. current (A(o-p))			11.0	
Regenerative brake		out option	No limit Note)2	
frequency (times/min) No	te)1 DV	/0P4283	No limit Note)2	
Rated rotational speed (r/min)		3000		
Max. rotational spe	ed	(r/min)	5000	
Moment of inertia		out brake	0.67	
of rotor (×10 ⁻⁴ kg·m ²	otor (x10 ⁻⁴ kg·m ²) With brake		0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	
Rotary encoder spe	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Reso	lution per	r single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

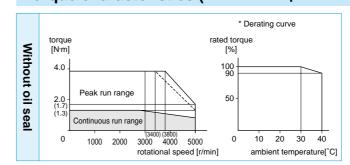
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

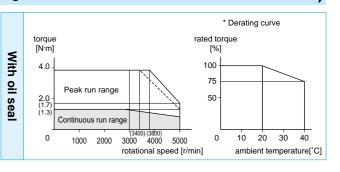
• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

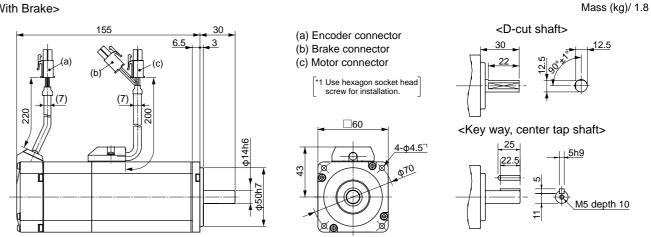
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions

<With Brake>



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

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

Specifications

			AC2	00V
Motor model *1		MHMD082G1□	MHMD082S1	
	Model	A5 series	MCDH	T3520
Applicable driver *2	No.	A5E series	MCDHT3520E	_
	Frame symbol		C-frame	
Power supply capacit	y	(kVA)	1.	3
Rated output		(W)	75	50
Rated torque		(N·m)	2.	4
Momentary Max. peal	k torqu	e (N·m)	7.1	
Rated current (A(rms))		4.0		
Max. current	(A(o-p))		17.0	
Regenerative brake	Ke Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4283		No limit Note)2	
Rated rotational spee	Rated rotational speed (r/min)		3000	
Max. rotational speed		(r/min)	4500	
Moment of inertia	Without brake		1.51	
of rotor (×10 ⁻⁴ kg·m ²) With brake		1.61		
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

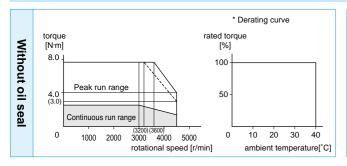
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

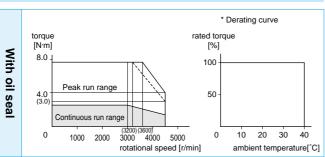
• Permissible load (For details, refer to P.137)

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

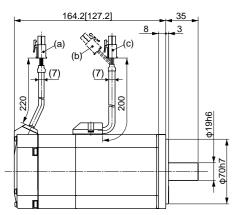
- For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector

*1 Use hexagon socket head screw for installation.

<D-cut shaft> <Key way, center tap shaft>

Mass (kg)/ Without brake: 2.5

With brake: 3.5

* Figures in [] represent the dimensions without brake.

MEMO

			AC1	00V	
Motor model *1		MSME5AZG1□	MSME5AZS1		
	Model	A5 series	MADH	MADHT1105	
Applicable driver *2	No.	A5E series	MADHT1105E	-	
	Fran	ne symbol	A-frame		
Power supply capacit	У	(kVA)	0	.4	
Rated output		(W)	5	0	
Rated torque		(N·m)	0.	16	
Momentary Max. pea	k torqu	ie (N·m)	0.48		
Rated current (A(rms))		1.1			
Max. current (A(o-p))		4.7			
Regenerative brake		out option	No limit Note)2		
frequency (times/min) Note)1	DV0P4280		No limit Note)2		
Rated rotational speed (r/min)		3000			
Max. rotational speed	speed (r/min)		6000		
Moment of inertia	With	out brake	0.025		
of rotor ($\times 10^{-4}$ kg·m ²)	Wi	th brake	0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolut	ion per	single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

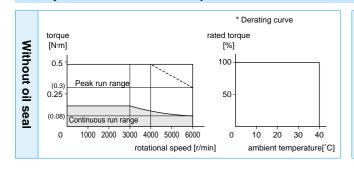
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

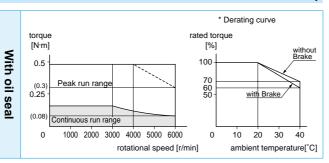
Permissible load (For details, refer to P.137)

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.136.
- · Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

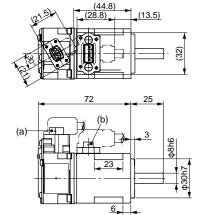


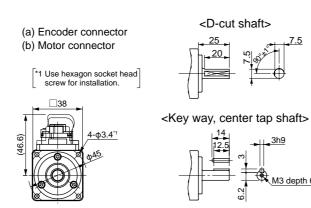


Dimensions

<Without Brake, Cable direction to output shaft>

Mass (kg)/ 0.31





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

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

Specifications

		AC2	00V	
Motor model *1			MSME5AZG1□	MSME5AZS1□
	Model	A5 series	MADH	T1505
Applicable driver *2	No.	A5E series	MADHT1505E	-
	Frame symbol		A-frame	
Power supply capacity	y	(kVA)	0.	.5
Rated output		(W)	5	0
Rated torque		(N·m)	0.	16
Momentary Max. peal	k torqu	ie (N·m)	0.48	
Rated current		(A(rms))	1.1	
Max. current		(A(o-p))	4.7	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4280		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	6000	
Moment of inertia	Without brake		0.025	
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

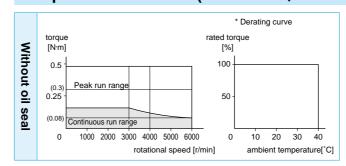
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

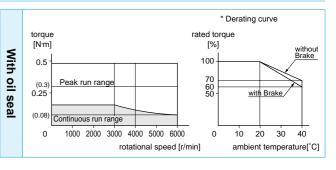
• Permissible load (For details, refer to P.137)

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.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage)

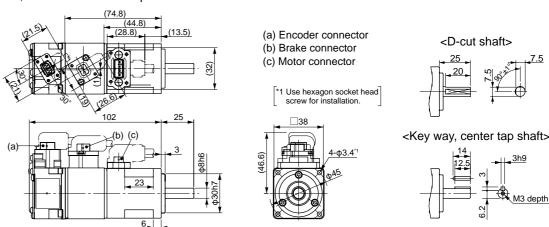




Dimensions

<With Brake, Cable direction to output shaft>

Mass (kg)/ 0.51



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

			AC1	00V
Motor model *1		MSME011G1	MSME011S1	
	Model	A5 series	MADHT1107	
Applicable driver *2	No.	A5E series	MADHT1107E	_
	Fran	ne symbol	A-frame	
Power supply capacit	у	(kVA)	0	.4
Rated output		(W)	10	00
Rated torque		(N·m)	0.3	32
Momentary Max. pea	k torqu	e (N·m)	0.9	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	DV0P4280		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed	l	(r/min)	6000	
Moment of inertia	Without brake		0.051	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

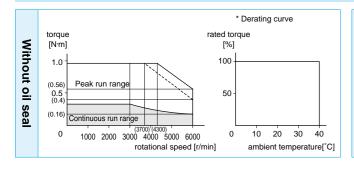
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

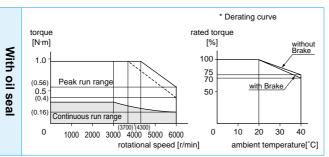
Permissible load (For details, refer to P.137)

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.136.
- · Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

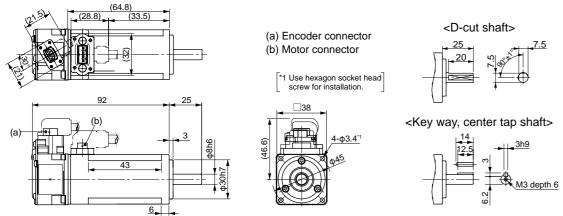




Dimensions

<Without Brake, Cable direction to output shaft>

Mass (kg)/ 0.46



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

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

Specifications

		AC2	00V		
Motor model *1			MSME012G1□	MSME012S1	
	Model	A5 series	MADHT1505		
Applicable driver *2	No.	A5E series	MADHT1505E	-	
	Fran	ne symbol	A-frame		
Power supply capac	ity	(kVA)	0.	.5	
Rated output		(W)	10	00	
Rated torque		(N·m)	0.:	32	
Momentary Max. pe	ak torqu	ie (N·m)	0.9	0.95	
Rated current		(A(rms))	1.1		
Max. current		(A(o-p))	4.7		
Regenerative brake	With	out option	No limit Note)2		
frequency (times/min) Note)1 DV	'0P4280	No limit Note)2		
Rated rotational spe	ed	(r/min)	30	3000	
Max. rotational spee	d	(r/min)	6000		
Moment of inertia	With	out brake	0.051		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder spe	cification	Note)5	20-bit Incremental	17-bit Absolute	
Resol	ution per	single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /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

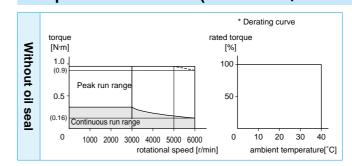
• Permissible load (For details, refer to P.137)

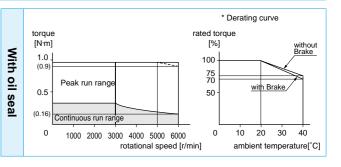
During assembly During operation	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
	Radial load P-direction (N)	68.6
	Thrust load A, B-direction (N)	58.8

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

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

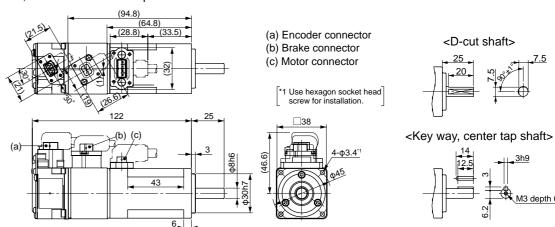




Dimensions

<With Brake, Cable direction to output shaft>

Mass (kg)/ 0.66



* 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.

				00V	
Motor model *1			MSME021G1□	MSME021S1	
	Model	A5 series	MBDHT2110		
Applicable driver *2	No.	A5E series	MBDHT2110E	_	
	Frame symbol		B-frame		
Power supply capacit	у	(kVA)	0.	.5	
Rated output		(W)	20	00	
Rated torque		(N·m)	0.0	64	
Momentary Max. pea	k torqu	ie (N·m)	1.91		
Rated current		(A(rms))	2.5		
Max. current		(A(o-p))	10.6		
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0P4283		No limit Note)2		
Rated rotational spee	d	(r/min)	30	3000	
Max. rotational speed	l	(r/min)	6000		
Moment of inertia	Without brake		0.14		
of rotor (×10 ⁻⁴ kg·m ²)	With brake		0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

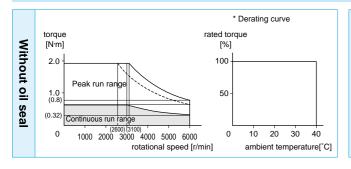
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

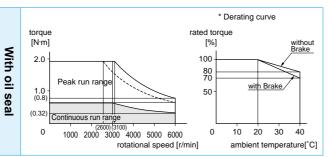
Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

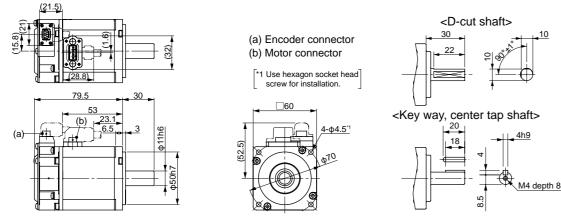




Dimensions

<Without Brake, Cable direction to output shaft>

Mass (kg)/ 0.78



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

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

Specifications

			AC2	00V	
Motor model *1			MSME022G1□	MSME022S1□	
	Model	A5 series	MADH	T1507	
Applicable driver *2	No.	A5E series	MADHT1507E	-	
	Fran	ne symbol	A-frame		
Power supply capacit	у	(kVA)	0.	.5	
Rated output		(W)	20	00	
Rated torque		(N·m)	0.0	64	
Momentary Max. pea	k torqu	ie (N·m)	1.9	91	
Rated current		(A(rms))	1.5		
Max. current		(A(o-p))	6.5		
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0P4283		No limit Note)2		
Rated rotational spee	d	(r/min)	30	3000	
Max. rotational speed		(r/min)	6000		
Moment of inertia	With	out brake	0.14		
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

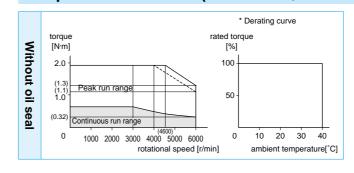
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

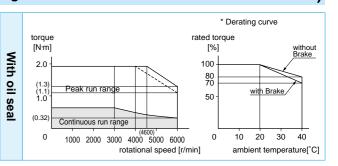
• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

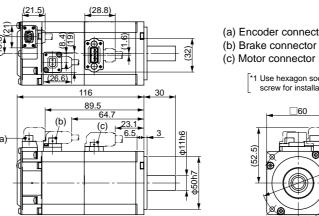




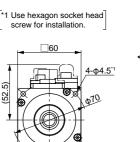
Dimensions

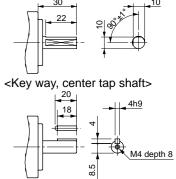
<With Brake, Cable direction to output shaft>

Mass (kg)/ 1.2



- (a) Encoder connector





<D-cut shaft>

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

			AC1	00V
Motor model *1			MSME041G1□	MSME041S1
	Model	A5 series	MCDHT3120	
Applicable driver *2	No.	A5E series	MCDHT3120E	_
	Frame symbol		C-frame	
Power supply capacit	у	(kVA)	0	.9
Rated output		(W)	4(00
Rated torque		(N·m)	1.	.3
Momentary Max. pea	k torqu	e (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 rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	6000	
Moment of inertia	Without brake		0.26	
of rotor (×10 ⁻⁴ kg·m ²)	Wi	h brake 0.28		28
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

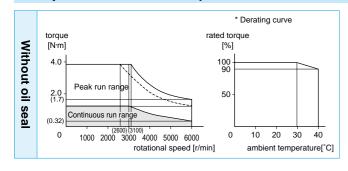
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

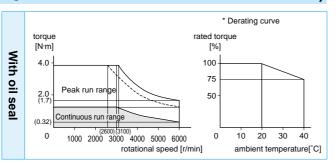
Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC100V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

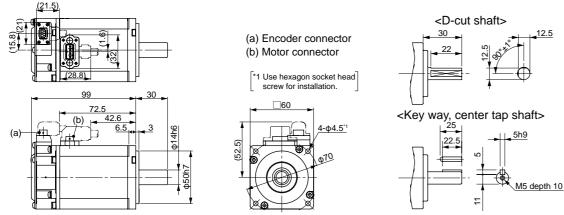




Dimensions

<Without Brake, Cable direction to output shaft>

Mass (kg)/ 1.2



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

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

Specifications

		AC2	V00V		
Motor model *1			MSME042G1□	MSME042S1	
	Model	A5 series	MBDHT2510		
Applicable driver *2	No.	A5E series	MBDHT2510E	-	
	Fran	ne symbol	B-frame		
Power supply capacit	y	(kVA)	0.9		
Rated output		(W)	40	00	
Rated torque		(N·m)	1.	3	
Momentary Max. peal	k torqu	e (N·m)	3.8		
Rated current	Rated current (A(rms))			2.4	
Max. current (A(o-p))			10.2		
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0P4283		No limit Note)2		
Rated rotational spee	d	(r/min)	3000		
Max. rotational speed		(r/min)	6000		
Moment of inertia	Without brake		0.26		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn			131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

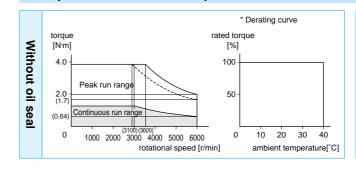
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

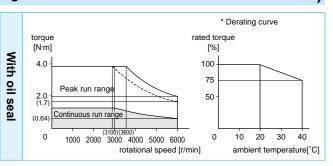
• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.37.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

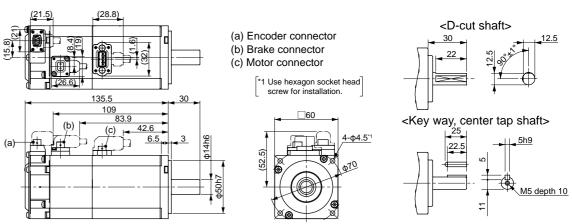




Dimensions

<With Brake, Cable direction to output shaft>

Mass (kg)/ 1.6



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

			AC2	200V	
Motor model *1		0MSME82G1□	MSME082S1		
	Model	A5 series	MCDHT3520		
Applicable driver *2	No.	A5E series	MCDHT3520E	_	
	Frame symbol		C-frame		
Power supply capacit	y	(kVA)	1.	.3	
Rated output		(W)	75	50	
Rated torque		(N·m)	2	.4	
Momentary Max. peal	k torqu	e (N·m)	7.	7.1	
Rated current		(A(rms))	4.1		
Max. current (A(o-p))		17.4			
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0P4283		No limit Note)2		
Rated rotational spee	d	(r/min)	3000		
Max. rotational speed		(r/min)	6000		
Moment of inertia	Without brake		0.87		
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	0.97		
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single		single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

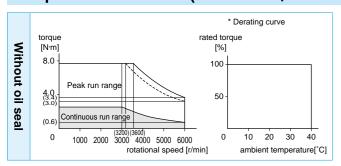
2.45 or more
70 or less
20 or less
0.42
1 or more
24±1.2

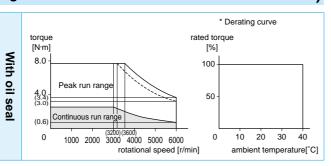
Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)





Dimensions

Mass (kg)/ Without brake: 2.3 <With Brake, Cable direction to output shaft> With brake: 3.1 <D-cut shaft> (a) Encoder connector (b) Brake connector (c) Motor connector *1 Use hexagon socket head 121.7[85.7 94. <Key way, center tap shaft>

* Figures in [] represent the dimensions without brake.

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

Specifications

		AC200V		
Motor model *1	IP65		MSME102GC□	MSME102SC□
wotor model	IP67		MSME102G1□	MSME102S1
	Model No.	A5 series	MDDHT5540	
Applicable driver *2		A5E series	MDDHT5540E	_
	Frame symbol		D-frame	
Power supply capacity (kVA)			1.8	
Rated output (kW)			1.0	
Rated torque (N·m)			3.18	
Momentary Max. peak torque (N·m)			9.55	
Rated current (A(rms))			6.6	
Max. current (A(o-p))		28		
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4284		No limit Note)2	
Rated rotational speed (r/min)		3000		
Max. rotational speed	l (r/min)		5000	
Moment of inertia	Without brake		2.03	
of rotor (×10 ⁻⁴ kg·m ²)	With brake		2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	on per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

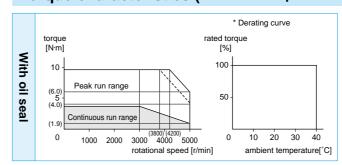
7.8 or more
50 or less
15 or less
0.81±10%
2 or more
24±2.4

• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

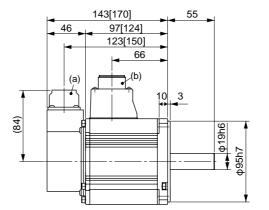
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

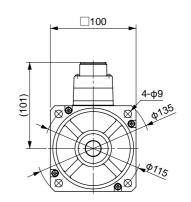


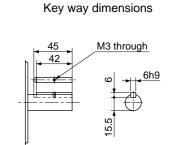
Dimensions

(For IP67 motor, refer to P.132.)

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







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

			AC200V	
Motor model *1	IP65		MSME152GC□	MSME152SC□
Motor model *1		IP67	MSME152G1□	MSME152S1
	Model	A5 series	MDDH	T5540
Applicable driver *2	No.	A5E series	MDDHT5540E	-
	Frame symbol		D-fra	ame
Power supply capacit	y	(kVA)	2.	.3
Rated output (kW)			1.	.5
Rated torque		(N·m)	4.77	
Momentary Max. peal	k torqu	e (N·m)	14.3	
Rated current (A(rms))		8.2		
Max. current (A(o-p))		35		
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4284		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	With	out brake	2.84	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less		
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

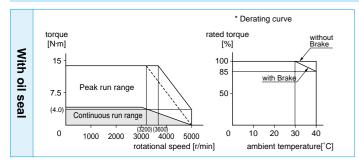
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

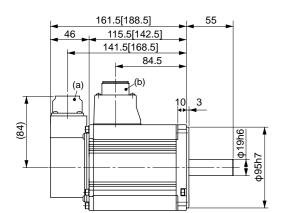
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

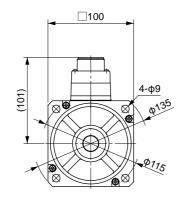


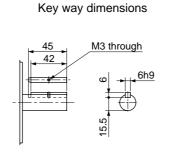
Dimensions

(For IP67 motor, refer to P.132.)

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







- (a) Encoder connector
- (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.

Specifications

			AC2	00V	
IP65		IP65	MSME202GC□	MSME202SC	
Motor model *1		IP67	MSME202G1□	MSME202S1	
	Model	A5 series	MEDH	T7364	
Applicable driver *2	No.	A5E series	MEDHT7364E	_	
	Fran	ne symbol	E-fra	E-frame	
Power supply capac	city	(kVA)	3.	3	
Rated output		(kW)	2.	0	
Rated torque		(N·m)	6.3	37	
Momentary Max. pe	ak torqu	ie (N·m)	19.1		
Rated current		(A(rms))	11.3		
Max. current (A(o-p))		48			
Regenerative brake	With	out option	No limit Note)2		
frequency (times/min) Note	e)1 DV	OP4285	No limit Note)2		
Rated rotational spe	eed	(r/min)	3000		
Max. rotational spee	ed	(r/min)	5000		
Moment of inertia	With	out brake	3.68		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	4.01		
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		1,048,576	131,072		

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

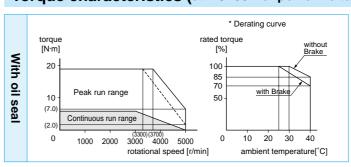
7.8 or more
50 or less
15 or less
0.81±10%
2 or more
24±2.4

• Permissible load (For details, refer to P.137)

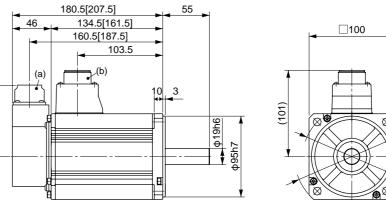
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

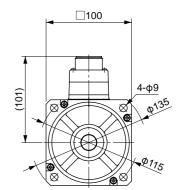
- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



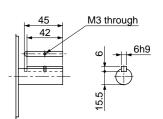
Dimensions (For IP67 motor, refer to P.132.)





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

Key way dimensions



(a) Encoder connector

(84)

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

			AC2	00V
		IP65	MSME302GC□	MSME302SC
Motor model *1		IP67	MSME302G1□	MSME302S1
	Model	A5 series	MFDH	TA390
Applicable driver *2	No.	A5E series	MFDHTA390E	-
	Frame symbol		F-fra	ame
Power supply capacit	y	(kVA)	4.	.5
Rated output		(kW)	3.	.0
Rated torque		(N·m)	9.9	55
Momentary Max. pea	k torqu	e (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 limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	With	out brake	6.50	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	7.85	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

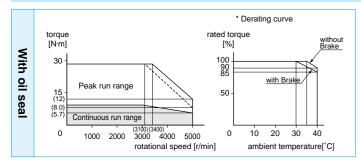
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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

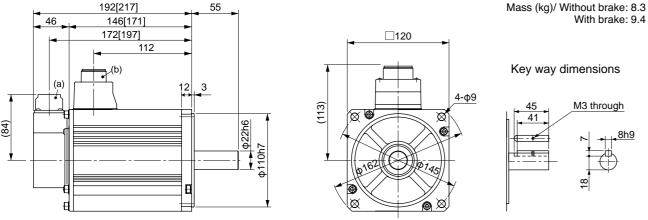
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.132.)



- (a) Encoder connector
- (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.

Specifications

			AC200V		
Motor model *1	IP65		MSME402GC□	MSME402SC	
Wotor model		IP67	MSME402G1□	MSME402S1	
	Model	A5 series	MFDH.	ГВЗА2	
Applicable driver *2	No.	A5E series	MFDHTB3A2E	_	
	Frame symbol		F-fra	ame	
Power supply capacit	у	(kVA)	6.	0	
Rated output		(kW)	4.	0	
Rated torque		(N·m)	12.7		
Momentary Max. pea	k torqu	e (N·m)	38.2		
Rated current	Rated current (A(rms))			19.6	
Max. current		(A(o-p))	83		
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotational spee	d	(r/min)	3000		
Max. rotational speed	l	(r/min)	4500		
Moment of inertia	With	out brake	12.9		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	14	.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less			
Rotary encoder speci	fication	Note)5	20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn		1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

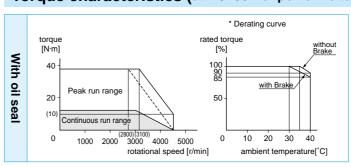
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

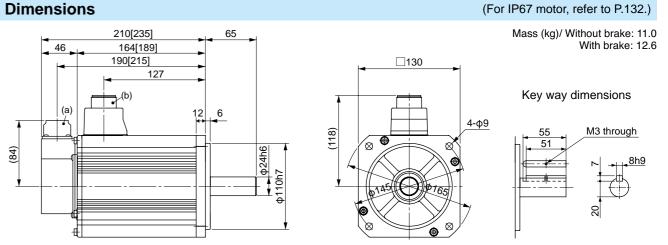
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



(For IP67 motor, refer to P.132.)



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

			AC2	00V	
Motor model *1	IP65		MSME502GC□	MSME502SC□	
wotor model		IP67	MSME502G1□	MSME502S1	
	Model	A5 series	MFDH.	TB3A2	
Applicable driver *2	No.	A5E series	MFDHTB3A2E	_	
	Fran	ne symbol	F-fra	ame	
Power supply capacit	у	(kVA)	7.	.5	
Rated output		(kW)	5.	.0	
Rated torque		(N·m)	15.9		
Momentary Max. pea	k torqu	e (N·m)	47.7		
Rated current		(A(rms))	24.0		
Max. current		(A(o-p))	102		
Regenerative brake Without opt		out option	35	357	
frequency (times/min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotational spee	d	(r/min)	3000		
Max. rotational speed		(r/min)	4500		
Moment of inertia	With	out brake	17.4		
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	18.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolut	ion per	single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

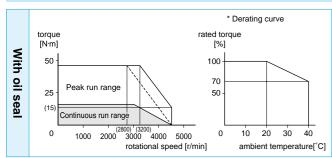
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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

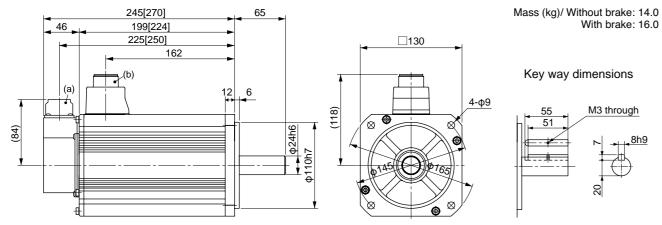
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.132.)



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- (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

			AC2	00V
Matau *1	IP65		MDME102GC	MDME102SC
Motor model *1		IP67	MDME102G1	MDME102S1
	Model	A5 series	MDDH	T3530
Applicable driver *2	No.	A5E series	MDDHT3530E	_
	Fran	ne symbol	D-fra	ame
Power supply capaci	y	(kVA)	1.	8
Rated output		(kW)	1.	0
Rated torque		(N·m)	4.	77
Momentary Max. pea	k torqu	ie (N·m)	14.3	
Rated current		(A(rms))	5.7	
Max. current (A(o-p))		24		
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)	DV0P4284		No limit Note)2	
Rated rotational spec	ed	(r/min)	2000	
Max. rotational speed	ł	(r/min)	3000	
Moment of inertia	With	out brake	4.60	
of rotor (×10 ⁻⁴ kg·m ²)	rotor (×10 ⁻⁴ kg·m ²) With brake		5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder spec	ification	Note)5	20-bit Incremental	17-bit Absolute
Resolu	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

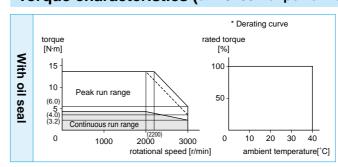
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

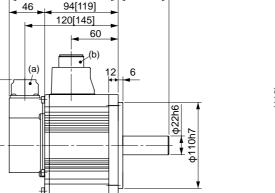
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

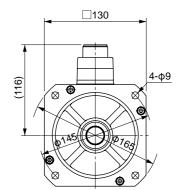


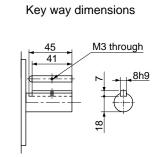
Dimensions

(For IP67 motor, refer to P.133.)

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







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

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			AC2	200V
Motor model *1	IP65		MDME152GC	MDME152SC
Wotor model		IP67	MDME152G1□	MDME152S1
	Model	A5 series	MDDH	T5540
Applicable driver *2	No.	A5E series	MDDHT5540E	-
	Fran	ne symbol	D-fr	ame
Power supply capacit	y	(kVA)	2	.3
Rated output		(kW)	1.	.5
Rated torque		(N·m)	7.16	
Momentary Max. pea	k torqu	ie (N·m)	21.5	
Rated current (A(rms))		9.4		
Max. current (A(o-p))		40		
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4284		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	Without brake		6.70	
of rotor ($\times 10^{-4}$ kg·m ²)	With brake		7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

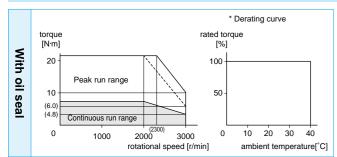
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

	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.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

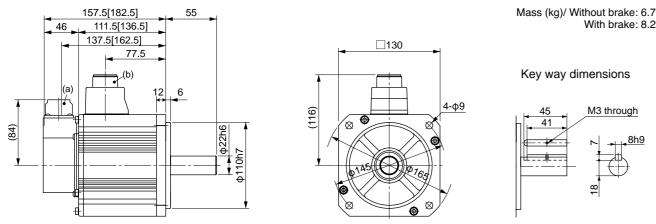
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.133.)

With brake: 8.2



- (a) Encoder connector
- (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.

Specifications

			AC2	00V
Motor model *1	IP65		MDME202GC	MDME202SC
Motor moder	IP67		MDME202G1	MDME202S1
	Model	A5 series	MEDH	T7364
Applicable driver *2	No.	A5E series	MEDHT7364E	_
	Fran	ne symbol	E-fra	ame
Power supply capacit	у	(kVA)	3	.3
Rated output		(kW)	2	.0
Rated torque		(N·m)	9.	55
Momentary Max. pea	k torqu	e (N·m)	28.6	
Rated current		(A(rms))	11.5	
Max. current		(A(o-p))	49	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4285		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	8.72	
of rotor (x10 ⁻⁴ kg·m ²)	of rotor (x10 ⁻⁴ kg·m ²) With brake		10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder speci	fication	Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

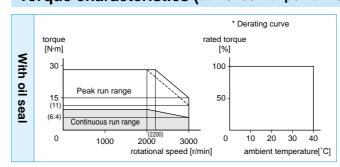
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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.136.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

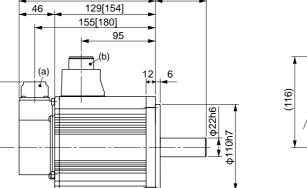


175[200]

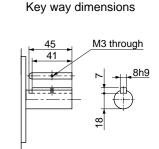
Dimensions

(For IP67 motor, refer to P.133.)

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



□130



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

IP65

IP67

Model A5 series

Frame symbol

A5E series

(kVA)

(kW)

(N·m)

(N·m)

(A(rms))

(A(o-p)) Without option

(r/min)

(r/min)

Note)3

Without brake

With brake

Resolution per single turn

Specifications

Applicable driver *2 No.

Momentary Max. peak torque

frequency (times/min) Note)1 DV0P4285×2

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Power supply capacity

Rated output

Rated torque

Rated current Max. current

Regenerative brake

Rated rotational speed

Max. rotational speed

Moment of inertia of rotor (x10⁻⁴kg·m²)

Motor model *1

AC200V

MDME402GC | MDME402SC |

MDME402G1 | MDME402S1 |

MFDHTB3A2

F-frame

6.0

4.0

19.1

57.3

21.0

89

No limit Note)2

No limit Note)2

2000

3000

37.6

38.6

10 times or less

20-bit

Incremental

1,048,576

MFDHTB3A2E

• Brake specifications (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Specifications

			AC2	200V
Motor model *1	IP65		MDME302GC□	MDME302SC□
Wotor moder		IP67	MDME302G1□	MDME302S1□
	Model	A5 series	MFDH	TA390
Applicable driver *2	No.	A5E series	MFDHTA390E	_
	Fram	ne symbol	F-fra	ame
Power supply capacit	у	(kVA)	4	.5
Rated output		(kW)	3	.0
Rated torque		(N·m)	14	1.3
Momentary Max. pea	k torqu	e (N·m)	43.0	
Rated current		(A(rms))	17.4	
Max. current		(A(o-p))	74	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	Without brake		12.9	
of rotor (×10 ⁻⁴ kg·m ²)	With brake		14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder specificatio		Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

 Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

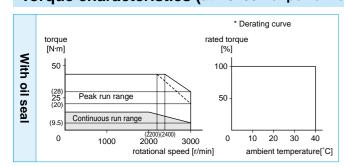
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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

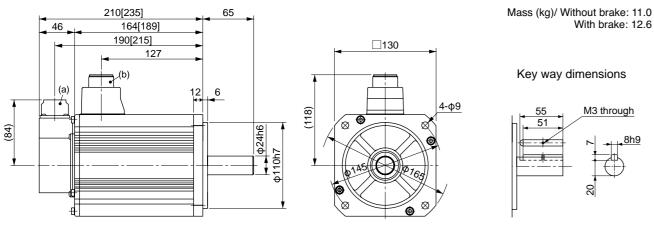
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.133.)



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

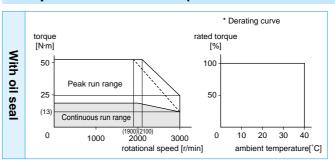
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

17-bit

Absolute

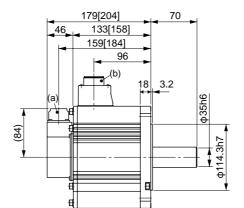
131,072

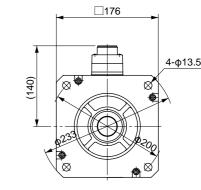


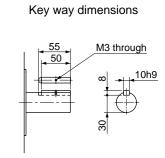
Dimensions

(For IP67 motor, refer to P.133.)

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







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

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IP65

IP67

A5E series

(kVA)

(kW)

(N·m)

(N·m)

(A(rms))

(A(o-p))

Without option

Model A5 series

Frame symbol

Specifications

Applicable driver *2 No.

Momentary Max. peak torque

Power supply capacity

Rated output

Rated torque

Rated current

Max. current

Motor model *1

Specifications

			AC2	200V	
Motor model *1		IP65	_	_	
Motor model **		IP67	MDME752G1□	MDME752S1	
	Model	A5 series	MGDH	TC3B4	
Applicable driver *2	No.	A5E series	_	_	
	Fran	ne symbol	G-fr	ame	
Power supply capa	city	(kVA)	1	1	
Rated output		(kW)	7	.5	
Rated torque		(N·m)	47	7.8	
Momentary Max. po	eak torqu	ie (N·m)	119		
Rated current		(A(rms))	44.0		
Max. current		(A(o-p))	10	165	
Regenerative brake	With	out option	No lim	it Note)2	
frequency (times/min) No	te)1 DV0	P4285×3	No limit Note)2		
Rated rotational sp	eed	(r/min)	1500		
Max. rotational spe	ed	(r/min)	3000		
Moment of inertia	With	out brake	101		
of rotor (×10 ⁻⁴ kg·m ²	2) Wi	th brake	107		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 time	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.137) This brake will be released when it is energized. Do not use this for braking the motor in motion.

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

• Permissible load (For details, refer to P.137)

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
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.41.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Regenerative brake frequency (times/min) Note)1 DV0P4285×2 No limit Note)2 During Rated rotational speed (r/min) 2000

Max. rotational speed	(r/min)	3000
Moment of inertia	Without brake	48.0
of rotor (x10 ⁻⁴ kg·m ²)	With brake	48.8
Recommended mome ratio of the load and the		10 times or less

Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute
	Resolution per sin	gle turn	1,048,576	131,072

designation has "E" is "positioning type".

AC200V

MDME502GC | MDME502SC |

MDME502G1 | MDME502S1 |

MFDHTB3A2

F-frame

7.5

5.0

23.9

71.6

25.9

110

120

MFDHTB3A2E

*2 The product that the end of driver model Detail of model designation, refer to P.11.

Brake specifications (For details, refer to P.137)

24.5 or more

80 or less

25 or less

1.3±10%

2 or more

24±2.4

784

980

784

343

/This brake will be released when it is energized.)

Do not use this for braking the motor in motion.

Permissible load (For details, refer to P.137)

Radial load P-direction (N)

Thrust load A-direction (N)

Thrust load B-direction (N)

Radial load P-direction (N)

· For details of Note 1 to Note 5, refer to P.136.

operation Thrust load A, B-direction (N)

· Dimensions of Driver, refer to P.40.

*1 Motor specifications:

Static friction torque (N·m)

Releasing time (ms) Note)4

Releasing voltage (DC) (V)

Exciting voltage (DC) (V)

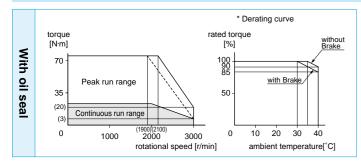
During

assembly

Exciting current (DC) (A)

Engaging time (ms)

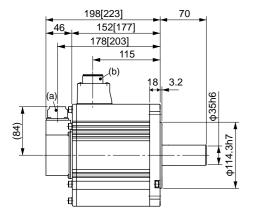
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

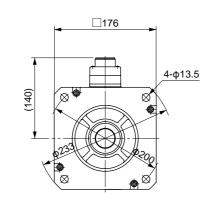


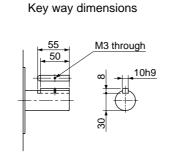
Dimensions

(For IP67 motor, refer to P.133.)

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





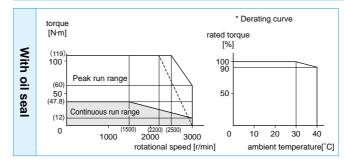


(a) Encoder connector

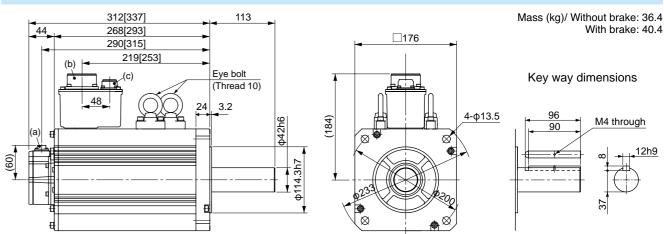
(b) Motor/Brake connector

<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.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage. >)



Dimensions



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

^{*} Figures in [] represent the dimensions with brake.

		AC2	200V	
Motor model *1	IP65		-	-
Wotor moder		IP67	MDMEC12G1	MDMEC12S1
	Model	A5 series	MHDH	TC3B4
Applicable driver *2	No.	A5E series	_	_
	Fram	ne symbol	H-fr	ame
Power supply capacit	y	(kVA)	1	7
Rated output		(kW)	11	.0
Rated torque		(N·m)	70	0.0
Momentary Max. pea	k torqu	e (N·m)	175	
Rated current		(A(rms))	54.2	
Max. current		(A(o-p))	203	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0PM20058		No limit Note)2	
Rated rotational spee	d	(r/min)	1500	
Max. rotational speed		(r/min)	2000	
Moment of inertia	Without brake		212	
of rotor (×10 ⁻⁴ kg·m ²)	With brake		220	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

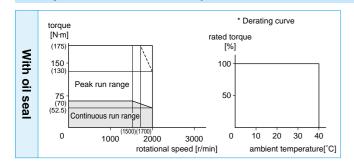
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

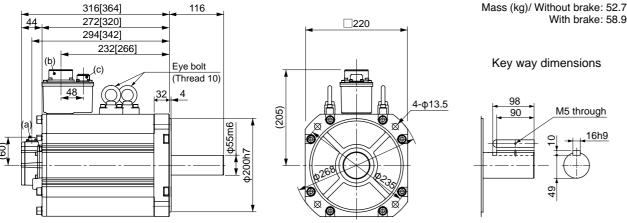
During assembly During operation	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



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

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

Specifications

			AC2	00V	
Motor model *1		IP65	-	_	
Motor model		IP67	MDMEC52G1□	MDMEC52S1	
	Model	A5 series	MHDH	TC3B4	
Applicable driver *2	No.	A5E series	_	_	
	Frame symbol		H-fra	H-frame	
Power supply capacit	у	(kVA)	2	2	
Rated output		(kW)	15	5.0	
Rated torque		(N·m)	95	95.5	
Momentary Max. pea	k torqu	ie (N·m)	224		
Rated current		(A(rms))	66.1		
Max. current	Max. current (A(o-p))			236	
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0PM20058		No limit Note)2		
Rated rotational spee	d	(r/min)	1500		
Max. rotational speed	l	(r/min)	2000		
Moment of inertia	Without brake		302		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	311		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

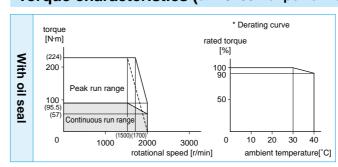
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

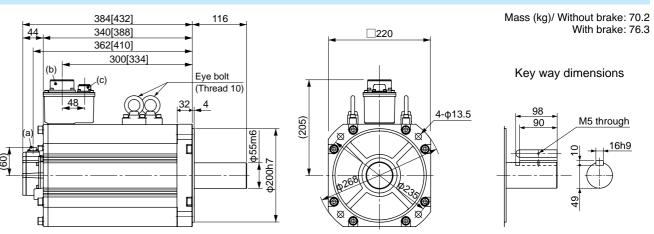
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
accombiy	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



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

			AC2	AC200V	
Motor model *1	IP65		-	_	
wotor model		IP67	MFME152G1	MFME152S1	
	Model	A5 series	MDDH	T5540	
Applicable driver *2	No.	A5E series	MDDHT5540E	_	
	Fram	ne symbol	D-fr	ame	
Power supply capacit	у	(kVA)	2	.3	
Rated output		(kW)	1.	.5	
Rated torque		(N·m)	7.16		
Momentary Max. pea	k torqu	e (N·m)	21.5		
Rated current (A(rms))			7.5		
Max. current (A(o-p))			32		
Regenerative brake	With	out option	100		
frequency (times/min) Note)1	DV0P4284		No limit Note)2		
Rated rotational spee	d	(r/min)	20	00	
Max. rotational speed		(r/min)	3000		
Moment of inertia	With	out brake	18.2		
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	23.5		
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		
Resolut	Resolution per single turn			131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

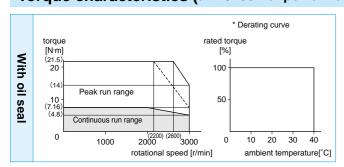
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

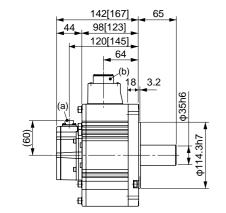
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

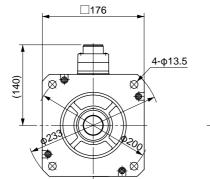
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

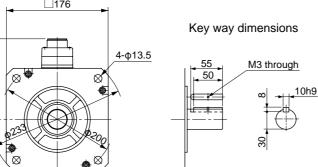
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions







Mass (kg)/ Without brake: 9.5

With brake: 12.5

- (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

			AC200V		
Motor model *1	IP65		-	-	
Motor model		IP67	MFME252G1	MFME252S1	
	Model	A5 series	MEDH	T7364	
Applicable driver *2	No.	A5E series	MEDHT7364E	_	
	Frame symbol		E-fra	E-frame	
Power supply capacit	y	(kVA)	3.	.8	
Rated output		(kW)	2.	.5	
Rated torque		(N·m)	11.9		
Momentary Max. pea	k torqu	ie (N·m)	30.4		
Rated current		(A(rms))	13.4		
Max. current		(A(o-p))	5	7	
Regenerative brake	Without option		75		
frequency (times/min) Note)1	DV0P4285		No limit Note)2		
Rated rotational spee	d	(r/min)	2000		
Max. rotational speed		(r/min)	3000		
Moment of inertia	With	out brake	35.8		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	45.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn			131,072	

Motor Specifications 200V MFME 2.5kW

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

Middle inertia, Middle capacity Flat type

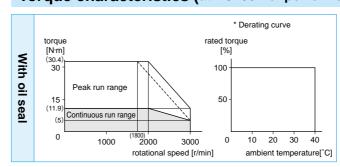
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

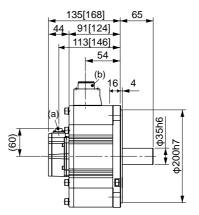
	Radial load P-direction (N)	1862
U	Thrust load A-direction (N)	686
Combiy	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294
		Thrust load A-direction (N) Thrust load B-direction (N) Tring Radial load P-direction (N)

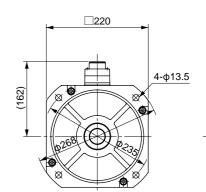
- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

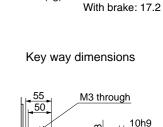
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions







Mass (kg)/ Without brake: 13.1

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

			AC2	00V
Motor model *1	IP65		-	-
Motor model *1		IP67	MFME452G1	MFME452S1
	Model	A5 series	MFDHTB3A2	
Applicable driver *2	No.	A5E series	MFDHTB3A2E	_
	Frame symbol		F-frame	
Power supply capacit	у	(kVA)	6	.8
Rated output		(kW)	4	.5
Rated torque		(N·m)	21.5	
Momentary Max. pea	k torqu	e (N·m)	54.9	
Rated current		(A(rms))	24.7	
Max. current		(A(o-p))	105	
Regenerative brake	Without option		67	
frequency (times/min) Note)1	DV0P4285×2		375	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	Without brake		63.1	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	70.9	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

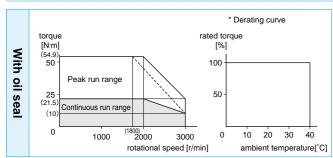
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

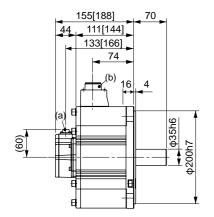
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

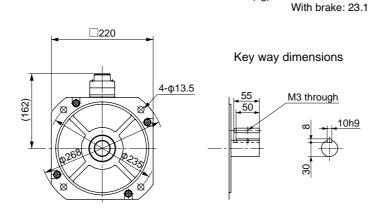
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions





Mass (kg)/ Without brake: 18.2

- (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

			AC200V	
Motor model *1	IP65		MGME092GC□	MGME092SC□
Wotor moder		IP67	MGME092G1□	MGME092S1
	Model	A5 series	MDDH	T5540
Applicable driver *2	No.	A5E series	MDDHT5540E	_
	Frame symbol		D-fr	ame
Power supply capacit	y	(kVA)	1.	.8
Rated output		(kW)	0.	.9
Rated torque		(N·m)	8.	59
Momentary Max. pea	k torqu	e (N·m)	19.3	
Rated current		(A(rms))	7.6	
Max. current		(A(o-p))	24	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4284		No limit Note)2	
Rated rotational spee	d	(r/min)	1000	
Max. rotational speed		(r/min)	2000	
Moment of inertia	Without brake		6.70	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolution per single turn			1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

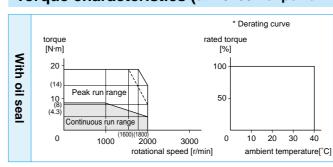
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.38.
- *1 Motor specifications: \square
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

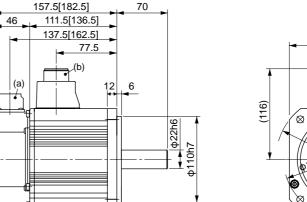
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

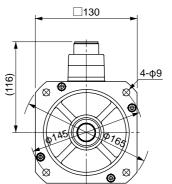


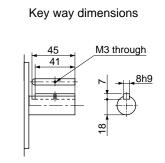
Dimensions

(For IP67 motor, refer to P.134.)

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







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

			AC200V	
NA-4	IP65		MGME202GC□	MGME202SC□
Motor model *1		IP67	MGME202G1□	MGME202S1
	Model A5 series		MFDH	TA390
Applicable driver *2	No.	A5E series	MFDHTA390E	-
	Frame symbol		F-fra	ame
Power supply capacit	у	(kVA)	3	.8
Rated output		(kW)	2	.0
Rated torque		(N·m)	19).1
Momentary Max. pea	k torqu	e (N·m)	47.7	
Rated current (A(rms))		17.0		
Max. current (A(o-p))		60		
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotational spee	d	(r/min)	1000	
Max. rotational speed	l	(r/min)	2000	
Moment of inertia	With	out brake	30.3	
of rotor (×10 ⁻⁴ kg·m ²)	Wit	th brake	31.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute	
		1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

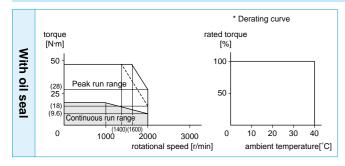
24.5 or more
80 or less
25 or less
1.3±10%
2 or more
24±2.4

Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

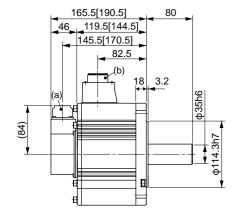
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

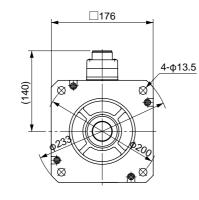


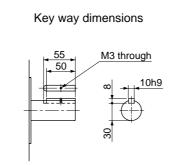
Dimensions

(For IP67 motor, refer to P.134.)

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







- (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

			AC2	00V
Motor model *1	IP65		MGME302GC□	MGME302SC□
Motor model		IP67	MGME302G1□	MGME302S1
	Model	A5 series	MFDH.	TB3A2
Applicable driver *2	No.	A5E series	MFDHTB3A2E	-
	Frame symbol		F-fra	ame
Power supply capacit	y	(kVA)	4.	.5
Rated output		(kW)	3.	.0
Rated torque		(N·m)	28	3.7
Momentary Max. pea	k torqu	ie (N·m)	71.7	
Rated current		(A(rms))	22.6	
Max. current		(A(o-p))	80	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotational spee	d	(r/min)	1000	
Max. rotational speed		(r/min)	2000	
Moment of inertia	Without brake		48.4	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	49.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

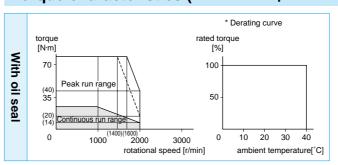
,	,
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

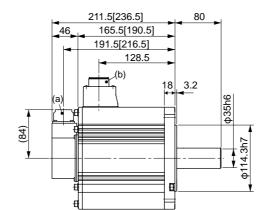
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

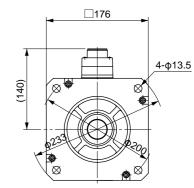


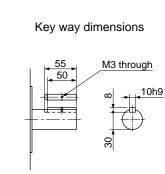
Dimensions

(For IP67 motor, refer to P.134.)

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







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

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

Specifications

			AC2	00V
Motor model *1	IP65		-	-
wotor model		IP67	MGME452G1□	MGME452S1□
	Model	A5 series	MFDH	TB3A2
Applicable driver *2	No.	A5E series	MFDHTB3A2E	_
	Fran	ne symbol	F-fra	ame
Power supply capacit	у	(kVA)	7.	.5
Rated output		(kW)	4	.5
Rated torque		(N·m)	43	3.0
Momentary Max. pea	k torqu	e (N·m)	107	
Rated current		(A(rms))	29.7	
Max. current		(A(o-p))	110	
Regenerative brake Without option		No limi	t Note)2	
frequency (times/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotational spee	d	(r/min)	1000	
Max. rotational speed		(r/min)	2000	
Moment of inertia	Moment of inertia Without brake		79.1	
of rotor (×10 ⁻⁴ kg·m ²)	r (x10 ⁻⁴ kg·m²) With brake		84.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

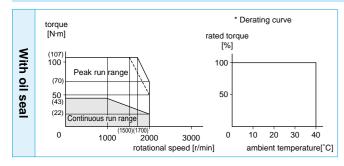
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

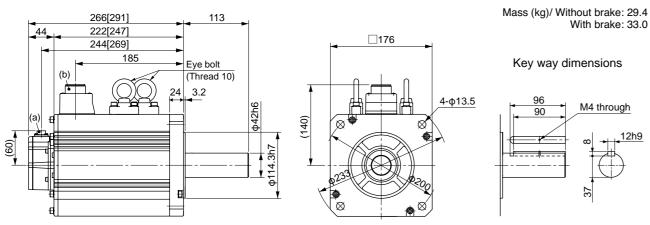
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V 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

			AC200V		
Motor model *1		IP65	_	-	
Wotor model		IP67	MGME602G1□	MGME602S1	
	Model	A5 series	MGDH	TC3B4	
Applicable driver *2	No.	A5E series		_	
	Frame symbol		G-fr	G-frame	
Power supply capacit	у	(kVA)	9.	.0	
Rated output		(kW)	6.	.0	
Rated torque		(N·m)	57	'.3	
Momentary Max. pea	k torqu	ie (N·m)	143		
Rated current		(A(rms))	38.8		
Max. current (A(o-p))		149			
Regenerative brake	With	out option	No limit Note)2		
frequency (times/min) Note)1	DV0P4285×4		No limit Note)2		
Rated rotational spee	d	(r/min)	1000		
Max. rotational speed	l	(r/min)	2000		
Moment of inertia	With	out brake	101		
of rotor ($\times 10^{-4}$ kg·m ²)	Wi	th brake	107		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolut	Resolution per single turn		1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

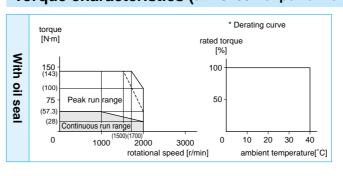
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

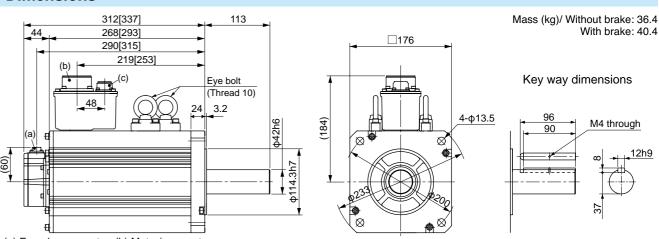
Radial load P-direction (N)	2058
Thrust load A-direction (N)	980
Thrust load B-direction (N)	1176
Radial load P-direction (N)	1764
Thrust load A, B-direction (N)	588
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.41.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



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

			AC200V	
Motor model *1		IP65	MHME102GC	MHME102SC
Motor model		IP67	MHME102G1	MHME102S1
	Model	A5 series	MDDH	T3530
Applicable driver *2	No.	A5E series	MDDHT3530E	_
	Frame symbol		D-fr	ame
Power supply capacit	y	(kVA)	1.	.8
Rated output		(kW)	1.	.0
Rated torque		(N·m)	4.77	
Momentary Max. peal	k torqu	e (N·m)	14.3	
Rated current (A(rms))		5.7		
Max. current (A(o-p))		24		
Regenerative brake	Regenerative brake Without option		83	
frequency (times/min) Note)1 DV0P4284		0P4284	No limi	t Note)2
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	24.7	
of rotor (×10 ⁻⁴ kg·m ²)	Wit	th brake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

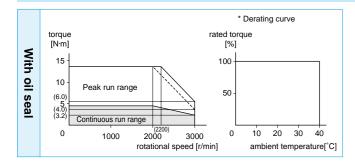
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

	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

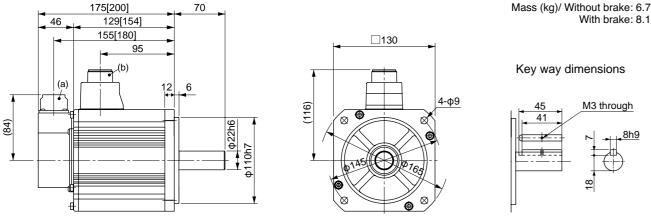
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.135.)



- (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

			AC200V	
Motor model *1	IP65		MHME152GC	MHME152SC
Motor model		IP67	MHME152G1	MHME152S1
	Model	A5 series	MDDH	T5540
Applicable driver *2	No.	A5E series	MDDHT5540E	-
	Frame symbol		D-fr	ame
Power supply capacit	у	(kVA)	2	.3
Rated output		(kW)	1.	.5
Rated torque		(N·m)	7.	16
Momentary Max. pea	k torqu	e (N·m)	21.5	
Rated current (A(rms))		9.4		
Max. current (A(o-p))		4	0	
Regenerative brake	Without option		22	
frequency (times/min) Note)1	DV0P4284		130	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	37.1	
of rotor (x10 ⁻⁴ kg·m ²)	With brake		38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less	
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /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

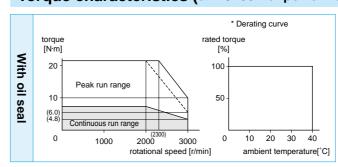
• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.38.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

Motor Specifications 200V MHME 1.5kW [High inertia, Middle capacity]



192.5[217.5]

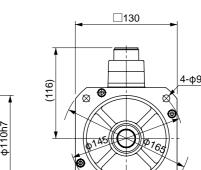
146.5[171.5] 172.5[197.5]

112.5

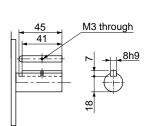
Dimensions

(For IP67 motor, refer to P.135.)

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



Key way dimensions



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

Rotary encoder specifications

Specifications

			AC200V	
Motor model *1	IP65		MHME302GC	MHME302SC
Wotor model		IP67	MHME302G1	MHME302S1
	Model	A5 series	MFDH	TA390
Applicable driver *2	No.	A5E series	MFDHTA390E	-
	Frame symbol		F-fra	ame
Power supply capacit	у	(kVA)	4.	5
Rated output		(kW)	3.	0
Rated torque		(N·m)	14	.3
Momentary Max. pea	k torqu	ie (N·m)	43.0	
Rated current	Rated current (A(rms))		16.0	
Max. current (A(o-p))		68		
Regenerative brake	Regenerative brake Without option		19	
frequency (times/min) Note)1	DV0P4285×2		142	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	Moment of inertia Without brake		90.5	
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /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.137)

	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.136.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Brake specifications (For details, refer to P.137) **AC200V**

			A02001	
Motor model *1	IP65		MHME202GC	MHME202SC
wotor model	IP67		MHME202G1□	MHME202\$1
	Model	A5 series	MEDH	T7364
Applicable driver *2	No.	A5E series	MEDHT7364E	_
	Fran	ne symbol	E-fra	ame
Power supply capacity (kVA)		3.	.3	
Rated output (kW)		2.0		
Rated torque (N·m)		9.55		
Momentary Max. peak torque (N·m)		28.6		
Rated current (A(rms))		11.1		
Max. current (A(o-p))		47		
Regenerative brake	Without option		45	
frequency (times/min) Note)1	DV0P4285		142	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed (r/min)		3000		
Moment of inertia	Without brake		57.8	
of rotor (×10 ⁻⁴ kg·m ²)	With brake		59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less	

20-bit

Incremental

1,048,576

/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.137)

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

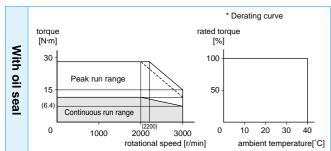
- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

17-bit

Absolute

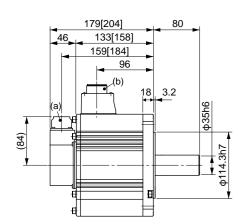
131,072

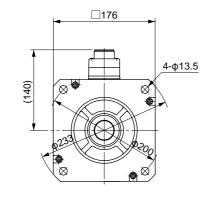


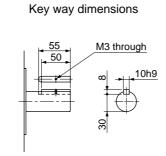
Resolution per single turn

(For IP67 motor, refer to P.135.)

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







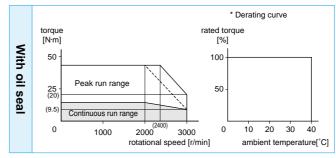
(a) Encoder connector

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.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

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



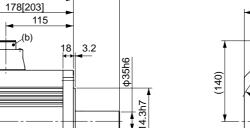
198[223]

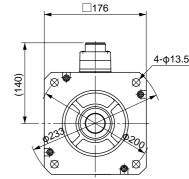
152[177]

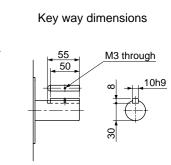
Dimensions

(For IP67 motor, refer to P.135.)

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







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

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

Specifications

			AC2	200V
Motor model *1	IP65		MHME402GC	MHME402SC
Motor model **		IP67	MHME402G1□	MHME402S1
	Model	A5 series	MFDH	TB3A2
Applicable driver *2	No.	A5E series	MFDHTB3A2E	_
	Fram	ne symbol	F-fra	ame
Power supply capacit	у	(kVA)	6	.0
Rated output		(kW)	4	.0
Rated torque		(N·m)	19.1	
Momentary Max. pea	k torqu	e (N·m)	57.3	
Rated current		(A(rms))	21.0	
Max. current		(A(o-p))	89	
Regenerative brake	Without option		17	
frequency (times/min) Note)1	DV0P4285×2		125	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	112	
of rotor (×10 ⁻⁴ kg·m ²)	Wit	th brake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

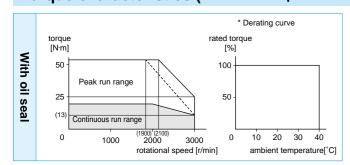
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

	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.136.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

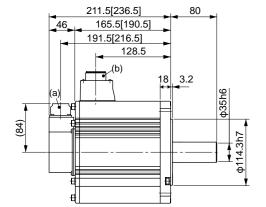
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

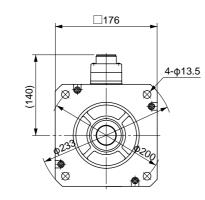


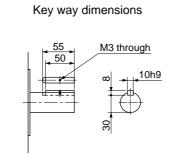
Dimensions

(For IP67 motor, refer to P.135.)

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







- (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

			AC200V		
Motor model *1		IP65	MHME502GC	MHME502SC	
Motor model		IP67	MHME502G1	MHME502S1	
	Model	A5 series	MFDH.	TB3A2	
Applicable driver *2	No.	A5E series	MFDHTB3A2E	_	
	Fran	ne symbol	F-fra	ame	
Power supply capac	city	(kVA)	7.	.5	
Rated output		(kW)	5.	.0	
Rated torque		(N·m)	23	3.9	
Momentary Max. pe	ak torqu	ie (N·m)	71.6		
Rated current		(A(rms))	25.9		
Max. current		(A(o-p))	110		
Regenerative brake	With	out option	10		
frequency (times/min) Note	e)1 DV0	P4285×2	76		
Rated rotational spe	eed	(r/min)	2000		
Max. rotational spee	ed	(r/min)	3000		
Moment of inertia		out brake	162		
of rotor (×10 ⁻⁴ kg·m ²)) Wi	th brake	164		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		1,048,576	131,072		

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

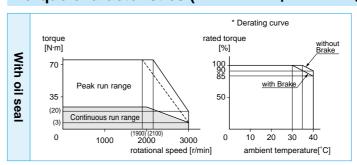
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.136.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

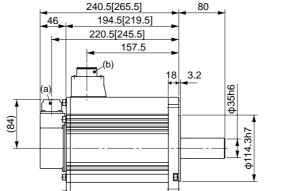
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

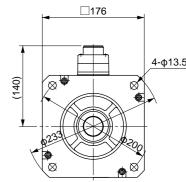


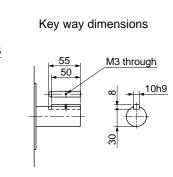
Dimensions

(For IP67 motor, refer to P.135.)

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







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

Motor Specifications 400V MSME 750W [Low inertia, Middle capacity]

Specifications

			AC2	200V	
Motor model *1	IP65		-	-	
wotor model		IP67	MHME752G1□	MHME752S1	
	Model	A5 series	MGDH	TC3B4	
Applicable driver *2	No.	A5E series	_	_	
	Fram	ne symbol	G-fr	ame	
Power supply capacit	у	(kVA)	1	1	
Rated output		(kW)	7.	.5	
Rated torque		(N·m)	47	47.8	
Momentary Max. pea	k torqu	e (N·m)	119		
Rated current		(A(rms))	44.0		
Max. current		(A(o-p))	165		
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0P4285×4		No limit Note)2		
Rated rotational spee	d	(r/min)	1500		
Max. rotational speed		(r/min)	3000		
Moment of inertia	With	out brake	273		
of rotor (×10 ⁻⁴ kg·m ²)	of rotor (×10 ⁻⁴ kg·m ²) With brake		279		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

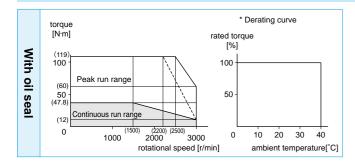
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

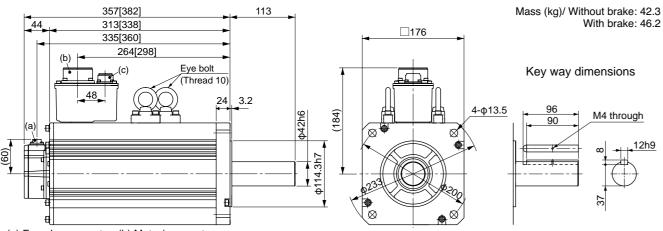
		Radial load P-direction (N)	2058
	During assembly	Thrust load A-direction (N)	980
	doscinory	Thrust load B-direction (N)	1176
	During operation	Radial load P-direction (N)	1176
		Thrust load A, B-direction (N)	490

- · For details of Note 1 to Note 5, refer to P.136.
- · Dimensions of Driver, refer to P.41.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



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

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. 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

			AC400V	
Motor model *1		IP65	-	-
Motor model		IP67	MSME084G1□	MSME084S1
	Model	A5 series	MDDH	T2412
Applicable driver *2	No.	A5E series	MDDHT2412E	_
	Fran	ne symbol	D-fr	ame
Power supply capaci	ty	(kVA)	1.	.6
Rated output		(W)	7:	50
Rated torque		(N·m)	2.:	39
Momentary Max. pea	ak torqu	ie (N·m)	7.16	
Rated current		(A(rms))	2.4	
Max. current (A(o-p))			1	0
Regenerative brake	With	out option	No limit Note)2	
frequency (times/min) Note)	DV0PM20048		No limit Note)2	
Rated rotational spec	ed	(r/min)	3000	
Max. rotational speed	d	(r/min)	5000	
Moment of inertia	With	out brake	1.61	
of rotor ($\times 10^{-4}$ kg·m ²)	Wi	th brake	1.93	
Recommended moment of inertia ratio of the load and the rotor Note)3			times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolu	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

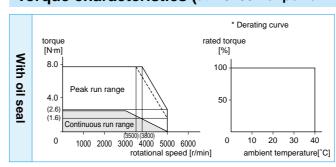
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

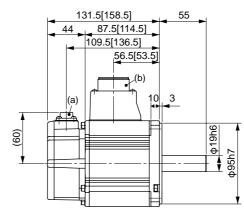
During assembly During operation	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



100

Key way dimensions

With brake: 4.1

Mass (kg)/ Without brake: 3.1

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

			AC4	00V
Motor model *1	IP65		MSME104GC□	MSME104SC
Motor model		IP67	MSME104G1	MSME104S1
	Model	A5 series	MDDH	T3420
Applicable driver *2	No.	A5E series	MDDHT3420E	-
	Fram	ne symbol	D-fra	ame
Power supply capacit	y	(kVA)	1.	8
Rated output		(kW)	1.	0
Rated torque		(N·m)	3.	18
Momentary Max. pea	k torqu	e (N·m)	9.55	
Rated current		(A(rms))	3.3	
Max. current		(A(o-p))	14	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	Without brake		2.03	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less	
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	ution per single turn		1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

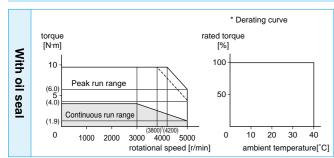
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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.137.
- · Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

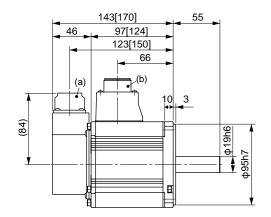
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

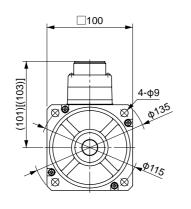


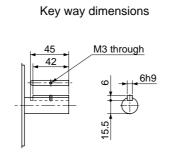
Dimensions

(For IP67 motor, refer to P.132.)

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







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

100

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. 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

			AC400V	
Motor model *1	IP65		MSME154GC□	MSME154SC
Motor model		IP67	MSME154G1	MSME154S1
	Model	A5 series	MDDHT3420	
Applicable driver *2	No.	A5E series	MDDHT3420E	_
	Frame symbol		D-fra	ame
Power supply capacit	у	(kVA)	2.	.3
Rated output		(kW)	1.	.5
Rated torque		(N·m)	4.	77
Momentary Max. pea	k torqu	e (N·m)	14.3	
Rated current		(A(rms))	4.2	
Max. current		(A(o-p))	18	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	Without brake		2.84	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /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

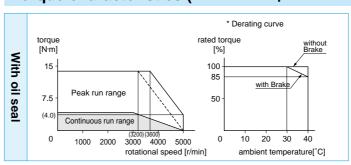
• Permissible load (For details, refer to P.137)

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

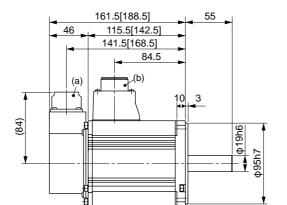
- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

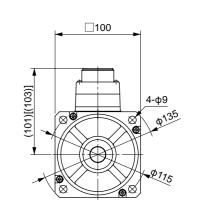
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

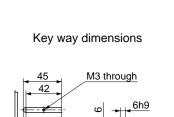
Motor Specifications 400V MSME 1.5kW [Low inertia, Middle capacity]



Dimensions (For IP67 motor, refer to P.132.)







Mass (kg)/ Without brake: 4.4

With brake: 5.4

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

			AC4	00V
Motor model *1	IP65		MSME204GC□	MSME204SC□
Motor model	IP67		MSME204G1□	MSME204S1
	Model	A5 series	MEDH	T4430
Applicable driver *2	No.	A5E series	MEDHT4430E	-
	Fram	ne symbol	E-fra	ame
Power supply capacit	y	(kVA)	3	.3
Rated output		(kW)	2	.0
Rated torque		(N·m)	6.37	
Momentary Max. pea	k torqu	e (N·m)	19.1	
Rated current		(A(rms))	5.7	
Max. current (A(o-p))		24		
Regenerative brake	With	out option	No limit Note)2	
frequency (times/min) Note)1	DV0PM20049		No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	With	out brake	3.68	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	4.01	
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	
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

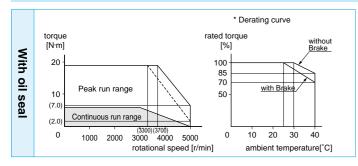
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

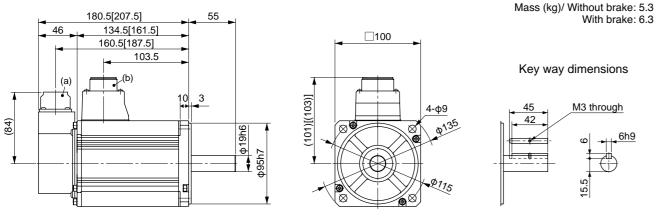
- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.132.)



- (a) Encoder connector
- (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.

Specifications

		AC4	00V	
Motor model *1	IP65		MSME304GC□	MSME304SC□
Motor model		IP67	MSME304G1□	MSME304S1
	Model	A5 series	MFDH	T5440
Applicable driver *2	No.	A5E series	MFDHT5440E	_
	Fran	ne symbol	F-fra	ame
Power supply capacit	у	(kVA)	4.	.5
Rated output		(kW)	3.	.0
Rated torque		(N·m)	9.9	55
Momentary Max. pea	k torqu	28.6		
Rated current		(A(rms))	9.2	
Max. current		(A(o-p))	39	
Regenerative brake	With	out option	No limi	t Note)2
frequency (times/min) Note)1	DV0P	M20049×2	No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	5000	
Moment of inertia	With	out brake	6.50	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	7.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less
Rotary encoder speci	fication	Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

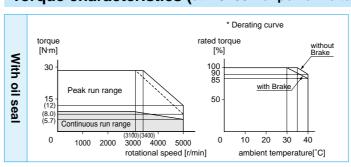
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

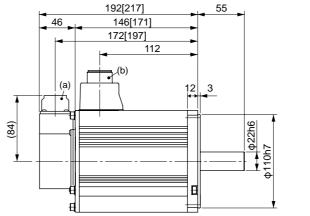
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

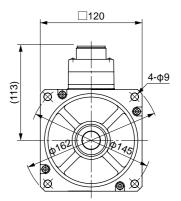


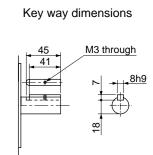
Dimensions

(For IP67 motor, refer to P.132.)

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







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

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		AC4	00V		
Motor model *1		IP65	MSME404GC□	MSME404SC□	
Motor model		IP67	MSME404G1□	MSME404S1□	
	Model	A5 series	MFDH	TA464	
Applicable driver *2	No.	A5E series	MFDHTA464E	-	
	Fran	ne symbol	F-fra	ame	
Power supply capacity	y	(kVA)	6	.8	
Rated output		(kW)	4	.0	
Rated torque		(N·m)	12	12.7	
Momentary Max. peal	k torqu	e (N·m)	38.2		
Rated current		(A(rms))	9.9		
Max. current		(A(o-p))	42		
Regenerative brake	With	out option	No limit Note)2		
frequency (times/min) Note)1	DV0P	M20049×2	No limit Note)2		
Rated rotational spee	d	(r/min)	3000		
Max. rotational speed		(r/min)	4500		
Moment of inertia	With	out brake	12.9		
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

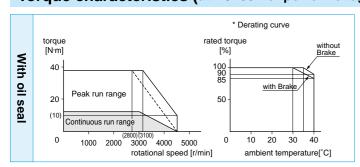
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

	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

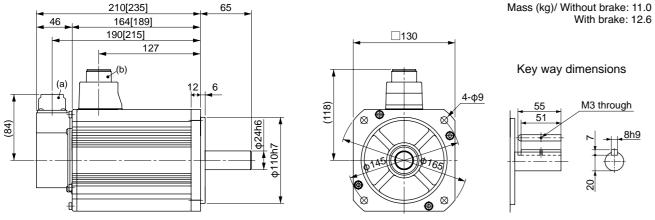
- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.132.)



- (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

			AC4	00V
Mataras dal *1		IP65	MSME504GC□	MSME504SC
Motor model *1		IP67	MSME504G1□	MSME504S1
	Model	A5 series	MFDH	TA464
Applicable driver *2	No.	A5E series	MFDHTA464E	_
	Fran	ne symbol	F-fra	ame
Power supply capacity	y	(kVA)	7.	5
Rated output		(kW)	5.	0
Rated torque		(N·m)	15	5.9
Momentary Max. peal	k torqu	ie (N·m)	47.7	
Rated current		(A(rms))	12.0	
Max. current		(A(o-p))	51	
Regenerative brake	With	out option	357	
frequency (times/min) Note)1	DV0P	M20049×2	No limit Note)2	
Rated rotational spee	d	(r/min)	3000	
Max. rotational speed		(r/min)	45	00
Moment of inertia	With	out brake	17.4	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	18.6	
Recommended mome ratio of the load and the			15 times	s or less
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /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.137)

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

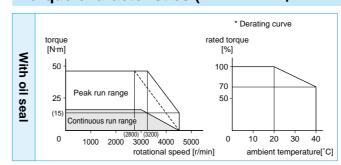
- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:

□130

*2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

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



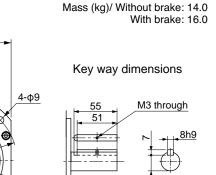
245[270]

199[224]

225[250]

Dimensions

(For IP67 motor, refer to P.132.)



- (84)
- (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.

					AC4	100V
NA-1	k 1		IP6	65	-	-
Motor model *			IP6	67	MDME064G1	MDME064S1
		Model A5 series		5 series	MDDH	IT2407
Applicable driv	ver *2	No.	A٤	5E series	MDDHT2407E	_
		Fram	ne s	symbol	D-fr	ame
Power supply	capacity	y		(kVA)	1	.2
Rated output				(W)	6	00
Rated torque				(N·m)	2.	86
Momentary Ma	ax. peal	k torqu	е	(N·m)	8.59	
Rated current			(A(rms))	1.5	
Max. current				(A(o-p))	6.5	
Regenerative b	orake	Without option			No lim	it Note)2
frequency (times/	min) Note)1	DV0PM20048			No limit Note)2	
Rated rotation	al spee	d		(r/min)	2000	
Max. rotationa	l speed			(r/min)	3000	
Moment of ine	ertia	Without brake		t brake	2.03	
of rotor (×10 ⁻⁴	kg·m²)	With brake			2.35	
Recommende ratio of the loa				rtia Note)3	times	or less
Rotary encode	er speci	fication	าร	Note)5	20-bit Incremental	17-bit Absolute
	ion per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /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.137)

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

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Specifications

		AC4	100V	
Motor model *1	IP65		-	-
Wotor model	IP67		MDME044G1	MDME044S1
	Model	A5 series	MDDH	T2407
Applicable driver *2	No.	A5E series	MDDHT2407E	_
	Fram	ne symbol	D-fr	ame
Power supply capacit	у	(kVA)	0	.9
Rated output		(W)	4(00
Rated torque		(N·m)	1.91	
Momentary Max. pea	k torqu	e (N·m)	5.73	
Rated current		(A(rms))	1.2	
Max. current		(A(o-p))	4.9	
Regenerative brake	With	out option	No lim	t Note)2
frequency (times/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	1.61	
of rotor (×10 ⁻⁴ kg·m ²) With brake		1.9		
Recommended mome ratio of the load and t			times	or less
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute

1,048,576

 Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

2.5 or more
50 or less
15 or less
0.70±10%
2 or more
24±2.4

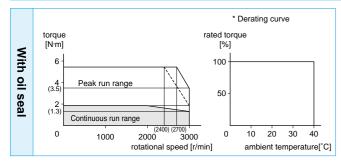
Permissible load (For details, refer to P.137)

	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
	doocinbiy	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.137.
- · Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

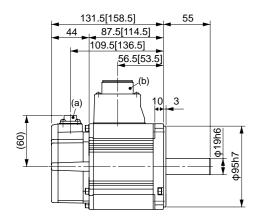
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

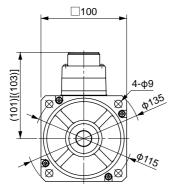
131,072

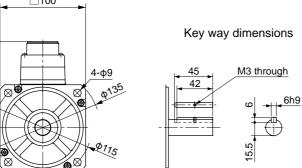


Resolution per single turn

Dimensions







Mass (kg)/ Without brake: 3.1

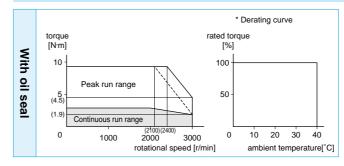
With brake: 4.1

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

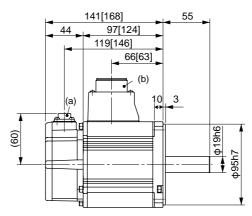
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

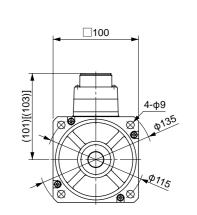
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

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



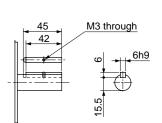
Dimensions





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

Key way dimensions



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

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

Specifications

			AC4	00V
Motor model *1		IP65	MDME104GC□	MDME104SC
Wotor model		IP67	MDME104G1	MDME104S1
	Model	A5 series	MDDH	T2412
Applicable driver *2	No.	A5E series	MDDHT2412E	_
	Fran	ne symbol	D-fr	ame
Power supply capac	ity	(kVA)	1	.8
Rated output		(kW)	1	.0
Rated torque		(N·m)	4.77	
Momentary Max. pe	ak torqu	ie (N·m)	14.3	
Rated current		(A(rms))	2.8	
Max. current		(A(o-p))	12	
Regenerative brake	With	out option	No limit Note)2	
frequency (times/min) Note	DV0	PM20048	No limit Note)2	
Rated rotational spe	ed	(r/min)	2000	
Max. rotational spee	d	(r/min)	3000	
Moment of inertia	With	out brake	4.60	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

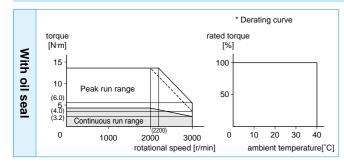
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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.137.
- · Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

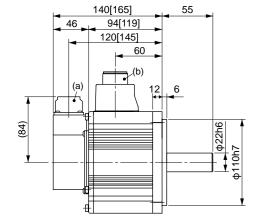


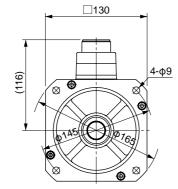
Dimensions

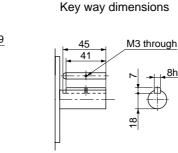
(For IP67 motor, refer to P.133.)

Mass (kg)/ Without brake: 5.2

With brake: 6.7







- (a) Encoder connector
- (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.

Specifications

			AC4	00V
Motor model *1	IP65		MDME154GC	MDME154SC
wotor model		IP67	MDME154G1	MDME154S1
	Model	A5 series	MDDH	T3420
Applicable driver *2	No.	A5E series	MDDHT3420E	_
	Fran	ne symbol	D-fr	ame
Power supply capacit	y	(kVA)	2	.3
Rated output		(kW)	1.	.5
Rated torque		(N·m)	7.	16
Momentary Max. pea	k torqu	ie (N·m)	21.5	
Rated current		(A(rms))	4.7	
Max. current		(A(o-p))	20	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)	DV0PM20048		No limit Note)2	
Rated rotational spec	ed	(r/min)	2000	
Max. rotational speed	i	(r/min)	3000	
Moment of inertia	Without brake		6.70	
of rotor ($\times 10^{-4}$ kg·m ²)	Wi	th brake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolu	tion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

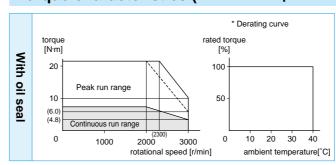
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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.137.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

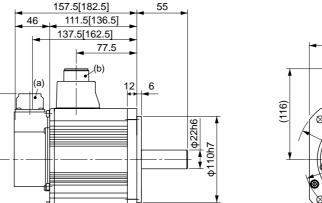
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

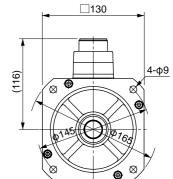


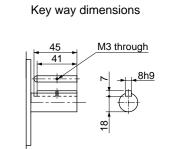
Dimensions

(For IP67 motor, refer to P.133.)

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







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

			AC4	.00V
Motor model *1	IP65		MDME204GC	MDME204SC
Motor model		IP67	MDME204G1□	MDME204S1
	Model	A5 series	MEDH	T4430
Applicable driver *2	No.	A5E series	MEDHT4430E	_
	Fram	ne symbol	E-fra	ame
Power supply capacit	у	(kVA)	3	.3
Rated output		(kW)	2	.0
Rated torque		(N·m)	9.	55
Momentary Max. pea	k torqu	e (N·m)	28.6	
Rated current		(A(rms))	5.9	
Max. current		(A(o-p))	25	
Regenerative brake	With	out option	No limit Note)2	
frequency (times/min) Note)1	DV0PM20049		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	8.72	
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder speci	fication	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn		1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

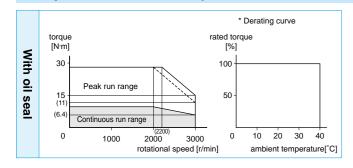
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

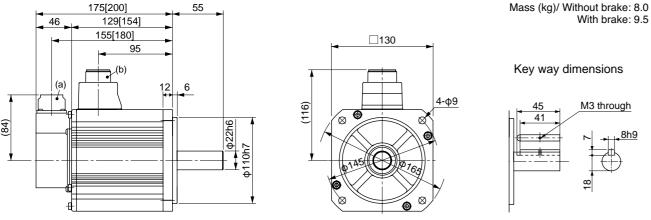
- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.133.)



- (a) Encoder connector
- (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.

Specifications

			AC400V		
Motor model *1		IP65	MDME304GC	MDME304SC	
Motor model		IP67	MDME304G1	MDME304S1	
	Model	A5 series	MFDH	T5440	
Applicable driver *2	No.	A5E series	MFDHT5440E	-	
	Fran	ne symbol	F-fra	ame	
Power supply capac	ity	(kVA)	4	.5	
Rated output		(kW)	3.	.0	
Rated torque		(N·m)	14	.3	
Momentary Max. pe	ak torqu	ie (N·m)	43.0		
Rated current		(A(rms))	8.7		
Max. current (A(o-p))		37			
Regenerative brake	With	out option	No limi	No limit Note)2	
frequency (times/min) Note	⁾¹ DV0P	M20049×2	No limit Note)2		
Rated rotational spe	ed	(r/min)	2000		
Max. rotational spee	d	(r/min)	3000		
Moment of inertia	With	out brake	12.9		
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /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

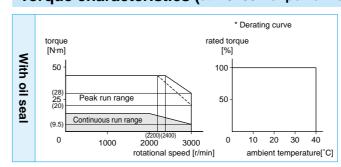
• Permissible load (For details, refer to P.137)

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.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

□130



210[235]

164[189]

127

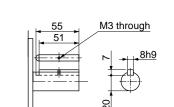
190[215]

Dimensions

(For IP67 motor, refer to P.133.)

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

Key way dimensions



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

			AC4	00V
Motor model *1	IP65		MDME404GC	MDME404SC
Motor model	IP67		MDME404G1	MDME404S1
	Model	A5 series	MFDH	TA464
Applicable driver *2	No.	A5E series	MFDHTA464E	_
	Fran	ne symbol	F-fra	ame
Power supply capacit	y	(kVA)	6	.8
Rated output		(kW)	4	.0
Rated torque		(N·m)	19.1	
Momentary Max. pea	k torqu	e (N·m)	57.3	
Rated current (A(rms))		10.6		
Max. current (A(o-p))		45		
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	37.6	
of rotor ($\times 10^{-4}$ kg·m ²)	With brake		38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

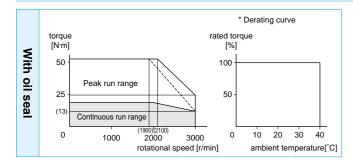
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

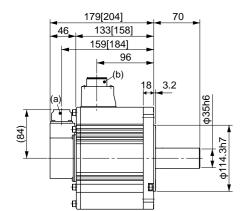
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

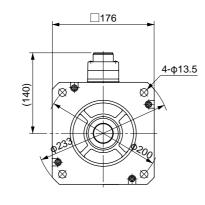


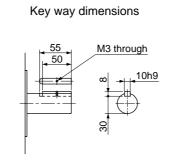
Dimensions

(For IP67 motor, refer to P.133.)

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







- (a) Encoder connector
- (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.

Specifications

			AC400V	
Motor model *1	IP65		MDME504GC	MDME504SC
Motor moder	IP67		MDME504G1□	MDME504S1
	Model	A5 series	MFDH	TA464
Applicable driver *2	No.	A5E series	MFDHTA464E	-
	Fran	ne symbol	F-fra	ame
Power supply capacit	y	(kVA)	7.	.5
Rated output		(kW)	5.	.0
Rated torque		(N·m)	23	3.9
Momentary Max. pea	k torqu	ie (N·m)	71.6	
Rated current		(A(rms))	13.0	
Max. current		(A(o-p))	55	
Regenerative brake	Without option		120	
frequency (times/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	48.0	
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	48.8	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	Resolution per single turn			131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

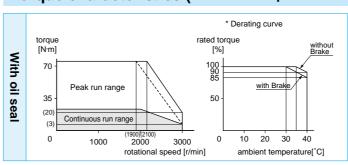
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

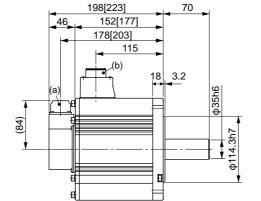
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

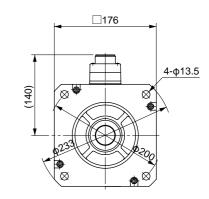


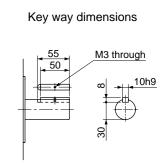
Dimensions

(For IP67 motor, refer to P.133.)

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







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

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			AC400V		
Motor model *1	IP65		-	-	
Motor model		IP67	MDME754G1	MDME754S1	
	Model A5 series		MGDH	TB4A2	
Applicable driver *2	No.	A5E series	-	_	
	Fram	ne symbol	G-fr	ame	
Power supply capacity	y	(kVA)	1	1	
Rated output		(kW)	7.	.5	
Rated torque		(N·m)	47.8		
Momentary Max. peal	k torqu	e (N·m)	119		
Rated current	Rated current (A(rms))		22		
Max. current		(A(o-p))	8	83	
Regenerative brake	With	out option	No limi	t Note)2	
frequency (times/min) Note)1	DV0PM20049×3		No limit Note)2		
Rated rotational spee	d	(r/min)	1500		
Max. rotational speed		(r/min)	3000		
Moment of inertia	With	out brake	101		
of rotor (x10 ⁻⁴ kg·m ²)	Wit	th brake	107		
Recommended moment of inertia ratio of the load and the rotor Note)3		times or less			
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn			131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

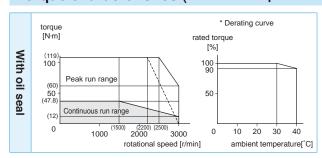
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

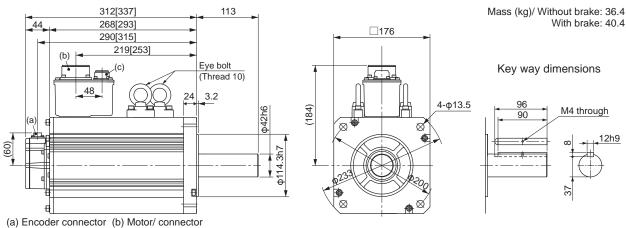
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.41.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



(c) Brake connector (only with brake)

* Figures in [] represent the dimensions with brake.

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

Specifications

			AC4	V00V
Motor model *1		IP65	_	_
Motor model		IP67	MDMEC14G1	MDMEC14S1
	Model	A5 series	MHDH	TB4A2
Applicable driver *2	No.	A5E series	_	_
	Fram	ne symbol	H-fr	ame
Power supply capacit	У	(kVA)	1	7
Rated output		(kW)	11	.0
Rated torque		(N·m)	7	0
Momentary Max. pea	k torqu	e (N·m)	17.5	
Rated current		(A(rms))	27.1	
Max. current (A(o-p))		101		
Regenerative brake	With	out option	No limit Note)2	
frequency (times/min) Note)1	DV0	PM20059	No limit Note)2	
Rated rotational spee	d	(r/min)	1500	
Max. rotational speed	l	(r/min)	2000	
Moment of inertia	With	out brake	212	
of rotor ($\times 10^{-4}$ kg·m ²)	Wi	th brake	220	
Recommended momentatio of the load and t			times	or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

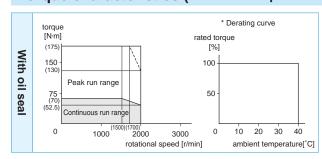
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

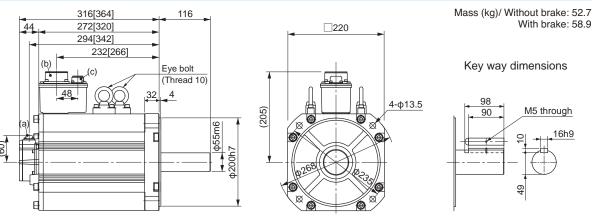
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



(a) Encoder connector (b) Motor/ connector (c) Brake connector (only with brake)

* Figures in [] represent the dimensions with brake.

IP65

IP67

A5E series

(kVA)

(kW)

(N·m)

(N·m)

(A(rms))

(A(o-p))

(r/min)

(r/min)

Without option

Without brake

With brake

Resolution per single turn

Model A5 series

Frame symbol

Specifications

Applicable driver *2 No.

Momentary Max. peak torque

frequency (times/min) Note)1 DV0PM20059

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Power supply capacity

Motor model *1

Rated output

Rated torque

Rated current

Max. current

Regenerative brake

Rated rotational speed

Max. rotational speed

Moment of inertia of rotor ($\times 10^{-4}$ kg·m²) Static friction torque (N·m)

Releasing time (ms) Note)4

Releasing voltage (DC) (V)

Exciting voltage (DC) (V)

During

During

assembly

Exciting current (DC) (A)

Engaging time (ms)

Brake specifications (For details, refer to P.137)

100 or more

300 or less

140 or less

1.08±10%

2 or more

24±2.4

4508

1470

1764

2254

686

/This brake will be released when it is energized.)

Do not use this for braking the motor in motion.

Permissible load (For details, refer to P.137)

Radial load P-direction (N)

Thrust load A-direction (N)

Thrust load B-direction (N)

Radial load P-direction (N)

· For details of Note 1 to Note 5, refer to P.137.

*2 The product that the end of driver model

designation has "E" is "positioning type".

Detail of model designation, refer to P.11.

operation Thrust load A, B-direction (N)

· Dimensions of Driver, refer to P.42.

*1 Motor specifications:

			AC4	V00V
BA-1	IP65		-	-
Motor model *1		IP67	MFME154G1	MFME154S1
	Model A5 series		MDDH	T3420
Applicable driver *2	No.	A5E series	-	-
	Fram	ne symbol	D-fr	ame
Power supply capacity	y	(kVA)	2	.4
Rated output		(kW)	1.	.5
Rated torque		(N·m)	7.	16
Momentary Max. peal	k torqu	e (N·m)	21.5	
Rated current		(A(rms))	3.8	
Max. current		(A(o-p))	16	
Regenerative brake	Without option		100	
frequency (times/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	18.2	
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	23.5	
Recommended mome ratio of the load and the			times	or less
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

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

• Permissible load (For details, refer to P.137)

	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
	docombry	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.137.
- · Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Specifications

Motor model *1		11 00			
Wotor model		IP67	MFME154G1□	MFME154S1	
	Model	A5 series	MDDH	T3420	
Applicable driver *2	No.	A5E series	_	_	
	Fran	ne symbol	D-frame		
Power supply capacit	у	(kVA)	2	.4	
Rated output		(kW)	1	.5	
Rated torque		(N·m)	7.	16	
Momentary Max. pea	k torqu	ie (N·m)	21	.5	
Rated current		(A(rms))	3.8		
Max. current		(A(o-p))	16		
Regenerative brake	Without option		10	100	
frequency (times/min) Note)1	DV0PM20048		No limit Note)2		
Rated rotational spee	d	(r/min)	2000		
Max. rotational speed	l	(r/min)	3000		
Moment of inertia	Without brake		18.2		
of rotor (×10 ⁻⁴ kg·m ²)	With brake		23.5		
Recommended mome ratio of the load and to			times	or less	
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072	

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

17-bit

Absolute

131,072

AC400V

MDMEC54G1 | MDMEC54S1 |

MHDHTB4A2

H-frame

22

15.0

95.5

224

33.1

118

No limit Note)2

No limit Note)2

1500

2000

302

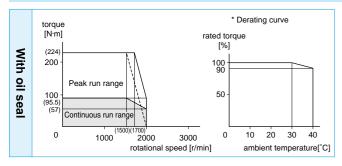
211

times or less

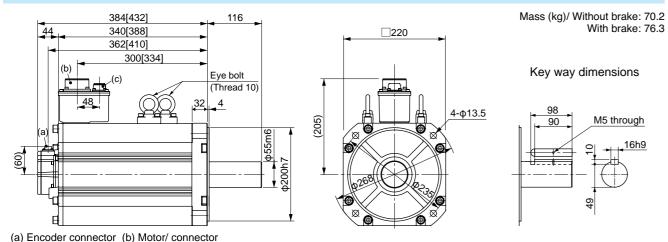
20-bit

Incremental

1,048,576



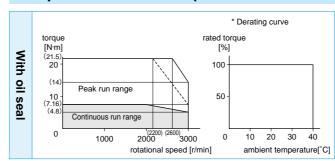
Dimensions



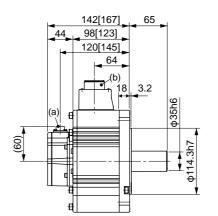
116

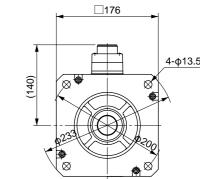
- * Figures in [] represent the dimensions with brake. (c) Brake connector (only with brake) <Cautions> Reduce the moment of inertia ratio if high speed response operation is required.
- Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

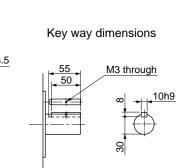
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions







Mass (kg)/ Without brake: 9.5

With brake: 12.5

- (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.

				AC4	V00V
Motor model	*1		IP65	-	_
Motor model			IP67	MFME454G1□	MFME454S1
		Model	A5 series	MFDH	TA464
Applicable dri	iver *2	No.	A5E series	_	-
		Fran	ne symbol	F-fr	ame
Power supply	capacit	y	(kVA)	6	.9
Rated output			(kW)	4	.5
Rated torque			(N·m)	21	.5
Momentary M	lax. pea	k torqu	e (N·m)	54.9	
Rated current	t		(A(rms))	12.4	
Max. current	urrent (A(o-p))		53		
Regenerative	brake	With	out option	67	
frequency (times	/min) Note)1	DV0PM20049×2		375	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotationa	al speed		(r/min)	3000	
Moment of inc	ertia	With	out brake	63.1	
of rotor (x10 ⁻⁴	⁴kg·m²)	Wi	th brake	70.9	
Recommended moment of inertia ratio of the load and the rotor Note)3		times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolut	ion per	single turn	1,048,576	131,072

Motor Specifications 400V MFME 4.5kW

• Brake specifications (For details, refer to P.137) /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.137)

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

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Specifications

			AC4	V00V	
Motor model *1	IP65		-	-	
Wotor moder		IP67	MFME254G1□	MFME254S1	
	Model	A5 series	MEDH	T4430	
Applicable driver *2	No.	A5E series	_	_	
	Fran	ne symbol	E-fr	ame	
Power supply capacit	y	(kVA)	3	.9	
Rated output		(kW)	2	.5	
Rated torque		(N·m)	11.9		
Momentary Max. pea	Momentary Max. peak torque (N·m)			30.4	
Rated current		(A(rms))	6.7		
Max. current		(A(o-p))	A(o-p)) 29		
Regenerative brake	With	out option	75		
frequency (times/min) Note)1	DV0	PM20049	No limit Note)2		
Rated rotational spee	d	(r/min)	2000		
Max. rotational speed		(r/min)	3000		
Moment of inertia	With	out brake	35.8		
of rotor (x10 ⁻⁴ kg·m ²)	Wi	th brake	45.2		
Recommended moment of inertia ratio of the load and the rotor Note)3			times	or less	
Rotary encoder speci	Rotary encoder specifications Note)5			17-bit Absolute	

1,048,576

 Brake specifications (For details, refer to P.137) /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

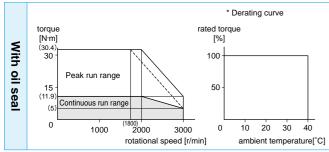
• Permissible load (For details, refer to P.137)

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.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

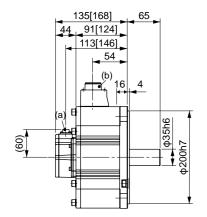
Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

131,072



Resolution per single turn

Dimensions



Key way dimensions M3 through

Mass (kg)/ Without brake: 13.1

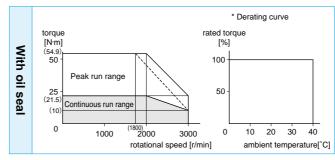
With brake: 17.2

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

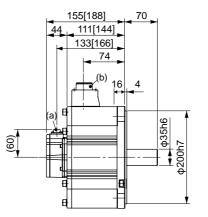
118

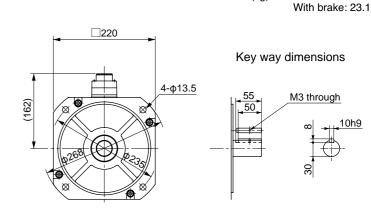
<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions





Mass (kg)/ Without brake: 18.2

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

			AC4	.00V	
Motor model *1	IP65		MGME094GC□	MGME094SC	
wotor model		IP67	MGME094G1□	MGME094S1	
	Model	A5 series	MDDH	T3420	
Applicable driver *2	No.	A5E series	MDDHT3420E	-	
	Fram	ne symbol	D-fra	ame	
Power supply capacit	у	(kVA)	1.	.8	
Rated output		(kW)	0.	.9	
Rated torque		(N·m)	8.8	8.59	
Momentary Max. pea	k torqu	e (N·m)	19.3		
Rated current		(A(rms))	3.8		
Max. current (A(o-p))			1	2	
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0PM20048		No limit Note)2		
Rated rotational spee	d	(r/min)	1000		
Max. rotational speed		(r/min)	2000		
Moment of inertia	With	out brake	6.70		
of rotor ($\times 10^{-4}$ kg·m ²)	Wit	th brake	7.99		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolut	ion per	single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

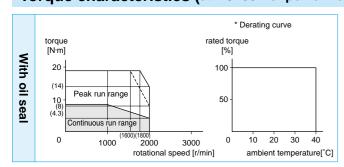
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

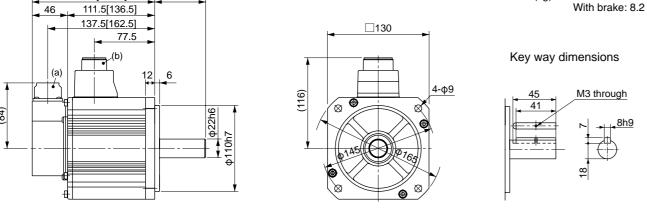


157.5[182.5]

Dimensions

(For IP67 motor, refer to P.134.)

Mass (kg)/ Without brake: 6.7



- (a) Encoder connector
- (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.

Specifications

			AC4	00V		
Mataras dal *1	IP65		5	MGME204GC□	MGME204SC	
Motor model *1	IP67		7	MGME204G1□	MGME204S1	
	Model	A5	series	MFDH	T5440	
Applicable driver *2	No.	A5l	E series	MFDHT5440E	_	
	Fran	Frame symbol		F-fra	ame	
Power supply capacit	у		(kVA)	3.	.8	
Rated output			(kW)	2	.0	
Rated torque			(N·m)	19).1	
Momentary Max. pea	k torqu	ıe	(N·m)	47.7		
Rated current		(A	(rms))	8.5		
Max. current		(/	۹(o-p))	30		
Regenerative brake	Without option		option	No limit Note)2		
frequency (times/min) Note)1	DV0PM20049×2			No limi	No limit Note)2	
Rated rotational spee	d		(r/min)	1000		
Max. rotational speed			(r/min)	2000		
Moment of inertia	Without brake		brake	30.3		
of rotor (×10 ⁻⁴ kg·m ²)	With brake		ake	31.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1,048,576	131,072		

• Brake specifications (For details, refer to P.137) /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

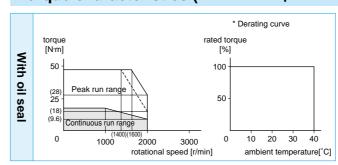
• Permissible load (For details, refer to P.137)

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

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

Motor Specifications 400V MGME 2.0kW [Middle inertia, Middle capacity]

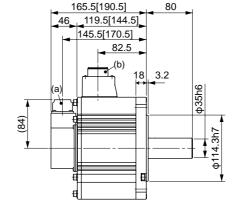


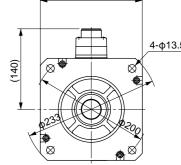
Dimensions

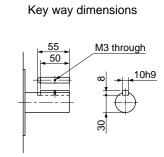
(For IP67 motor, refer to P.134.)

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









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

			AC4	00V
Motor model *1	IP65		MGME304GC□	MGME304SC□
Motor model		IP67	MGME304G1□	MGME304S1
	Model	A5 series	MFDH	TA464
Applicable driver *2	No.	A5E series	MFDHTA464E	-
	Fram	ne symbol	F-fra	ame
Power supply capacity	y	(kVA)	4	.5
Rated output		(kW)	3	.0
Rated torque		(N·m)	28.7	
Momentary Max. peal	k torqu	e (N·m)	71.7	
Rated current		(A(rms))	11.3	
Max. current (A(o-p))		4	0	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotational spee	d	(r/min)	1000	
Max. rotational speed		(r/min)	2000	
Moment of inertia	Without brake		48.4	
of rotor ($\times 10^{-4}$ kg·m ²)	With brake		49.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

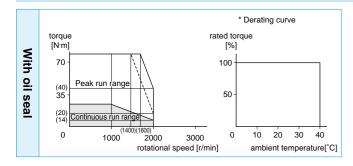
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

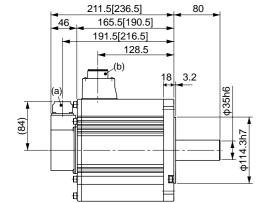
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

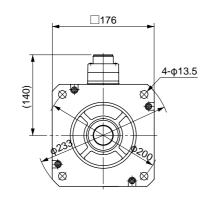


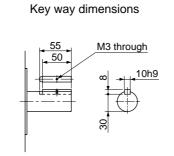
Dimensions

(For IP67 motor, refer to P.134.)

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







- (a) Encoder connector
- (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.

Specifications

			AC4	00V	
Motor model *1	IP65		-	-	
Motor model		IP67	MGME454G1□	MGME454S1	
	Model	A5 series	MFDH	TA464	
Applicable driver *2	No.	A5E series	MFDHTA464E	_	
	Frame symbol		F-fra	ame	
Power supply capacit	у	(kVA)	7.	.5	
Rated output		(kW)	4	.5	
Rated torque		(N·m)	43	43.0	
Momentary Max. pea	k torqu	e (N·m)	107		
Rated current		(A(rms))	14.8		
Max. current		(A(o-p))	55		
Regenerative brake	Without option		No limit Note)2		
frequency (times/min) Note)1	DV0PM20049×2		No limit Note)2		
Rated rotational spee	d	(r/min)	1000		
Max. rotational speed		(r/min)	2000		
Moment of inertia	Without brake		79.1		
of rotor (x10 ⁻⁴ kg·m ²)	With brake		84.4		
Recommended moment of inertia ratio of the load and the rotor Note)3		times	or less		
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	Resolution per single turn			131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

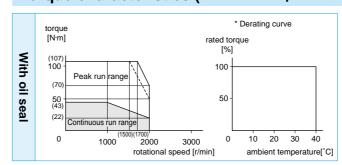
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

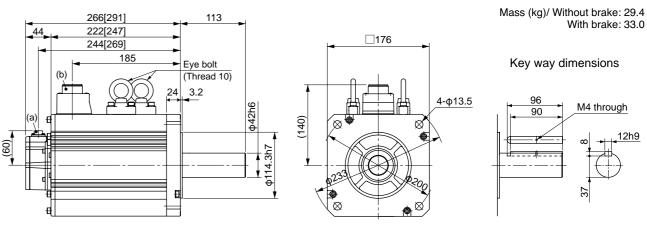
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



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

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			AC4	00V
Motor model *1	IP65		-	-
Motor moder		IP67	MGME604G1□	MGME604S1□
	Model	A5 series	MGDH	TB4A2
Applicable driver *2	No.	A5E series	_	_
	Fran	ne symbol	G-fr	ame
Power supply capacit	y	(kVA)	9.	.0
Rated output		(kW)	6	.0
Rated torque		(N·m)	57.3	
Momentary Max. pea	k torqu	e (N·m)	143	
Rated current		(A(rms))	19.4	
Max. current		(A(o-p))	74	
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0PM20049x3		No limit Note)2	
Rated rotational spee	d	(r/min)	1000	
Max. rotational speed		(r/min)	2000	
Moment of inertia	Without brake		101	
of rotor ($\times 10^{-4}$ kg·m ²)	With brake		107	
Recommended moment of inertia ratio of the load and the rotor Note)3		times	or less	
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

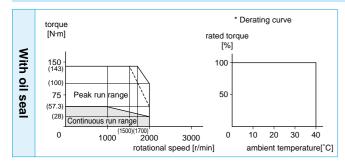
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

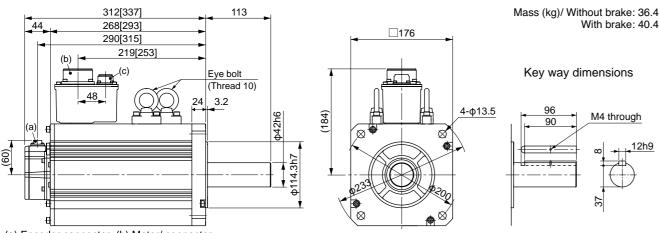
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588

- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.41.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC200V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions



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

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

Specifications

				AC4	V00V
Motor model *1		IP65		MHME104GC	MHME104SC
Motor model	•		IP67	MHME104G1	MHME104S1
		Model A5 series		MDDH	T2412
Applicable driv	/er *2	No.	A5E series	MDDHT2412E	-
		Frame symbol		D-frame	
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(kW)	1.	.0
Rated torque			(N·m)	4.	77
Momentary Ma	ax. peal	k torqu	e (N·m)	14.3	
Rated current (A(rms))		2.9			
Max. current (A(o-p))			1	2	
Regenerative b	orake	Without option		83	
frequency (times/	min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	ertia	With	out brake	24.7	
of rotor ($\times 10^{-4}$	kg·m²)	With brake		26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

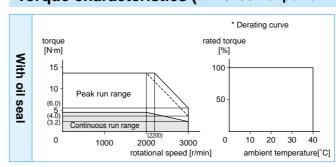
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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.137.
- Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

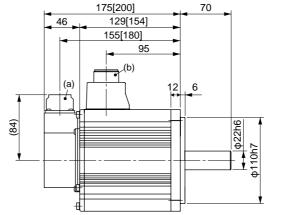
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

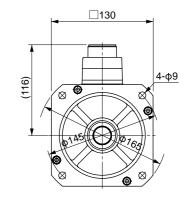


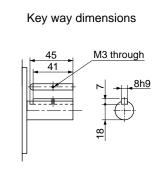
Dimensions

(For IP67 motor, refer to P.135.)

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







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

			AC4	00V
Motor model *1	IP65		MHME154GC	MHME154SC
Motor model *1		IP67	MHME154G1	MHME154S1
	Model	A5 series	MDDH	T3420
Applicable driver *2	No.	A5E series	MDDHT3420E	_
	Frame symbol		D-fra	ame
Power supply capacit	у	(kVA)	2.	3
Rated output		(kW)	1.	5
Rated torque		(N·m)	7.	16
Momentary Max. pea	k torqu	e (N·m)	21.5	
Rated current		(A(rms))	4.7	
Max. current		(A(o-p))	20	
Regenerative brake	Without option		22	
frequency (times/min) Note)1	DV0PM20048		130	
Rated rotational spee	d	(r/min)	20	00
Max. rotational speed		(r/min)	3000	
Moment of inertia	With	out brake	37.1	
of rotor (x10 ⁻⁴ kg·m ²)	Wit	h brake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

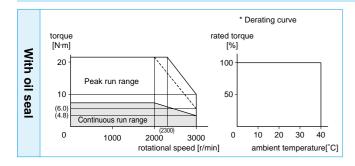
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

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

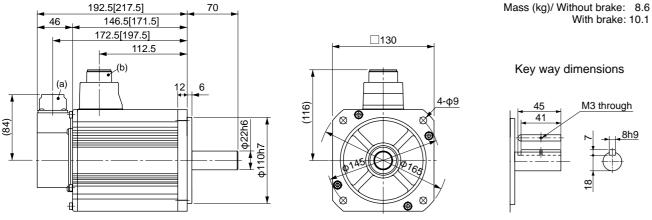
- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.39.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.135.)



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- (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

		AC4	V00V	
Motor model *1		IP65	MHME204GC	MHME204SC
Wotor model		IP67	MHME204G1	MHME204S1
	Model	A5 series	MEDH	T4430
Applicable driver *2	No.	A5E series	MEDHT4430E	-
	Fran	ne symbol	E-fra	ame
Power supply capaci	ty	(kVA)	3	.3
Rated output		(kW)	2	.0
Rated torque		(N·m)	9.	55
Momentary Max. pea	ak torqu	ie (N·m)	28.6	
Rated current		(A(rms))	5.5	
Max. current		(A(o-p))	2	4
Regenerative brake	Without option		45	
frequency (times/min) Note	DV0PM20048		142	
Rated rotational spe	ed	(r/min)	2000	
Max. rotational spee	d	(r/min)	3000	
Moment of inertia	With	out brake	57.8	
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encoder spec	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolu	tion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

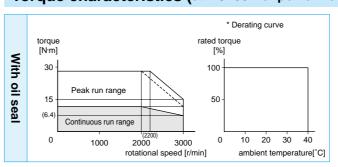
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

	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.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

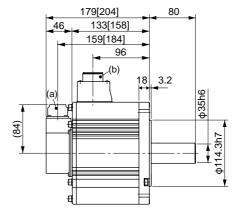
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

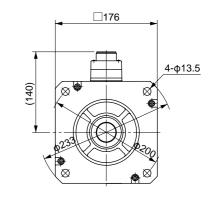


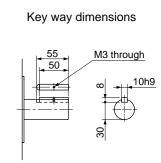
Dimensions

(For IP67 motor, refer to P.135.)

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







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

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			AC400V		
Mater adal *1	IP65		MHME304GC□	MHME304SC	
Motor model *1		IP67	MHME304G1	MHME304S1	
	Model	A5 series	MFDH	T5440	
Applicable driver *2	No.	A5E series	MFDHT5440E	_	
	Fram	ne symbol	F-fr	ame	
Power supply capacit	у	(kVA)	4	.5	
Rated output		(kW)	3	.0	
Rated torque		(N·m)	14	1.3	
Momentary Max. pea	k torqu	e (N·m)	43.0		
Rated current		(A(rms))	8.0		
Max. current		(A(o-p))	34		
Regenerative brake	With	out option	19		
frequency (times/min) Note)1	DV0PM20049×2		142		
Rated rotational spee	d	(r/min)	2000		
Max. rotational speed		(r/min)	3000		
Moment of inertia	With	out brake	90.5		
of rotor ($\times 10^{-4}$ kg·m ²)	With brake		92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolut	ion per	single turn	1,048,576	131,072	

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

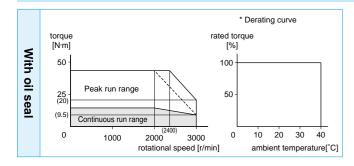
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

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

- · For details of Note 1 to Note 5, refer to P.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

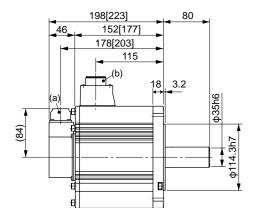
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

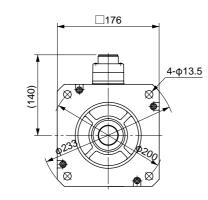


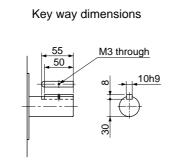
Dimensions

(For IP67 motor, refer to P.135.)

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







- (a) Encoder connector
- (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.

Specifications

			AC4	V00V		
Motor model *1			IP65		MHME404GC	MHME404SC
iviotor model			IP67		MHME404G1	MHME404S1
		Model	A5 series		MFDH	TA464
Applicable dri	ver *2	No.	A5E serie	es	MFDHTA464E	_
		Fram	ne symbo	ıl	F-fra	ame
Power supply	capacit	у	(kVA	١)	6	.8
Rated output			(kV	V)	4	.0
Rated torque			(N·n	n)	19).1
Momentary M	ax. pea	k torqu	e (N·m	n)	57.3	
Rated current			(A(rms))	10.5	
Max. current			(A(o-p))	45	
Regenerative I	brake	With	out optior	า	17	
frequency (times		DV0PM20049×2		125		
Rated rotation	nal spee	d	(r/mir	า)	2000	
Max. rotationa	al speed		(r/mir	า)	3000	
Moment of ine	ertia	Without brake)	112	
of rotor (x10 ⁻⁴	kg·m²)	With brake			114	
Recommended moment of inertia ratio of the load and the rotor Note)3)3	5 times	or less		
Rotary encode	Rotary encoder specifications Note)5)5	20-bit Incremental	17-bit Absolute
	Resolut	ion per	single tu	rn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

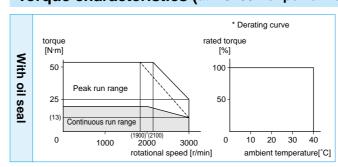
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

	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.137.
- Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

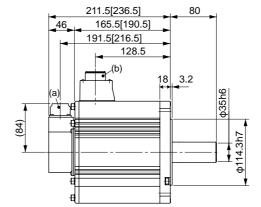
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)

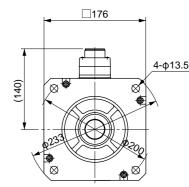


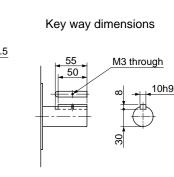
Dimensions

(For IP67 motor, refer to P.135.)

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







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

			AC4	100V
Motor model *1	IP65		MHME504GC	MHME504SC
Motor model		IP67	MHME504G1□	MHME504S1
	Model	A5 series	MFDHTA464	
Applicable driver *2	No.	A5E series	MFDHTA464E	-
	Fran	ne symbol	F-fra	ame
Power supply capacit	y	(kVA)	7.	.5
Rated output		(kW)	5	.0
Rated torque		(N·m)	23	3.9
Momentary Max. pea	k torqu	e (N·m)	71.6	
Rated current		(A(rms))	13.0	
Max. current		(A(o-p))	55	
Regenerative brake	Without option		10	
frequency (times/min) Note)1	DV0PM20049×2		76	
Rated rotational spee	d	(r/min)	2000	
Max. rotational speed		(r/min)	3000	
Moment of inertia	Without brake		162	
of rotor (x10 ⁻⁴ kg·m ²)	With brake		164	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less	
Rotary encoder speci	ficatior	Note)5	20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

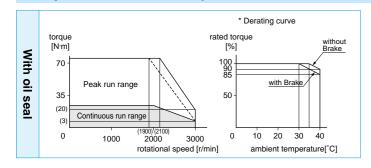
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.137)

. .	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.137.
- · Dimensions of Driver, refer to P.40.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

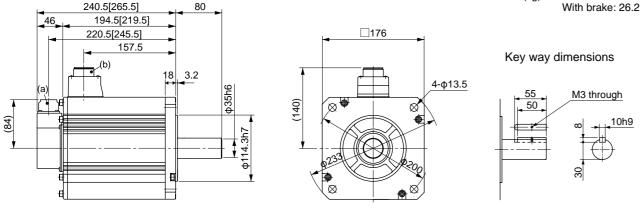
Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.135.)

Mass (kg)/ Without brake: 23.0



- (a) Encoder connector
- (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.

Specifications

			AC4	00V
Motor model *1	IP65		-	-
Motor moder		IP67	MHME754G1	MHME754S1
	Model	A5 series	MGDH	TB4A2
Applicable driver *2	No.	A5E series	_	_
	Frame symbol		G-fr	ame
Power supply capacit	у	(kVA)	9.	.0
Rated output		(kW)	7.	.5
Rated torque		(N·m)	47	7.8
Momentary Max. pea	k torqu	e (N·m)	119	
Rated current		(A(rms))	22.0	
Max. current		(A(o-p))	8	3
Regenerative brake	Without option		No limit Note)2	
frequency (times/min) Note)1	DV0PM20049×3		No limit Note)2	
Rated rotational spee	d	(r/min)	1500	
Max. rotational speed		(r/min)	3000	
Moment of inertia	Without brake		273	
of rotor (×10 ⁻⁴ kg·m ²)	Wi	th brake	279	
Recommended moment of inertia ratio of the load and the rotor Note)3		times	or less	
Rotary encoder speci	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolut	ion per	single turn	1,048,576	131,072

• Brake specifications (For details, refer to P.137) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

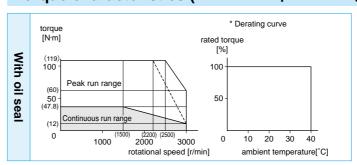
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10%
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.137)

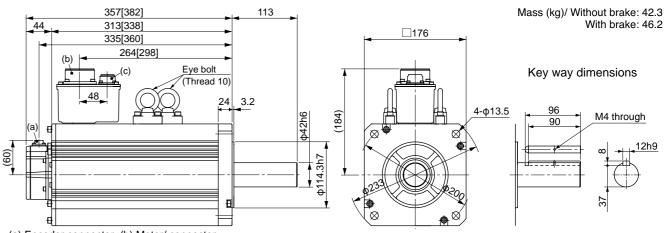
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.137.
- Dimensions of Driver, refer to P.41.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "positioning type". Detail of model designation, refer to P.11.

Torque characteristics (at AC400V of power voltage < Dotted line represents the torque at 10% less supply voltage.>)



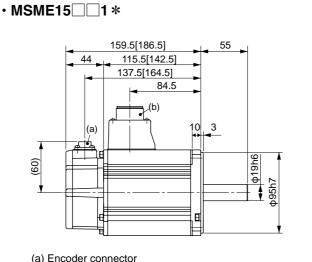
Dimensions



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

• MSME10 □ 1 * 141[168] 97[124] 119[146] 66

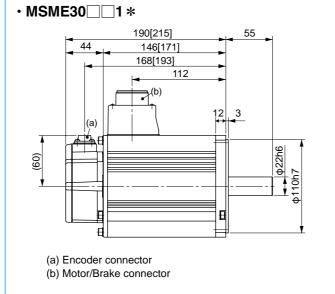
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



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

MSME20□□1* 178.5[205.5] 134.5[161.5] 156.5[183.5] 103.5

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



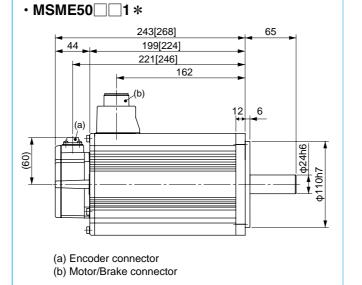
* Figures in [] represent the dimensions with brake.

MSME40□□1* 164[189] 186[211] (a) Encoder connector

- (b) Motor/Brake connector

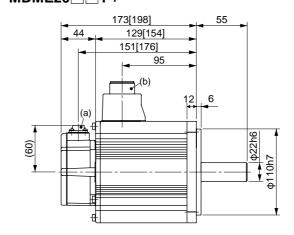
* For motor specifications, refer to IP65 motor page.

* Figures in [] represent the dimensions with brake.

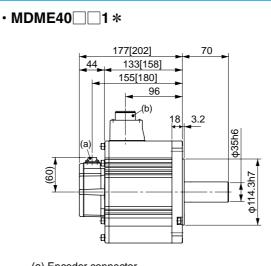


* Figures in [] represent the dimensions with brake.

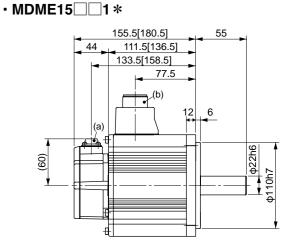
• MDME10□□1 * 94[119] 116[141] 60 (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. MDME20□□1 * 129[154]



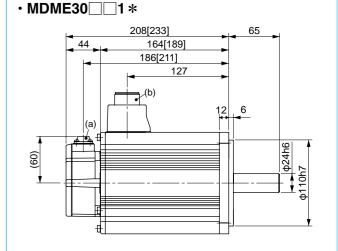
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



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



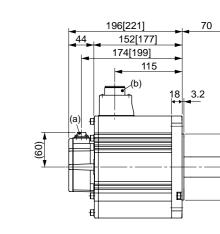
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



(a) Encoder connector

• MDME50 □ 1 *

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

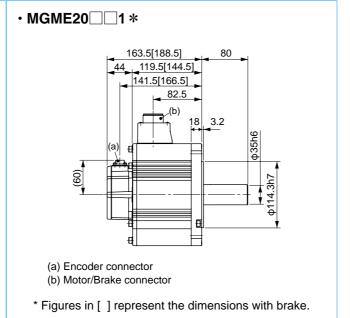


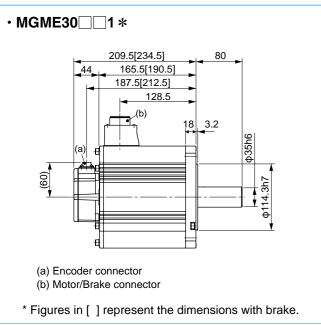
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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

• MGME09□□1 * 155.5[180.5] 111.5[136.5] 133.5[158.5] 77.5

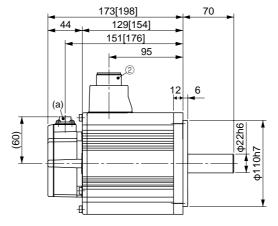
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.





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• MHME10□□1 *

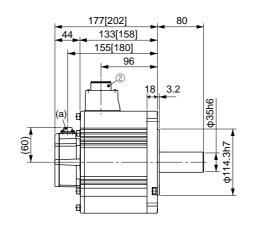


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

190.5[215.5] 146.5[171.5] 168.5[193.5] 112.5

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

MHME20□□1*

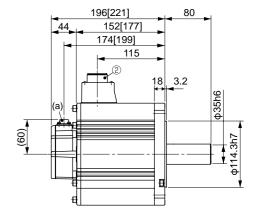


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

MHME30□□1*

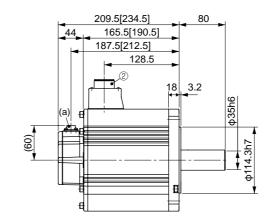
Dimensions IP67 motor (MHME 200V/ 400V type)

• MHME15□□1 *



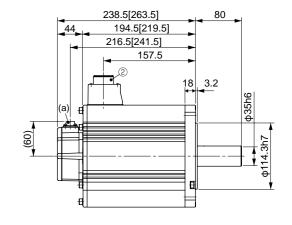
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

• MHME40 □ □ 1 *



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

MHME50□□1*



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

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

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

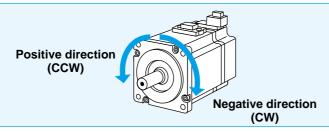
Environmental Conditions

Item		Conditions				
Ambient temperature *1		0°C to 40°C (free from freezing)				
Ambient hu	midity	20% to 85% RH (free from condensation)				
Storage ter	nperature *2	-20°C to 65°C (Max.temperature guarantee: 80°C for 72 hours free from condensation ^{*5})				
Storage hu	midity	20% to 85% RH (free from condensation 5)				
Vibration Motor only		50W to 5.0kW : Lower than 49m/s² (5G) at running, 24.5m/s² (2.5G) at stall 6.0kW to 15.0kW: Lower than 24.5m/s² (2.5G) at running, 24.5m/s² (2.5G) at stall				
Impact	Motor only	Lower than 98m/s ² (10G)				
		MSMD, MHMD (except rotating portion of output shaft and readwire end.)				
Enclosure rating (Motor	IP65 *3	M * ME (IP65 motor: 0.9kW or more) (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)				
only)	IP67 *3*4	M * ME IP67 motor (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)				
Altitude		Lower than 1000m				

- *1 Ambient temperature to be measured at 5cm away from the motor.
- *2 Permissible temperature for short duration such as transportation.
- *3 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5). Do not use these motors in application where water proof performance is required such as continuous wash-down operation.
- *4 This condition is applied when the connector mounting screw are tightened to the recommended tightening torque.
- *5 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

<Note>

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



Notes on [Motor specification] page

Note) 1. [At AC100V 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 AC115V (at 100V of the main voltage).
 If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

[At AC200V 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 AC230V (at 200V of the main voltage).
 If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

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[At AC400V of power voltage]

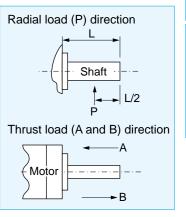
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- 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 AC460V (at 400V of the main voltage).
 If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/460) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
- Note) 2. If the effective torque is within the rated torque, there is no limit in generative brake.
- Note) 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
- Note) 4. Releasing time values represent the ones with DC-cutoff using a varistor.
- Note) 5. The 17-bit absolute encoder can also be used as a 17-bit incremental encoder.

Permissible Load at Output Shaft

The radial load is defined as a load applied to the output shaft in the right-angle direction. This load is generated when the gear head is coupled to the machine using a chain, belt, etc., but not when the gear head is directly connected to the coupling. As shown in the right figure, the permissible value is determined based on the load applied to the L/2 position of the output shaft. The thrust load is defined as a load applied to the output shaft in the axial direction.

Because the radial load and thrust load significantly affect the life of the bearing, take care not to allow the load during operation to exceed the permissible radial load and thrust load shown in the table below.



Built-in Holding Brake

In the applications where the motor drives the vertical axis, this brake would be used to hold and prevent the work (moving load) from falling by gravity while the power to the servo is shut off.

Use this built-in brake for "Holding" purpose only, that is to hold the stalling status. Never use this for "Brake" purpose to stop the load in motion.

Output Timing of BRK-OFF Signal

- For the brake release timing at power-on, or braking timing at Servo-OFF/Servo-Alarm while the motor is in motion, refer to the Operating Instructions (Overall).
- With the parameter, Pr4.38 (Setup of mechanical brake action while the motor is in motion), you can set up a time between when the motor enters to a free-run from energized status and when BRK-OFF signal turns off (brake will be engaged), when the Servo-OFF or alarm occurs while the motor is in motion. For details, download a copy of the instruction manual from our website.

<Note>

- 1. The lining sound of the brake (chattering and etc.) might be generated while running the motor with built-in brake, however this does not affect any functionality.
- 2. Magnetic flux might be generated through the motor shaft while the brake coil is energized (brake is open). Pay an extra attention when magnetic sensors are used nearby the motor.

Specifications of Built-in Holding Brake

Motor series	Motor output	Static friction torque N·m	Rotor inertia x 10 ⁻⁴ kg·m²	Engaging time ms	Releasing time ms	Exciting current DC A (at cool-off)	Releasing voltage	Permissible work (J) per one braking	Permissible total work x 10 ³ J	Permissible angular acceleration rad/s ²	
	50W, 100W	0.29 or more	0.002	35 or less	20 or less	0.3		39.2	4.9		
MSMD	200W, 400W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1V or more	137	remissible of total work x 10°J accept 44.1 accept 44.1 accept 44.1 accept 7 accept	30000	
	750W	2.45 or more	0.075	70 or less	20 or less	0.42		196	147		
	50W, 100W	0.29 or more	0.002	35 or less	20 or less	0.3		39.2	4.9		
	200W, 400W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1V or more	137	44.1	30000	
	750W(200V)	2.45 or more	0.075	70 or less	20 or less	0.42		196	147		
MONT	750W(400V)	2.5 or more				0.7					
MSME	1.0kW, 1.5kW, 2.0kW	7.8 or more	0.33	50 or less	15 or less (100)	0.81	DC2V	392	490	10000	
	3.0kW	11.8 or more		80 or less			or more			10000	
	4.0kW, 5.0kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200		
	400W(400V), 600W(400V)	2.5 or more		50 or less	15 or less	0.7		392	490		
	1.0kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000	
	1.5kW, 2.0kW	13.7 or more		100 or less	50 or less	0.79	DC2V	1176	1500		
MDME	3.0kW	16.2 or more		110 or less	(130)	0.9	or more	1470	2200		
	4.0kW, 5.0kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440	
	7.5kW	58.8 or more		150 or less	(200) 0.59 5 50 or less (130) 0.79 DC2V or more 1176 1470 2200 25 or less (200) 1.3 1372 2900 5 50 or less 1.4 140 or less 1.08 2000 4000 35 or less 0.83 100 or less 0.75	5000					
	11.0kW, 15.0kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000	
	1.5kW	7.8 or more	4.7	80 or less	35 or less	0.83		1372	2900		
MFME	2.5kW	21.6 or more	8.75	150 or less	100 or less	0.75		1/170	1500	10000	
	4.5kW	31.4 or more	0.75	100 01 1033	100 01 1033	0.75		1470	147 4.9 44.1 147 490 2200 490 780 1500 2200 2900 1500 2200 1500 2900 1500 2900 1500 2100		
	0.9kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79		1176	1500	10000	
MGME	2.0kW	24.5 or more		80 or less	25 or less (200)	1.3	DC2V or more			5440	
	3.0kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	of more	1372	2900	3440	
	4.5kW, 6.0kW				50 or less				147 4.9 44.1 147 490 2200 490 780 1500 2200 2900 1500 2200 1500 2900 44.1 147 780 1500	5000	
MHMD	200W, 400W	1.27 or more	0.018	50 or less	15 or less	0.36	DC1V	137	44.1	30000	
IVII IIVID	750W	2.45 or more	0.075	70 or less	20 or less	0.42	or more	196	147	30000	
	1.0kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000	
MHME	1.5kW	13.7 or more	1.00	100 or less	50 or less (130)	0.79	DC2V or more	1176	1500	10000	
	2.0kW~5.0kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3	of more	1372	Permissible total work x 10³J 4.9 44.1 147 4.9 44.1 147 490 2200 490 780 1500 2200 2900 1500 2200 1500 2900 1500 2900 1500 2100	5440	
	7.5kW	58.8 or more		150 or less	50 or less	1.4				5000	

- Excitation voltage is DC24V±10% (Large type motor) and DC24V±5% (Small type motor).
- Releasing time values represent the ones with DC-cutoff using a varistor. Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)
- · Above values (except static friction torque, releasing voltage and excitation current) represent typical values.
- Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.
- Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

Motors with Gear Reducer Type and Specifications

Motor types with gear reducer







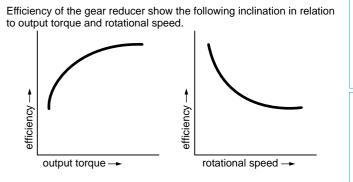
MSMD 100W to 750W



MHMD 200W to 750W

eduction ratio		Type of				
	100	200	400	750	reducer	
1/5	•	•	•	•		
1/9	•	•	•	•	For high	
1/15	•	•	•	•	precision	
1/25	•	•	•	•		

^{*} MHMD 100W is not prepared.



Specifications of motor with gear reducer

	Items	Specifications			
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer			
	Composition of gear	3 minutes or smaller (initial value) at output shaft of the reducer Planetary gear 65% to 85% Grease lubrication Same direction as the motor output shaft Flange mounting			
	Gear efficiency	65% to 85%			
0	Lubrication	Grease lubrication			
Gear reducer	Rotational direction at output shaft	Same direction as the motor output shaft			
	Mounting method	Flange mounting			
	Permissible moment of inertia of the load (conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor			
	Protective structure	IP44 (at gear reducer)			
	Ambient temperature	0 to 40°C (free from condensation)			
Environment	Ambient humidity	85%RH (free from condensation) or less			
Environment	Vibration resistance	49m/s ² or less (at motor frame)			
	Impact resistance	98m/s² or less			

			Motor ra	ated
Symbol	Туре		Symbol	Spe
MSMD	Low iner		Symbol 01 02 04 08	
	100W to 75	50W	02	
MSME	Low iner		04	
			08	
MHMD	High iner 200W to 75			

Motor ra	ated output
Symbol	Specifications
01	100W
02	200W
04	400W
08	750W

Voltage specifications Symbol Rated output 100V 200V

Rotary encoder specifications

i iotai y ci	icodei specifica	lions		
Symbol	Format	Pulse counts	Resolution	Wire
G	Incremental	20-bit	1,048,576	5
S	Absolute	17-bit	131,072	7

* S: can be used in incremental.

2N

Motor types with gear reducer Symbol Reduction Motor output (W)												
Cumbal		Motor output (W)										
Symbol	ratio	100	200	400	750							
1N	1/5	•	•	•	•							

Type of reducer

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

Motor structure

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

The combination of the driver and the motor

	100V		200V		
Motor output	Part No. of motor	Single phase, 100V	Part No. of motor	3-phase, 200V	
	with reducer	Part No. of driver	with reducer	Part No. of driver	
100W	MSME011□□□N	MADHT1107	MSME012□□□N	MADHT1505	
10000	MSMD011□□□N	MADHT1107E	MSMD012□□□N	MADHT1505E	
200W	MSME021□□□N MSMD021□□□N	MBDHT2110	MSME022□□□N MSMD022□□□N	MADHT1507	
20000	MHMD021 N	MBDHT2110E	MHMD022 N	MADHT1507E	
400W	MSME041 N	MCDHT3120	MSME042□□□N MSMD042□□□N	MBDHT2510	
40000	MSMD041 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	MCDHT3120E	MHMD042 N	MBDHT2510E	
750W	_	_	MSME082	MCDHT3520	
75000	_	_	MSMD082 N	MCDHT3520E	

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Table of motor specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque		r shaft)		ISS w/ brake	Permissible radial load	Permissible thrust load
		(W)		(W)	(r/min)	(r/min)	(N·m)	(Nam)	J(x10 ⁻⁴		w/o brake (k		(N)	(N)
	MSME01 🗆 🗆 1N	(VV)	1/5	75	600	1200	1.18	3.72	0.091	0.094	1.0	1.2	490	245
	MSME01 2N	100	1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
	MSME01 3N		1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
	MSME01 AN		1/25	80	120	240	6.27	19.0	0.0885	0.0915	2.15	2.35	1670	833
	MSME02 III 1N		1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
2	MSME02 CC 2N		1/9	132	333	666	3.72	11.3	0.408	0.428	2.48	2.9	1180	588
MSME	MSME02 CO 3N	200	1/15	132	200	400	6.27	18.8	0.44	0.46	2.88	3.3	1470	735
	MSME02		1/25	140	120	240	11.1	33.3	0.428	0.448	2.88	3.3	1670	833
o ¥	MSME04 DDD 1N		1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia	MSME04 2N		1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
rtia	MSME04 3N	400	1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
	MSME04		1/25	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 2N		1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 3N	750	1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082 4N		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01 IN		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	100	1/15	80	200	333	3.72	11.4	0.086	0.089	1.17	1.38	784	392
	MSMD01 4N		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
	MSMD02		1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
3	MSMD02		1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02	200	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
	MSMD02 UUU 4N		1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low inerti	MSMD04 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
iner	MSMD04 □□□ 2N	400	1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
tia	MSMD04 🗆 🗆 3N	400	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.56	0.58	4.4	4.9	2060	1030
	MSMD082 🗆 🗆 1N		1/5	672	600	900	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSMD082 □□ 3N	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 🗆 🗆 1N		1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02 DD 2N	200	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02 🗆 🗆 3N	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
₹	MHMD02 🗆 🗆 4N		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04 🗆 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
Ī	MHMD04 2N	400	1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
gh i	MHMD04 🗆 🗆 3N	700	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
High inertia	MHMD04 $\square\square\square$ 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	. 00	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 $\square \square \square$ of the motor model number. Refer to "Model designation".

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^{*} MHMD 100W is not prepared.

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

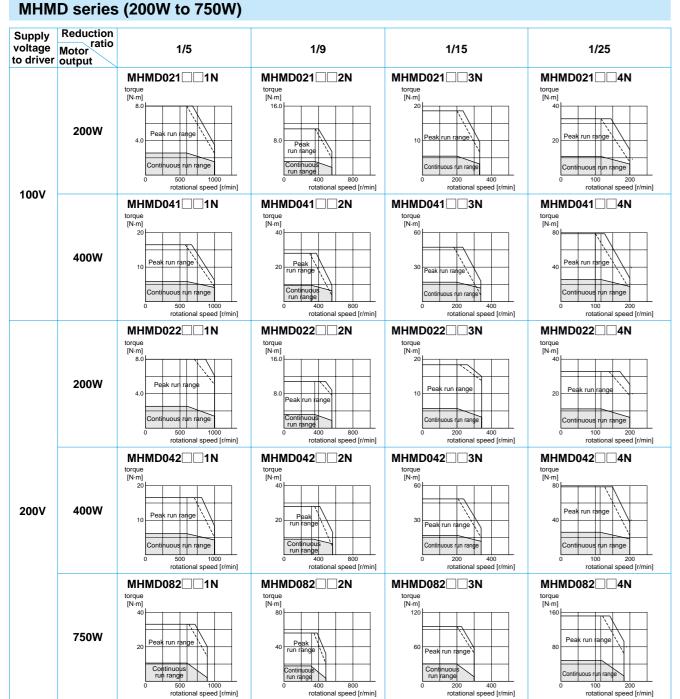
MSME series (100W to 750W)

MSM	E series	(100W to 750W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
	100W	MSME011 1N torque [N·m] 4.0 Peak run range Continuous run range 500 1000 rotational speed [r/min]	MSME011 2N torque [N-m] 8.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME011 3N torque [N·m] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME011 4N torque [N-m] 20 Peak rur range 10 Continuous run range 0 100 200 rotational speed [r/min]
100V	200W	MSME021 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSME021 2N torque [N-m] 16.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME021 3N torque [N·m] 20 Peak run range Continuous run range 0 200 400 rotational speed [//min]	MSME021 4N torque [N·m] 40 Peak run tange 20 Continuous run range 0 100 200 rotational speed [r/min]
	400W	MSME041 1N torque [N-m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MSME041 2N torque [N·m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME041 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [//min]	MSME041 4N torque [N·m] 80 Peak run range 40 Continuous run tange 0 100 200 rotational speed [r/min]
	100W	MSME012 1N torque [N·m] 4.0 Peak run range 2.0 Continuous run ange 0 500 1000 rotational speed [r/min]	MSME012 2N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 400 800 rotational speed [r/min]	MSME012 3N torque [N·m] 16.0 Peak rur range Continuous run range 0 200 400 rotational speed [//min]	MSME012 4N torque [N·m] 20 Peak rur range 10 Continuous tun range 0 100 200 rotational speed [t/min]
2004	200W	MSME022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSME022 2N torque [N-m] 16.0 Peak run tange Continuous run range 0 400 800 rotational speed [r/min]	MSME022 3N torque [N·m] 20 Peak rur range 0 200 400 rotational speed [r/min]	MSME022 4N torque [N-m] 40 Peak rur range 20 Continuous tun range 0 100 200 rotational speed [r/min]
200V	400W	MSME042 1N torque [N-m] 20 Peak run range Continuous un range 0 500 1000 rotational speed [r/min]	MSME042 2N torque [N·m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME042 3N torque [N-m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME042 4N torque [N·m] 80 Peak rur range 40 Continuous run range 0 100 200 rotational speed [r/min]
	750W	MSME082 1N torque [N·m] 40 Peak run range Continuous run range 500 1000 rotational speed [r/min]	MSME082 2N torque [N-m] 80 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME082 3N torque [N·m] 120 Peak run tange Continuous nu range 0 200 400 rotational speed [r/min]	MSME082 4N torque [N·m] 160 Peak rur range 0 100 200 rotational speed [r/min]

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

ot	,	ii Ocai itcaacc	Torque on	aracteristics o	
MCM	D corioc	(100W to 750W)			
INIQINI	D series	(100W to 750W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
	100W	MSMD011	torque [N-m] 8.0 Peak 4.0 Continupus run range 0 400 800 rotational speed [r/min]	MSMD011 3N torque [N-m] 16.0 Peak run lange Cortinuols run range 0 200 400 rotational speed [r/min]	MSMD011 4N torque [N·m] 20 Peak run range 10 Continuous run range 0 100 200 rotational speed [r/min]
100V	200W	MSMD021 1N torque [N-m] 8.0 Peak run range 0 500 1000 rotational speed [r/min]	torque [N-m] 16.0 Peak run tange Continuous run tange 0 400 800 rotational speed [r/min]	MSMD021 3N torque [N-m] 20 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSMD021 4N torque [N-m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	400W	MSMD041 1N torque N·m 20 Peak run range Continuous run range 500 1000 rotational speed [r/min]	torque [N·m] 20 Peak run lange 0 400 rotational speed [r/min]	MSMD041 3N torque [N-m] 60 Reak run range Continuous run range 0 200 400 rotational speed [r/min]	MSMD041 4N torque [N·m] 80 Peak run range Continuous run range 100 rotational speed [r/min]
	100W	MSMD012 1N torque [N·m] 4.0 Peak run range 2.0 Continuous run range 0 500 1000 rotational speed [r/min]	torque [N-m] 8.0 Peak run range 4.0 Continuo is run range 0 400 800 rotational speed [r/min]	MSMD012 3N torque [N-m] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSMD012 4N torque [N·m] 20 Peak run lange 10 Continuous lun range 0 100 200 rotational speed [//min]
200V	200W	MSMD022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	torque [N·m] 16.0 Peak run tange Continuou run tange 0 400 800 rotational speed [r/min]	MSMD022 3N torque [N·m] 20 Peak run range 10 Contiruous run range 0 200 400 rotational speed [r/min]	MSMD022 4N torque [N·m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
200 V	400W	MSMD042 1N torque [N-m] 20 Peak run range 10 Continuous run range 0 500 1000 rotational speed [r/min]	torque [N-m] 20 Peak run range continuous run range contational speed [r/min]	MSMD042 3N torque [N-m] 60 Peak run range 0 200 400 rotational speed [r/min]	MSMD042 4N torque [N·m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750W	MSMD082 1N torque [N·m] 40 Peak run range 1 Continuous run range 500 1000 rotational speed [r/min]	MSMD082 2N torque [N-m] 80 Peak 40 run range Continuous run range 0 400 800 rotational speed [r/min]	MSMD082 3N torque [N-m] 120 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSMD082 4N torque [N·m] 160 Peak run range Continuous run range 100 rotational speed [r/min]

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

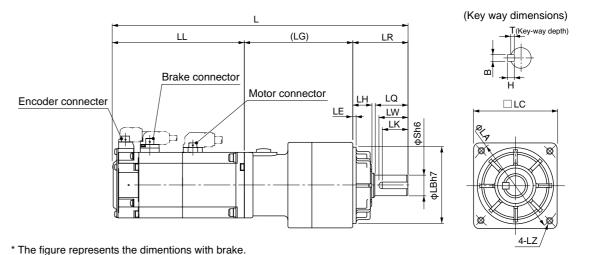


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Dotted line represents the torque at 10% less supply voltage.

Motors with Gear Reducer Dimensions of Motor

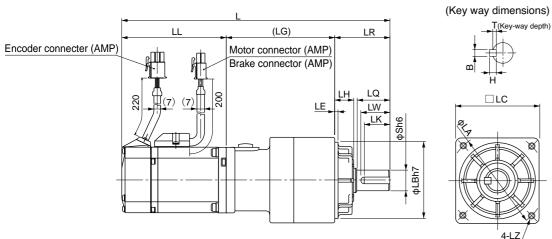
MSME series



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	
			191.5	92														
MSME01 1N		1/5	221.5	122										07.5				
MCME04		4/0	191.5	92	20	20	F0	F0	60	40	40	M5	40	67.5		4440	2.5	
MSME01 2N	100	1/9	221.5	122	32	20	52	50	60 12	12	10	Depth 12	18			4×4×16	4×4×16 2.5	
MSME01 3N	100	1/15	202	92										78				
		1/13	232	122										70				
MSME01		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5	
		1/25	264	122	122	30	70	70	90	19	17	20	20	92		0x0x22	3.5	
MSME02		1/5	184	79.5	32	20	52	50	60	12	10	M5	18	72.5		4x4x16	2.5	
WISWIEU2 IN	220.5 116	32	20	52	50	60	12	10	Depth 12	18	12.5		4×4×16	2.5				
MSME02	□□2N 1/9 219 7	79.5										89.5	3					
WSWEU2ZN	200	1/9	255.5	116										89.5	3			
MSME02	200	1/15	229.5	79.5														
WISWIEU2SIN		1/13	266	116										100				
MSME02	-		1/25	229.5	79.5										100			
WISWIEUZ4N		1/25	266	116	50	30	78	70	90	19	17	M6 Depth	26			6×6×22	3.5	
MSME04□□□1N			1/5	238.5	99	50	30	70	70	30	13	''	20	20			UNUNZZ	3.3
momeo+n		1/0	275	135.5										89.5				
MSME04 2N		1/9	238.5	99										00.0				
IIIOIIIEO+	400	.,,	275	135.5														
MSME04	400	1/15	249	99										100				
		,,,,	285.5	135.5														
MSME04		1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4	
			300.5	135.5								20						
MSME082 1N		1/5	255.7	112.2	50	30	78	70	90	19	17	M6 Depth	26	93.5	3	6×6×22	3.5	
		.,.	291.7	148.2								20			_			
MSME082 2N		1/9	270.7	112.2										97.5				
	750	1/9 306.7	306.7	148.2										0.10) 4	
MSME082 3N		1/15	283.2	112.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30		
			319.2	148.2			-0				4 18	8 Depth 20		110	_	2		
MSME082 4N		1/25	283.2	112.2														
		.,_0	319.2	148.2														

Upper column: without brake Lower column: with brake

MSMD series

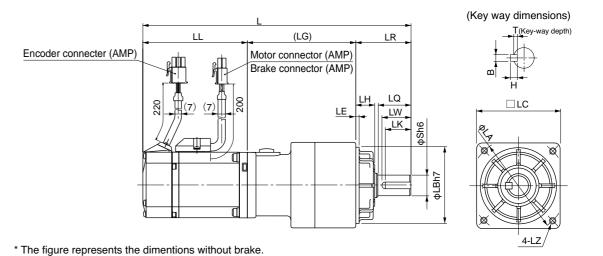


^{*} The figure represents the dimentions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т	
MSMD01		1/5	191.5	92														
			221.5 191.5	122 92								M5		67.5				
MSMD01□□□2N		1/9	221.5	122	32	20	52	50	60	12	10	Depth 12	18			4×4×16	2.5	
	100		202	92								12						
MSMD01□□□3N		1/15	232	122										78				
MCMD04		4/05	234	92	50	20	70	70	00	40	47	M6	200	00		0000	2.5	
MSMD01 — 4N		1/25	264	122	50	30	78	70	90	19	17	Depth 20	26	92		6×6×22	3.5	
MSMD02		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5	
MOMBOZ 114		1/3	220.5	116	52	20	52	30	00	12	10	12	10	12.5		727210	2.0	
MSMD02 2N		1/9	219	79.5										89.5	3			
	200		255.5	116														
MSMD02□□□3N		1/15	229.5	79.5														
			266 229.5	116 79.5										100				
MSMD02 U 4N		1/25	266	116								M6						
				238.5	99	50	30	78	70	90 1	19	17	Depth 20	26			6×6×22	3.5
MSMD04		1/5	275	135.5								20		89.5				
MCMDO4		1/0	238.5	99														
MSMD04□□□2N	400	1/9	275	135.5														
MSMD04	400	1/15	249	99										100				
MOMDO4SI		1/10	285.5	135.5										100				
MSMD04□□□4N		1/25	264	99	61	40	98	90	115	24	18	M8 Depth	35	104	5	8×7×30	4	
			300.5	135.5								20						
MSMD082□□1N		1/5	255.7	112.2	50	30	78	70	90	19	17	M6 Depth	26	93.5	3	6×6×22	3.5	
			292.7	149.2								20						
MSMD082□□2N		1/9	270.7 307.7	112.2 149.2										97.5				
	750		283.2	112.2								M8						
MSMD082□□3N		1/15	320.2	149.2	61	40	98	90 115	115 24	24	24 18	B Depth	35		5	8×7×30	4	
			283.2	112.2							20		110					
MSMD082□□4N		1/25	320.2	149.2														

Upper column: without brake Lower column: with brake

MHMD series



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
MHMD02		1/5	203.5	99	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5
WITHIDUZ IN		1/3	240	135.5	32	20	52	50	60	12	10	12	10	12.5		484810	2.5
MHMD02		1/9	238.5	99										89.5			
	200	1/3	275	135.5										00.0			
MHMD02		1/15	249	99													
			285.5	135.5										100			
MHMD02 4N		1/25	249	99									26		3		3.5
			285.5	135.5	50	30	78	70	90	19	17	M6 Depth 20				6×6×22	
MHMD04		1/5	258	118.5													
			294.5 258	155 118.5									89.5				
$MHMD04 \square \square \square 2N$		1/9	294.5	155													
	400		268.5	118.5										100			
MHMD04□□□3N		1/15	305	155													
			283.5	118.5								M8					
MHMD04 4N		1/25	320	155	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4
			270.7	127.2								_M6			_		
MHMD082 1N		1/5	307.7	164.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5
MHMD082 2N		1/9	285.7	127.2										97.5			
WITHUU02ZN	750	1/9	322.7	164.2										97.5			4
MHMD082 3N		1/15	298.2	127.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	
III IIVIDUUZ JN		1/13	335.2	164.2	UI	40	30	90	113	4	10	B Depth 20	33	35 5 110	J	02/200	
MHMD082□□4N		1/25	298.2	127.2													
		1,20	335.2	164.2													

Upper column: without brake Lower column: with brake

Motor cable with shield

cable

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.)

Composition of Peripheral Equipments

<100V/200V> Metaric control box Power Noise filter for signal lines* Driver supply Residual Circuit loise filter for signal lines Noise filte \odot rrent devi Motor breaker (RCD) L1C L2C Surge Noise filter for signal lines absorbe Noise filter for to F-frame: X4 Noise filter for Motor cable Insulated power supply signal lines without shield for interface Safety ⊕ controller G. H-frame

- *1 A to D-frame: Noise filter for signal lines, E to H-frame: Noise filter for signal lines < Power supply cable>
- *2 A to F-frame: Noise filter for signal lines, G, H-frame: Noise filter for signal lines <Motor cable>

Protective earth (PE)

*3 A5E is not provided with X3 terminal.

<400V> Metaric control box Power Noise filter for signal lines Driver supply Residual Circuit Noise filter for signal lines Noise filte \bigcirc rrent device Motor (RCD) Insulated Surge ⊕ DC24V Noise filter for signal lines Noise filter for D to F-frame X4 Noise filter for Motor cable Insulated power supply without shield for interface Safety Controller G. H-frame Motor cable with shield Protective earth (PE) cable

- *1 D to F-frame: Noise filter for signal lines, G, H-frame: Noise filter for signal lines <Power supply cable>
- *2 D to F-frame: Noise filter for signal lines, G, H-frame: Noise filter for signal lines <Motor cable>
- *3 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

117					
100V type : (A to C-frame)	Single phase, 100V	+ 10% - 15%	to 120V	+ 10% - 15%	50/60Hz
200V type : (A to D-frame)	Single/3-phase, 200V	+ 10% - 15%	to 240V	+ 10% - 15%	50/60Hz
200V type : (E to H-frame)	3-phase, 200V	+ 10% - 15%	to 230V	+ 10% - 15%	50/60Hz
400 V type (Main power (D to H-frame)	er supply): 3-phase, 380V	+ 10% - 15%	to 480V	+ 10% - 15%	50/60Hz

- 400 V type (Control power supply): DC 24V ±15%
- (D to H-frame)
- (1) This product is designed to be used in over-voltage category (installation category) III of EN 61800-5-1:2007.
- (2) Use an insulated power supply of DC12 to 24V which has CE marking or complies with EN60950.

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.

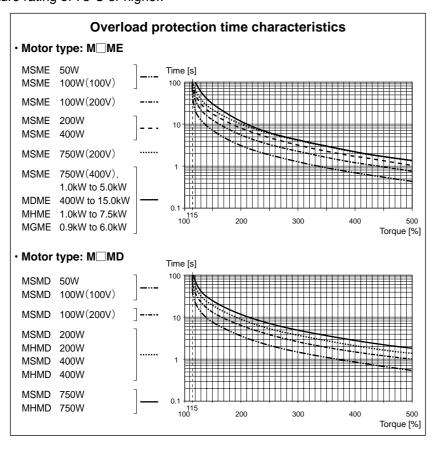
EMC Directives

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.14 "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

For details, refer to P.9.

Circuit Breaker

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

The short-circuit protection circuit on the product is not for protection of branch circuit.

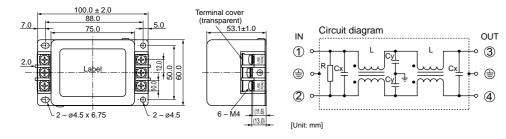
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

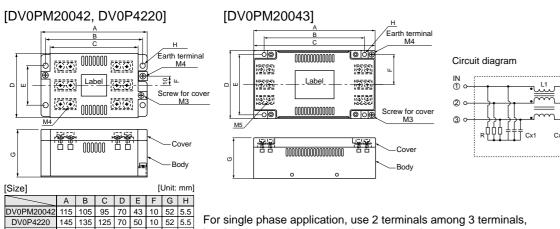
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P4170	Single phase 100V, 200V	SUP-EK5-ER-6	A and B-frame	Okaya Electric Ind.

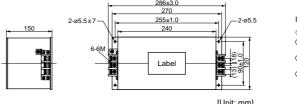


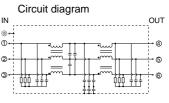
Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
	3-phase 200V		A and B-frame	
DV0PM20042	Single phase 100V, 200V 3-phase 200V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.
DV0P4220	Single/3-phase 200V	3SUP-HU30-ER-6	D-frame	
DV0PM20043	3-phase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



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

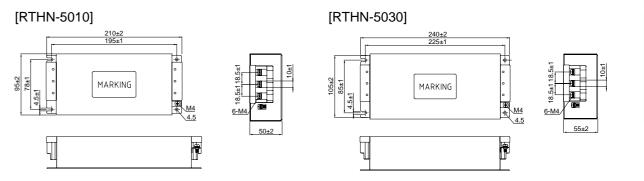
Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P3410	3-phase 200V	3SUP-HL50-ER-6B	F-frame	Okaya Electric Ind.

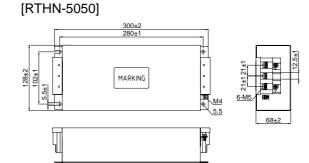




· Recommended components

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A, B, C-frame	
RTHN-5030	3-phase 200V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E, F-frame	





<Remarks>

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

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer	
FS5559-60-34	2 phase 200\/	60	G-frame		
FS5559-80-34	3-phase 200V 3-phase 400V	80	H-frame		
FN258L-16-07		16	D, E-frame	Cohoffnor FMC Inc	
FN258L-30-07		30	F-frame	Schaffner EMC, Inc.	
FN258-42-07		42	G. H-frame		
FN258-42-33		42	G, n-irame		

[FS5559-60-34, FS5559-80-34] Circuit diagram [Unit: mm] • FS5559-60-34 410 170 370 388 FS5559-80-34 460 180 420 438 [FN258L-16-07] [FN258L-30-07] 888 Litze AWG10 [Unit: mm] Circuit diagram 3x2.2µF(X2) 3x2,2μF(X2)SH 3x2,2μF(X2)SH E L [FN258-42-07] [FN258-42-33] Circuit diagram

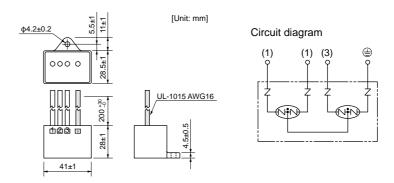
<Remarks>

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

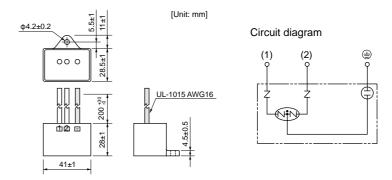
Surge Absorber

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

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P1450	3-phase 200V	R·A·V-781BXZ-4	Okava Electric Ind.
DV0PM20050	3-phase 400V	R·A·V-801BXZ-4	Okaya Liectiic iiid.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P4190	Single phase 100V, 200V	R · A · V-781BWZ-4	Okaya Electric Ind.



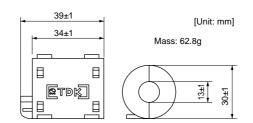
Noise Filter for Signal Lines

Install noise filters for signal lines to all cables (power cable, motor cable, encoder cable and interface cable)

Options

<24 V Power cable, Motor cable, Encoder cable, Interface cable, USB cable>

Option part No.	Manufacturer's part No.	Qty.	Manufacturer
DV0P1460	ZCAT3035-1330	4	TDK Corp.



<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>

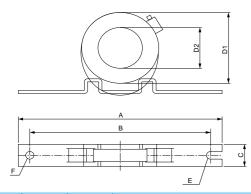
Fix the signal line noise filter in order to prevent excessive stress to the cables.

Recommended components

<Power cable>

Part No.	Applicable driver (frame)	Manufacturer
RJ8035	E-frame 200V, H-frame 200V	KK CODD CO ID
RJ8095	G-frame, H-frame	KK-CORP.CO.JP

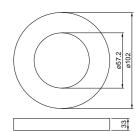
Composition of Peripheral Equipments



Part No. Current		100kHz		Size [Unit: mm]						
Fait No.	Current	(μΗ)	Α	В	С	D1	D2	Core thickness	Е	F
RJ8035	35A	9.9±3	170	150	23	80	53	24	R3.5	7
RJ8095	95A	7.9±3	200	180	34	130	107	35	R3.5	7

<Motor cable>

Part No.	Applicable driver (frame)	Manufacturer
T400-61D	G-frame, H-frame	MICROMETALS



[Unit: mm]

<Caution>

Fix the signal line noise filter in place to eliminate excessive stress to the cables.

Residual current device

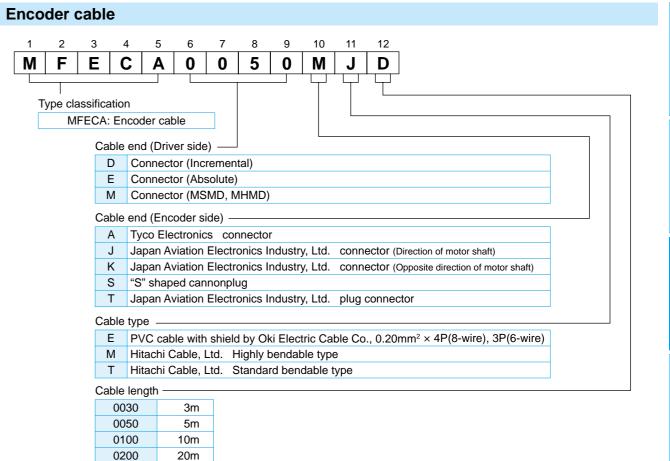
Install a type B Residual current device (RCD) at primary side of the power supply.

Grounding

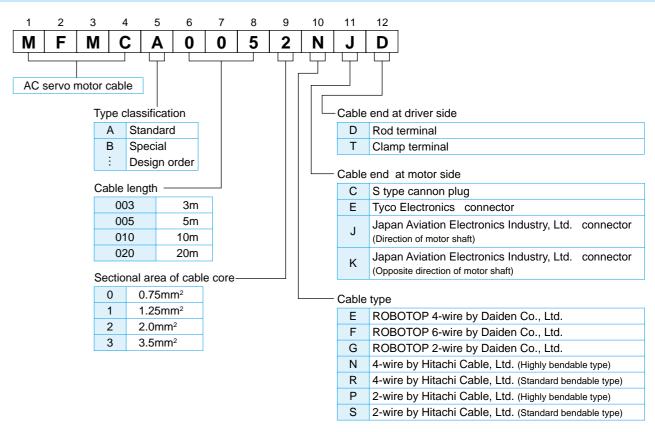
- (1) Connect the protective earth terminal ($\stackrel{\frown}{=}$) of the driver and the protective earth terminal (PE) of the control box without fail to prevent electrical shocks.
- (2) Do not make a joint connection to the protective earth terminals (). 2 terminals are provided for protective earth.

<Note>

For driver and applicable peripheral equipments, refer to P.14 "Driver and List of Applicable Peripheral Equipments".



Motor cable, Brake cable



Options Specifications of Motor connector

• When the motors of <MSMD, MHMD> are used, they are connected as shown below.

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

Connector for encoder



			,		PIN No.	Application
	3	2	1]	1	NC
	6	5	4		2	PS
172168-1					3	PS
					4	E5V
20-bit Incremental			ital	5	E0V	
					6	FG(SHIFLD)

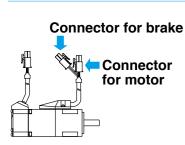
PIN No.	Application
1	NC
2	PS
3	PS
4	E5V
5	E0V
6	FG(SHIELD)

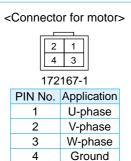
			,		PIN No.	Application
	3	2	1		1	BAT+
	6	5	4		2	BAT-
	9	8	7		3	FG(SHIELD)
	47	04.00	<u> </u>		4	PS
172169-1				_	5	PS
17-bit Absolute			е	6	NC	
					7	E5V
					_	= -> /

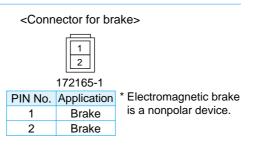
E5V E0V

NC

<remarks></remarks>	Do not connect anything to NC.





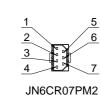


When the motors of <MSME (50 W to 750 W (200V))> are used, they are connected as shown

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

* Do not remove the gasket supplied with the junction cable connector. Securely install the gasket in place. Otherwise, the degree of protection of IP67 will not be guaranteed.

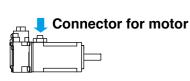




20-bit In	cremental		17-bit Absolute			
PIN No.	Application		PIN No.	Application		
1	FG(SHIELD)		1	FG(SHIELD)		
2			2	BAT-		
3	E0V PS — E5V PS		3	E0V		
4			4	PS		
5			5	BAT+		
6			6	E5V		
7			7	PS		

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

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





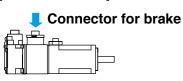
PIN No.	Application
1	U-phase
2	V-phase
3	W-phase
PE	Ground

JN8AT04NJ1

Tightening torque of the screw (M2) 0.085 to 0.095 N·m (screwed to plastic)

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

[Motor with brake]





PIN No.	Application
1	Brake
2	Droko

* Electromagnetic brake is Brake a nonpolar device.

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

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

When the motors of <MSME (750W(400V), 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.)

N/MS3102A20-29P

17-bit Absolute

PIN No. Application

NC

NC

NC

NC

NC

E₀V

E5V

FG(SHIELD)

PS

NC

NC

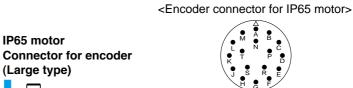
NC

NC

BAT-

BAT+

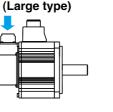
Connector for encoder

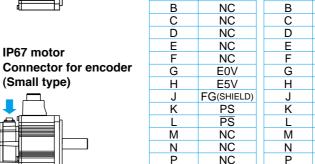


20-bit Incremental

PIN No. Application

NC





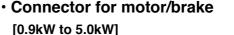


<Encoder connector for IP67 motor>

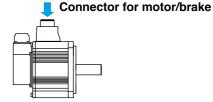
JN2AS10ML3-R					
20-bit Incremental			17-bit Absolute		
PIN No.	PIN No. Application		PIN No.	Application	
1	E0V		1	E0V	
2	NC		2	NC	
3	PS		3	PS	
4	E5V		4	E5V	
5	NC		5	BAT-	
6	NC		6	BAT+	
7	PS		7	PS	
8	NC		8	NC	
9	FG(SHIELD)		9	FG(SHIELD	
10	NC		10	NC	

<Remarks>

Do not connect anything to NC.



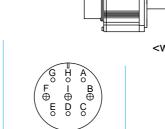
<without Brake>

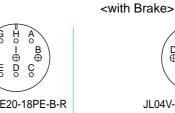


NC

NC

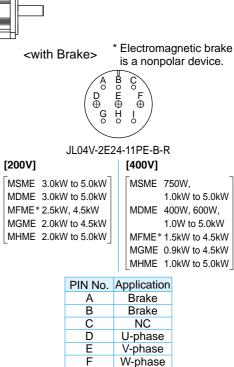
NC





СВ	0 0 0
JL04V-2E20-4PE-B-R [MSME 750W(400V),	JL04V-2E20-18PE-B-R [200V] MSME 1.0kW to 2.0kW MDME 1.0kW to 2.0kW MFME*1.5kW MGME 0.9kW MHME 1.0kW to 1.5kW
MSME 3.0kW to 5.0kW	PIN No. Application
MDME 3.0kW to 5.0kW	G Brake
MGME 2.0kW to 4.5kW	H Brake
MHME 2.0kW to 5.0kW	A NC
IIII IIII	

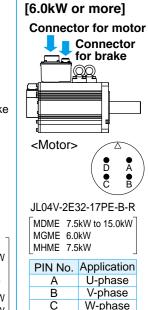
600W (400V), 1.0kW to 2.0kW MGME 0.9kW MHME 1.0kW to 1.5kW JL04HV-2E22-22PE-B-R			MFME* 1.5 MGME 0.9 MHME 1.0			
-	0kW to 5.0kW		PIN No.	Application		
	0kW to 5.0kW		G	Brake		
	MGME 2.0kW to 4.5kW			Brake		
	0kW to 5.0kW		Α	NC		
LIVII IIVIL 2.0	, , , , , , , , , , , , , , , , , , ,		F	U-phase		
PIN No.	Application		I	V-phase		
Α	U-phase		В	W-phase		
В	B V-phase		Е	Ground		
C W-phase			D	Ground		
D Ground			С	NC		
* MFME is common to with or without brake.						

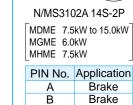


Ground

Ground

NC





D

D

<Brake>

Ground

* Electromagnetic brake is a nonpolar device.

NC

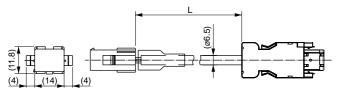
NC

<Remarks>

Do not connect anything to NC.

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

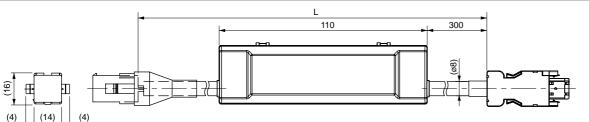
I	Part No.	MFECA0 * * 0EAM	Compatible motor output	MSMD	50W to 750W,	MHMD	200W to 750W
S	pecifications	For 20-bit incremental encoder (Without battery box) * 17bit-use is possible					



Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	
Connector (Motor side)	172160-1	Tugo Flootronico	
Connector pin	170365-1	Tyco Electronics	
Cable 0.20mm ² x3P (6-wire)		Oki Electric Cable Co., Ltd.	

L (m)	Part No.	
3	MFECA0030EAM	
5	MFECA0050EAM	
10	MFECA0100EAM	
20	MFECA0200EAM	

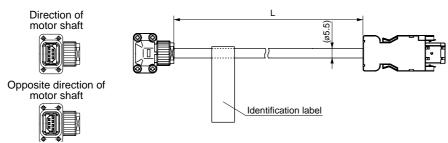
Part No.	MFECA0 * * 0EAE	Compatible motor output	MSMD	50W to 750W,	MHMD	200W to 750W
Specifications	For 17-bit absolute encoder (With battery box)					



Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	
Connector (Motor side)	172161-1	Tugo Flootronico	
Connector pin	170365-1	Tyco Electronics	
Cable 0.20mm ² ×4P (8-wire)		Oki Electric Cable Co., Ltd.	

L (m)	Part No.
3	MFECA0030EAE
5	MFECA0050EAE
10	MFECA0100EAE
20	MFECA0200EAE

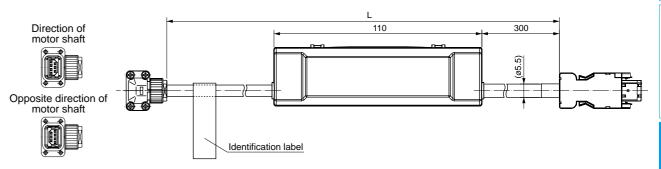
	MFECA0 * * 0MJD (Highly bendable type, Direction of motor shaft)		MSME 50W to
Part No.	MFECA0 * * 0MKD (Highly bendable type, Opposite direction of motor shaft)	Compatible motor output	
Part No.	MFECA0 * * 0TJD (Standard bendable type, Direction of motor shaft)		750W(200V)
	MFECA0 * * 0TKD (Standard bendable type, Opposite direction of motor shaft)		
Specifications	For 20-bit incremental encoder (Without battery box) * 17bit-use is possible		



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

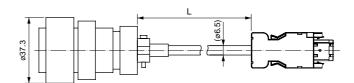
L (m)	Part No.(ex.)
3	MFECA0030MJD
5	MFECA0050MJD
10	MFECA0100MJD
20	MFECA0200MJD

		MFECA0 * * 0MJE (Highly bendable type, Direction of motor shaft)		
Por	t No.	MFECA0 * * 0MKE (Highly bendable type, Opposite direction of motor shaft)	Compatible motor output 50W	MSME FOW to
Fai	t NO.	MFECA0 * * 0TJE (Standard bendable type, Direction of motor shaft)		750W(200V)
		MFECA0 * * 0TKE (Standard bendable type, Opposite direction of motor shaft)		70011(2001)
Specif	fications	For 17-bit absolute encoder (With battery box)		



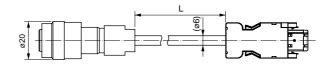
Title	Part No.	Manufacturer	L (m)	Part No.(ex.)
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030MJE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050MJE
Connector (Motor side)	JN6FR07SM1	Japan Aviation	10	MFECA0100MJE
Connector pin	LY10-C1-A1-10000	Electronics Ind.	20	MFECA0200MJE
Cable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

Part No.	MFECA0 * * 0ESD	Compatible motor output	0.9kW to 5.0kW (IP65 Motor)
Specifications	For 20-bit incremental encoder (Without battery box)		



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ESD
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	10	MFECA0100ESD
Cable clamp	N/MS3057-12A	Electronics Ind.	20	MFECA0200ESD
Cable	0.2mm ² x3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0ETD	Compatible motor output	MDME 400W(400V), MDME 600W(400V), 0.9kW to 15.0kW (IP67 Motor)
Specifications	For 20-bit incremental enc	coder (Without battery box)	



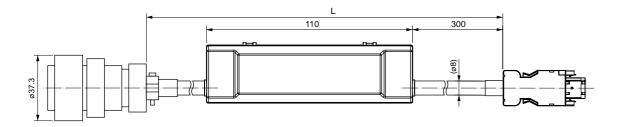
Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation
Connector pin	JN1-22-22S-PKG100	Electronics Ind.
Cable	0.2mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.

		L (m)	Part No.
3		3	MFECA0030ETD
		5	MFECA0050ETD
		10	MFECA0100ETD
		20	MFECA0200ETD
٦			

Options Junction Cable for Encoder

* It doesn't correspond to IP65 and IP67.

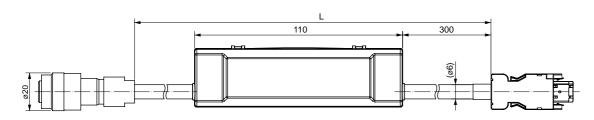
Part No.	MFECA0 ** 0ESE	Compatible motor output	0.9kW to 5.0kW (IP65 Motor)
Specifications	For 17-bit absolute encoder (With battery box)		



Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	
Cable clamp	N/MS3057-12A	Electronics Ind.	
Cable	0.2mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.	

L (m)	Part No.
3	MFECA0030ESE
5	MFECA0050ESE
10	MFECA0100ESE
20	MFECA0200ESE

Part No.	MFECA0 * * 0ETE	Compatible motor output	MDME 400W(400V), MDME 600W(400V) MSME 750W(400V) 0.9kW to 15.0kW (IP67 Motor)
Specifications	For 17-bit absolute encoder (With battery box)		



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Title	Part No.	Manufacturer
Connector (Driver side)	river side) 3E206-0100 KV Sı	
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation
Connector pin	JN1-22-22S-PKG100	Electronics Ind.
Cable	0.2mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.

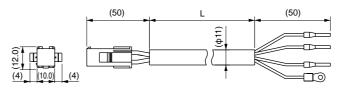
L (m)	Part No.
3	MFECA0030ETE
5	MFECA0050ETE
10	MFECA0100ETE
20	MFECA0200ETE

Options

Junction Cable for Motor (Without brake)

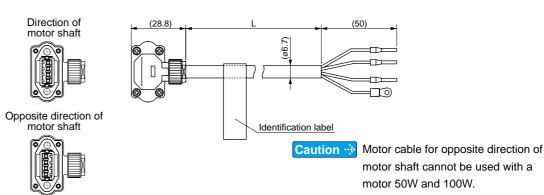
* It doesn't correspond to IP65 and IP67.

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



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172159-1	Tyco Electronics	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-TOP 600V 0.75mm ² 4-wire	Daiden Co.,Ltd.		

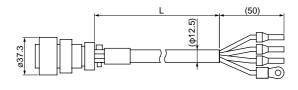
	MFMCA0 * * 0NJD (Highly bendable type, Direction of motor shaft)		
Part No.	MFMCA0 * * 0NKD (Highly bendable type, Opposite direction of motor shaft)	Applicable	MSME 50W to
Part No.		model	750W(200V)
	MFMCA0 * * 0RKD (Standard bendable type, Opposite direction of motor shaft)		. 33.1.(2001)



Title	Part No.	Manufacturer		
Connector	JN8FT04SJ1	Japan Aviation		
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.		
Rod terminal	AI0.75-8GY	Phoenix Contact		
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.		
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.		

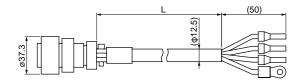
L (m)	Part No.(ex.)
3	MFMCA0030NJD
5	MFMCA0050NJD
10	MFMCA0100NJD
20	MFMCA0200NJD

Applicable MFME 1.5kW(200V) MFMCA0 * * 2ECD



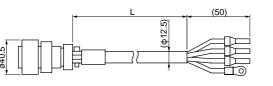
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-18SE-EB-R	Japan Aviation	3	MFMCA0032ECD
Cable clamp	amp JL04-2022CK(14)-R Electronics Ind.		5	MFMCA0052ECD
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCA0102ECD
Nylon insulated round terminal	N5.5-5	J.S.1 Wilg. Co., Ltd.	20	MFMCA0202ECD
Cable	ROBO-TOP 600V 3.5mm ² 4-wire	Daiden CoLtd.		

MSME 750W(400V), 1.0kW to 2.0kW, MDME 400W(400V), 600W(400V), 1.0kW to 2.0kW Applicable model Part No. MFMCD0 * * 2ECD MHME 1.0kW to 1.5kW, MGME 0.9kW (All model 200V and 400V commonness)



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

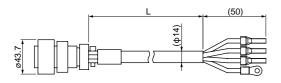
Part No.		Applicable	MHME 2.0kW
i ait ito.	WII WICEO ZECD	model	(200V and 400V commonness)



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	JL04V-6A22-22SE-EB-R Japan Aviation JL04-2022CK(14)-R Electronics Ind.		MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R			MFMCE0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202ECD
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	Daiden Co.,Ltd.		

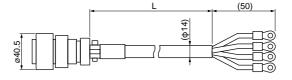
Part No. MFMCF0 * *	2ECD Applicable model	MFME	1.5kW(400V), 2.5kW(200V and 400V commonness)
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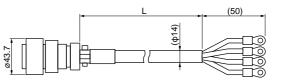
Title	Part No.	Manufacturer	L (r
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.	10
Nylon insulated round terminal	N5.5-5	J.S.1 Mig. Co., Ltd.	20
Cable	ROBO-TOP 600V 3.5mm ² 4-wire	Daiden Co.,Ltd.	

Part No.	MFMCA0 * * 3ECT	Applicable model	MHME	3.0kW to 5.0kW, 3.0kW to 5.0kW, 200V and 400V comm	MGME	



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 600V 3.5mm ² 4-wire	Daiden Co.,Ltd.	20	MFMCA0203ECT

Part No. MFMCD0 * * 3ECT Applicable model MFME 4.5kW (200V and 400V commonness)	Part No.	MFMCD0 * * 3ECT		
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Title	Part No. Manufacturer		L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCD0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600V 3.5mm ² 4-wire	Daiden Co.,Ltd.	20	MFMCD0203ECT

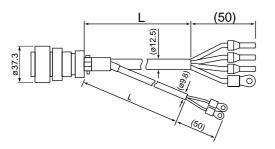
163

Part No. MFMCF0032ECD MFMCF0052ECD MFMCF0102ECD MFMCF0202ECD

	MSME	1.0kW to 2.0kW(200V)
	MDME	1.0kW to 2.0kW(200V)
е		4 FLAM/0001/\

MFME 1.5kW(200V), MHME 1.0kW(200V) to 1.5kW(200V)

MGME 0.9kW(200V)



Title		Part No.	Manufacturer
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation
Cable clam	р	JL04-2022CK(14)-R	Electronics Ind.
Rod termina	al	NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated	Earth	N2-M4	J.S.T Mfg. Co., Ltd.
round terminal	Brake	N1.25-M4	J.S.1 Wilg. Co., Ltd.
Cable		ROBO-TOP 600V 0.75mm ² and ROBO-TOP 600V 2.0mm ² 6-wire	Daiden Co.,Ltd.

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

L (m)

3

5

20

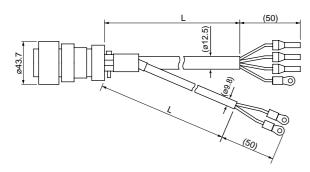
Part No.

MFMCE0032FCD

MFMCE0052FCD MFMCE0102FCD

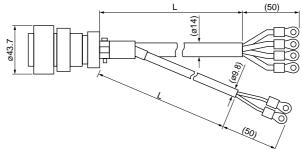
MFMCE0202FCD

Part No.		Applicable model	MSME 750W(400V) to 2.0kW(400V), MDME 400W(400V) to 2.0kW(400V), MFME 1.5kW(400V), 2.5W(200V/400V), MGME 0.9kW(400V) MHME 1.0kW(400V), 1.5kW(400V), 2.0kW(200V/400V)
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Title		Part No.	Manufacturer
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation
Cable clam)	JL04-2428CK(17)-R	Electronics Ind.
Rod termina	al	NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated	Earth	N2-M4	J.S.T Mfg. Co., Ltd.
round terminal	Brake	N1.25-M4	J.S. I Mig. Co., Ltd.
Cable		ROBO-TOP 600V 0.75mm ² and ROBO-TOP 600V 2.0mm ² 6-wire	Daiden Co.,Ltd.

Part No.	MFMCA0 * * 3FCT	Applicable model	MFME MGME	3.0kW to 5.0kW, 4.5kW, 2.0kW to 4.5kW 200V and 400V comm	MHME	3.0kW to 5.0kW 3.0kW to 5.0kW



Title		Part No. Manufacturer		L (m)	Part
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCAG
Cable clam	р	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCAG
Nylon insulated	Earth	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA
round terminal	Brake	N1.25-M4	J.S. 1 Wilg. Co., Ltd.	20	MFMCAG
Cable		ROBO-TOP 600V 0.75mm ² and ROBO-TOP 600V 3.5mm ² 6-wire	Daiden Co.,Ltd.		

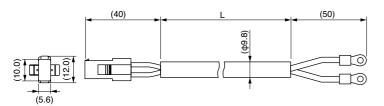
165

Options

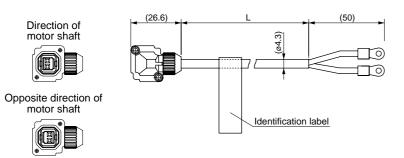
Junction Cable for Brake

* It doesn't correspond to IP65 and IP67.

Part No. MFMCB0 * * 0GET MSMD 50W to 750W, MHMD 200W to 750W



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Type Floatranice	3	MFMCB0030GET
Connector pin	170366-1, 170362-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600V 0.75mm ² 2-wire	Daiden Co.,Ltd.	20	MFMCB0200GET



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JN4FT02SJMR	Japan Aviation	3	MFMCB0030PJT
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.	5	MFMCB0050PJT
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100PJT
Cable	AWG22 2-wire (ø4.3)	Hitachi Cable, Ltd.	20	MFMCB0200PJT

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Options Cable for Interface

Cable for Interface

Part No. DV0P4360 Connector cover: 10350-52A0-008 Connector: 10150-3000PE Sumitomo 3M or equivalent Sumitomo 3M or equivalent 2000,+200 500+10

This 2 m connector cable contains AWG28 conductors.

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)

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

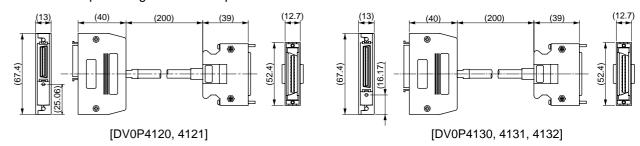
Part No. DV0P4120, 4121, 4130, 4131, 4132

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 → A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5 series (A4, A series) for velocity control
DV0P4132	MINAS V → A5 series (A4, A series) for torque control

^{*} For details of wiring, contact our sales department.

Converts 36-pin configuration to 50-pin.



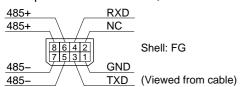
Connector Kit for Communication Cable (for RS485, RS232) (Excluding A5E Series)

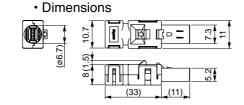
Part No. DV0PM20024

Components

Title	Part No.	Manufacturer	Note
Connector	2040008-1	Tyco Electronics	For Connector X2 (8-pins)

• Pin disposition of connector, connector X2





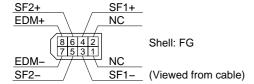
Connector Kit for Safety (Excluding A5E Series)

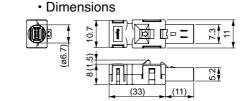
Part No. DV0PM20025

Components

Title	Part No.	Manufacturer	Note
Connector	2013595-1	Tyco Electronics	For Connector X3 (8-pins)

Pin disposition of connector, connector X3





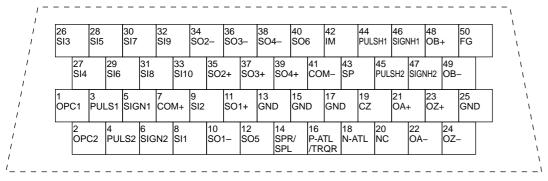
Connector Kit for Interface

Part No. DV0P4350

Components

Title	Part No.	Number	Manufacturer	Note
Connector	10150-3000PE	1	Sumitomo 3M	For Connector X4
Connector cover	10350-52A0-008	1	(or equivalent)	(50-pins)

• Pin disposition (50 pins) (viewed from the soldering side)



- 1) Check the stamped pin-No. on the connector body while making a wiring.
- 2) For the function of each signal title or its symbol, refer to the operating manual.
- 3) Do not connect anything to NC pins in the above table.

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.183 "List of Peripheral Equipments".

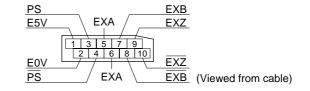
Connector Kit for External Scale (Excluding A5E Series)

Part No. DV0PM20026

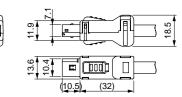
Components

Title	Part No.	Manufacturer	Note
Connector	MUF-PK10K-X	J.S.T Mfg. Co., Ltd.	For Connector X5 (10-pins)

• Pin disposition of connector, connector X5







Connector Kit for Encoder

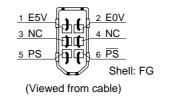
Part No. DV0PM20010

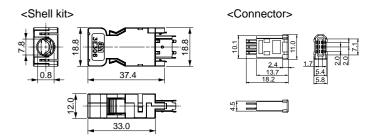
Components

Title	Part No.	Manufacturer	Note		
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M (or equivalent)	For Connector V6		
Shell kit	3E306-3200-008		For Connector X6		

Pin disposition of connector, connector X6







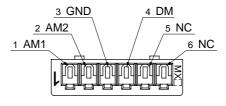
Connector Kit for Analog Monitor Signal

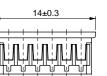
Part No. DV0PM20031

· Components

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

· Pin disposition of connector, connector X7



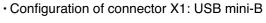


Dimensions



<Remarks>

Connector X1: use with commercially available cable.







Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A to C-frame 100V, A to D-frame 200V: Single row type)

Components

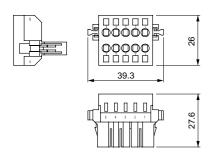
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	

Part No. DV0PM20033 (For A to D-frame 200V: Double row type)

Components

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

Dimensions



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

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 400V)

Components

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

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

Components

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

Connector Kit for Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	LC T Mfa Co. Ltd	For Connector VD
Handle lever	MJFAT-0T	1	J.S.T Mfg. Co., Ltd.	For Connector XD

Connector Kit for Regenerative Resistor Connection (E-frame)

Part No. | DV0PM20045 (For E-frame 200V/400V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-L	1	LC T Mfa Co. Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	LC T Mfg. Co. Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd. For Conne	For Connector AC

Connector Kit for Motor Connection (Driver side)

Part No. DV0PM20034 (For A to C-frame 100V, A to D-frame 200V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	06JFAT-SAXGF	1	LC T Mfa Co. Ltd	For Connector XB
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

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

Components

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

Part No. DV0PM20054 (For D-frame 400V)

Components

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

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

Connector Kit for Motor/Encoder Connection

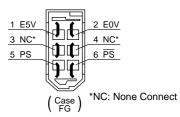
Part No.	DV0P4290	Applicable model	MSMD 50W to 750W, MHMD 200W to 750W
		modei	(absolute encoder type)

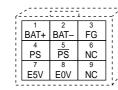
Components

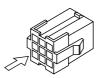
Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Connector	172161-1	1	Tues Fleetrenies	For Encoder cable
Connector pin	170365-1	9	Tyco Electronics	(9-pins)
Connector	172159-1	1	Tyco Electronics	For Motor cable
Connector pin	170366-1	66-1 4 Tyco Electronics	(4-pins)	

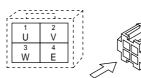
· Pin disposition of connector, · Pin disposition of connector connector X6 for encoder cable

· Pin disposition of connector for motor cable









* When you connect the battery for absolute encoder, refer to P.177, "When you make your own cable for 17-bit absolute encoder"

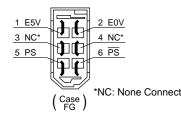
Dest No	DV0D4000	Applicable	MSMD 50W to 750W, MHMD 200W to 750W
Part No.			(incremental encoder type)

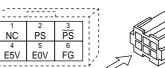
Components

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

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

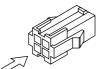
· Pin disposition of connector for motor cable





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Applicable model Part No. DV0PM20035 MSME 50W to 400W(100V), 50W to 750W(200V)

· Components

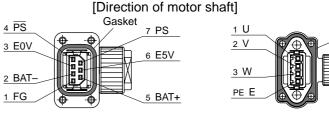
Title	Part No.	Number Manufacturer		Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable	
Socket contact	LY10-C1-A1-10000	7	Electronics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

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

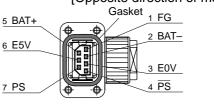
· Pin disposition of connector for motor cable

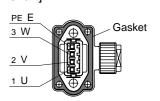


(Case) FG *1 NC: None Connect



[Opposite direction of motor shaft]





* Pins 2 and 5 are left unused (NC) with an incremental encoder.

Remarks 🔆 Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

Part No.	DV0PM20036	Applicable model	<ip67 motor=""> MSME 750W (400V), 1.0kW to 2.0kW, MDME 400W (400V), 600W (400V), 1.0kW to 2.0kW MHME 1.0kW to 1.5kW, MGME 0.9kW (All model 200V and 400V commonness)</ip67>	Without brake
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Components

Title	Part No.	Number Manufacturer		Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	Far Faraday sable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A-20-4SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For 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.183 "List of Peripheral Equipments".

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

Part No. DV0P4310 Applicable model SIP65 motor>
MSME 1.0kW to 2.0kW, MDME 1.0kW to 2.0kW brake MHME 1.0kW to 1.5kW, MGME 0.9kW

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	F 0	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Efficader Cable	
Motor connector	N/MS3106B20-4S	1	Japan Aviation	For Motor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

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Part No			MSME	3.0kW to 5.0kW,	MDME	3.0kW to 5.0kW	Without
rait No.	DV OF WIZOUS!	model	MHME	2.0kW to 5.0kW,	MGME	2.0kW to 3.0kW	brake
			(All mode	I 200V and 400V comm	nonness)		

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	Fan Fanadan askla	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

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Part No.	110111111111111111111111111111111111111	Applicable model	MSME	3.0kW to 5.0kW,	MDME	3.0kW to 5.0kW	Without brake
		model	MHME	2.0kW to 5.0kW,	MGME	2.0kW to 3.0kW	Diake

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Freeder coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.		

Part No.	DV0PM20038	Applicable model	<ip67 motor=""> MSME 1.0kW to 2.0kW, MDME 1.0kW to 2.0kW MFME 1.5kW (Common to with/ without brake), MHME 1.0kW to 1.5kW, MGME 0.9kW (All model 200V)</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.		
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

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		<ip65 motor=""></ip65>	\A/:+la
Part No.	Applicable model	MSME 1.0kW to 2.0kW, MDME 1.0kW to 2.0kW	With
	ouo.	MHME 1.0kW to 1.5kW, MGME 0.9kW	Diane

Components

Title	Part No.	Number Manufacturer		Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	Fan Fanadan sabla	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-18S	1	Japan Aviation	Can Matan askila	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0kW to 5.0kW, MDME 3.0kW to 5.0kW MFME 2.5kW to 4.5kW (Common to with/ without brake), MHME 2.0kW to 5.0kW, MGME 2.0kW to 3.0kW (400V) MSME 750W to 5.0kW, MDME 400W to 5.0kW MFME 1.5kW to 4.5kW (Common to with/ without brake), MHME 1.0kW to 5.0kW, MGME 0.9kW to 3.0kW</ip67>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	FOI Efficadel Cable
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Motor coble
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	For Motor cable

			<ip65 m<="" th=""><th>notor></th><th></th><th></th><th>\<i>\\!</i>:4b</th></ip65>	notor>			\ <i>\\!</i> :4b
Part No.	DV0P4340	Applicable model	MSME	3.0kW to 5.0kW,	MDME	3.0kW to 5.0kW	With brake
		IIIOGGI	MHME	2.0kW to 5.0kW,	MGME	2.0kW to 3.0kW	DIAKE

Components

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

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.183 "List of Peripheral Equipments".

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

Battery for Absolute Encoder Options

A5E series does not support to absolute encoder.

<IP67 motor> Without Applicable DV0PM20056 MDME 7.5kW to 15.0kW Part No. brake MGME 6.0kW, MHME 7.5kW

Components

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

^{*} Cable cover size: \$\Phi22\$ to \$\Phi25\$. 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 motor=""> MDME 7.5kW to 15.0kW MGME 6.0kW, MHME 7.5kW</ip67>	With brake
----------	------------	------------------	--	---------------

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 Foresdee on blo	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	Fan Matau anhla	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Proke cable	
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake cable	

^{*} Cable cover size: Φ 22 to Φ 25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

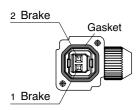
Part No.	DV0PM20040				
----------	------------	--	--	--	--

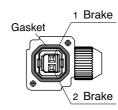
Components

Title	Part No.	Number	Manufacturer	Note
Connector	JN4FT02SJM-R	1	Japan Aviation	For brake cable
Handle lever	ST-TMH-S-C1B-3500	2	Electronics Ind.	FOI DIAKE CADIE

· Pin disposition of connector for brake cable

[Direction of motor shaft] [Opposite direction of motor shaft]





<Remarks>

Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

<Remarks>

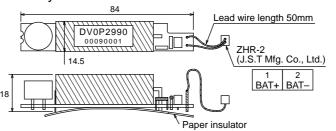
· For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.183 "List of Peripheral Equipments".

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Battery for Absolute Encoder

Part No. DV0P2990

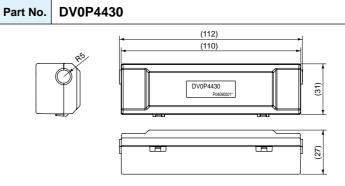
· Lithium battery: 3.6V 2000mAh



<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.

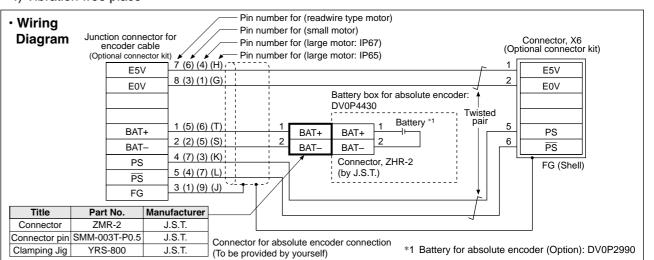
<Caution>

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.

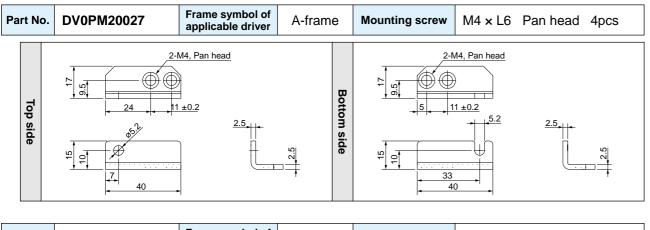
Installation Place of Battery

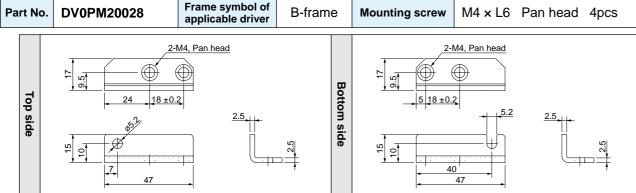
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable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

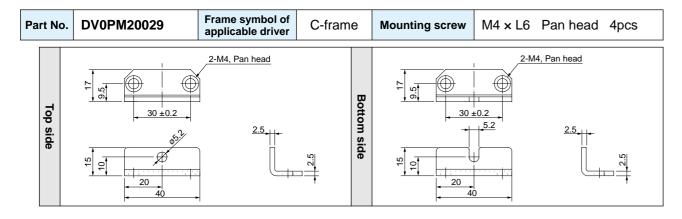


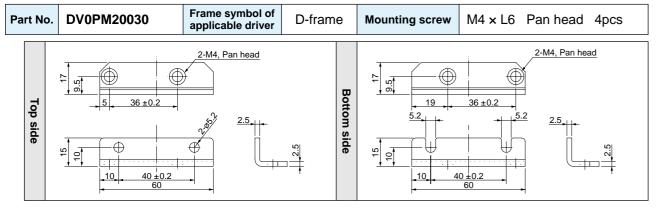
F: Center-to-center distance on outer circular arc

Options 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).

Fig.2 Α F: Center-to-cente distance on slotted hole

	Part No.	Α	В	С	D	E(Max)	F	G	Н	1	Inductance (mH)	Rated current (A)
	DV0P220	65±1	125±1	(93)	136Max	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
Eia 1	DV0P222	60±1	150±1	(113)	155Max	140	70+3/-0	85±2	4-7φ×12	M4	2	8
Fig.1	DV0P223	60±1	150±1	(113)	155Max	150	79+3/-0	95±2	4-7φ×12	M4	1.39	11
	DV0P224	60±1	150±1	(113)	160Max	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	110Max	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.2	DV0P228	55±0.7	80±1	66.5±1	110Max	95	46±2	60±2	4-5φ×10	M4	2	8
	DV0PM20047	55±0.7	80±1	66.5±1	110Max	105	56±2	70±2	4-5φ×10	M4	1.39	11

^{*} For application, refer to P.16 to 23 "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 generalpurpose 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

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

			Spec	ifications			
Part No.	Part No. Manufacturer's		cable core outside	Weight		power ence) *1	Activation temperature of
	part No.		diameter		Free air	with fan	built-in thermostat
		Ω	mm	kg	W	W	
DV0P4280	RF70M	50		0.1	10	25	
DV0P4281	RF70M	100		0.1	10	25	
DV0P4282	RF180B	25	ф1.27	0.4	17	50	140±5°C
DV0P4283	RF180B	50	/ AWG18 \	0.2	17	50	B-contact
DV0P4284	RF240	30	stranded	0.5	40	100	Open/Close capacity
DV0P4285	RH450F	20	\ wire /	1.2	52	130	(resistance load)
DV0PM20048	RF240	120		0.5	35	80	1A 125VAC 6000 times
DV0PM20049	RH450F	80		1.2	65	190	0.5A 250VAC 10000 times
DV0PM20058	RH450F × 6	3.3	—*2	16	—*3	780	
DV0PM20059	RH450F × 6	13.3	—*2	16	*3	1140	

Manufacturer : Iwaki Musen Kenkyusho

A built-in thermal fuse and a thermal protector are provided for safety.

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

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit, power supply voltage or load.

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed 100°C.

Attach the regenerative resistor to a nonflammable material such as metal.

Cover the regenerative resistor with a nonflammable material so that it cannot be directly touched.

Temperatures of parts that may be directly touched by people should be kept below 70°C.

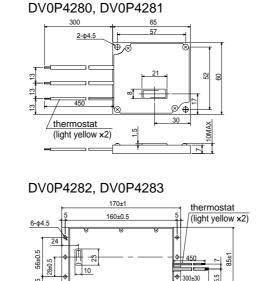
*2 Terminal block with screw tightening torque as shown below.

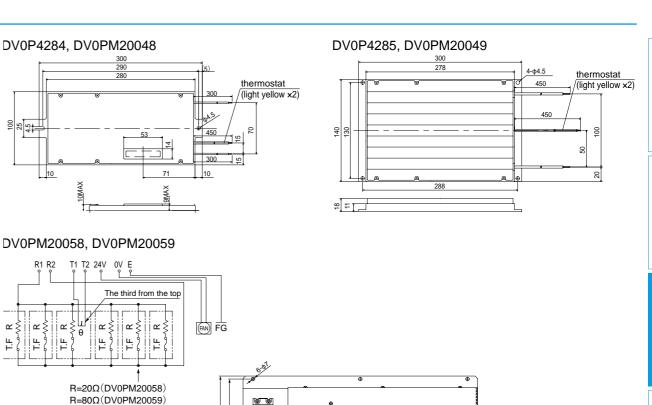
T1, T2, 24V, 0V, E: M4: 1.2 to 1.4N·m : M5 : 2.0 to 2.4N·m

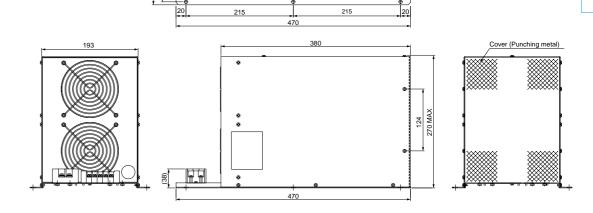
Use the cable with the same diameter as the main circuit cable. (Refer to P.14).

*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, 100V	Single phase, 200V 3-phase, 200V	3-phase, 400V
А	DV0P4280	DV0P4281 (50W, 100W) DV0P4283 (200W)	_
В	DV0P4283	DV0D4202	
С	DV0P4282	DV0P4283	
D		DV0P4284	DV0PM20048
Е		DV0P4284 × 2 in parallel or DV0P4285	DV0PM20049
F	_	DV0P4285 × 2 in parallel	DV0PM20049 × 2 in parallel
G		DV0P4285 × 3 in parallel	DV0PM20049 × 3 in parallel
н		DV0P4285 × 6 in parallel or DV0PM20058	DV0PM20049 × 6 in parallel or DV0PM20059







<Remarks>

Thermal fuse is installed for safety. Compose the circuit so that the power will be turned off when the thermostat is activated. The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation.

Make it sure that the surface temperature of the resistor may not exceed 100°C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Install a fan for a forced cooling if necessary.

<Caution>

Regenerative resistor gets very hot.

Circuit diagram

Take preventive measures for fire and burns. Avoid the installation near inflammable objects, and easily accessible place by hand.

^{*1} Power with which the driver can be used without activating the built-in thermostat.

Motor		Part No.	Manufacturer	
MSME	50W to 750W	Z15D271	Ishizuka Electronics Co.	
	750W (400V) 1.0kW to 5.0kW	Z15D151		
MDME	400W (400V), 600W (400V)			
	1.0kW to 3.0kW	NVD07SCD082	KOA CORPORATION	
	4.0kW to 7.5kW	Z15D151	Ishizuka Electronics Co.	
	11kW, 15kW			
MFME	1.5kW	NVD07SCD082	KOA CORPORATION	
	2.5kW, 4.5kW			
MGME	0.9kW to 6.0kW	Z15D151	Ishizuka Electronics Co.	
МНМЕ	1.0kW, 1.5kW	NVD07SCD082	KOA CORPORATION	
	2.0kW to 7.5kW	Z15D151	Ishizuka Electronics Co.	

Options

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Information

Drive

Motor

Options

Information

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AC servo motor capacity selection software	F3
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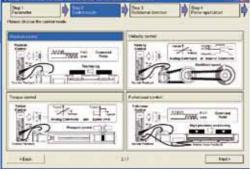
Next generation support tool fully loaded with advanced functions

Introduction to new setup support software "PANATERM"

- Monitoring, setting and analyzing through a PC
- · High speed accessing between the driver and PC via USB communication
- · Multilingualization (English, Japanese, Chinese and Korean)
- · Supporting OS:

Windows® XP SP3 (32-bit Ver.), Windows® VISTA SP1 (32-bit Ver.), Windows® 7 (32-bit Ver., 64-bit Ver.)

Setup

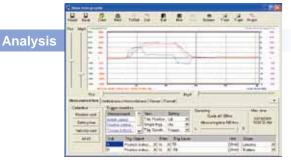


The initial setup becomes easy by the wizard screen.

Monitor



Universal monitor with recording/reproducing capability



High-performance waveform graphical display covers a wider range of measuring objects.



Addition of gain adjustment screen for automatic stiffness reduction during oscillation

Trial run



Trial run program that limits operating range assures safe test sequence.

- · Fit gain function
- Frequency response measurement
- Troubleshooting
- Analog input adjustment
- Z-phase searching
- · Alarm monitoring
- · Functionality enhancement by using external tool

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

Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/i_e/25000/motor_fa_e/motor_fa_e.html

selection software

Motor capacity 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

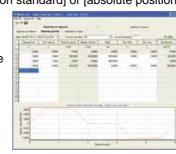
the real machine. To simulate the target machine as practical as possible, use maximum number of parameters available.



2. Enter operation pattern

Input the planned operation pattern that will contain [speed and rotation standard] or [absolute position

standard] with optional settings such as S-acceleration/de celeration.



3. Select the motor

When the data required in step 1 and 2 above have been input, the software lists the motors,

which will be appropriate to use with your machine. Select the motor that is best suitable for your machine application.



Details of motor

Once the motor is selected, specifications of the motor and amplifier, and details of reason for

determination are displayed and may be printed out.



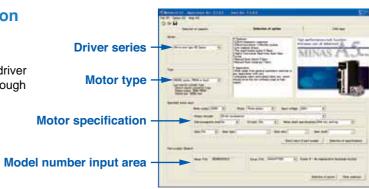
Option selection software for AC servo motor

We have prepared PC software to enable fast, easy, and correct option selection, a complicated job without the software

Two procedures for option selection

1. Selection according to driver series and motor type

Suitable option can be selected by selecting driver series, motor type and motor specification through pulldown menu.



2. Entry of model number

If you know the model number based on the servo motor and driver currently used, enter the model number.

Result of selection

Tab sheet specific to each of option model numbers is used for easier identification of the desired option.

* When you are using the motor capacity selection software, simply press [Option Selection] tab and the screen as shown right will appear.



Please download from our web site and use after install to the PC.

http://industrial.panasonic.com/ww/i e/25000/motor fa e/motor fa e.html

Table 4: Unit combined Table 3 : Derived unit with Other derived unit with SI unit proper name

Table1: Basic unit

Quantity	Name of unit	Symbol of unit	
Length	meter	m	
Weight	kilogram	kg	
Time	second	S	
Current	ampere	A	
Thermodynamic temperature	kelvin	K	
Amount of substance	mol	mol	
Luminous intensity	candela	cd	

Table 2: Auxiliary unit

Quantity	Name of unit	Symbol of unit
Plane angle	radian	rad
Solid angle	steradian	sr

Table 3: Major derived unit with proper name

Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1Hz=1s ⁻¹
Force	newton	N	1N=1kg·m/s ²
Pressure, Stress	pascal	Pa	1Pa=1N/m ²
Energy, Work, Amount of heat	joule	J	1J=1N·m
Amount of work, Work efficiency, Power, Electric power	watt	W	1W=1J/s
Electric charge, Amount of electricity	coulomb	С	1C=1A·s
Electric potential, Potential difference, Voltage, Electromotive force	volt	V	1V=1J/C
Electrostatic capacity, Capacitance	farad	F	1F=1C/V
Electric resistance	ohm	Ω	1Ω=1V/A
Electric conductance	siemens	S	1S=1Ω ⁻¹
Magnetic flux	weber	Wb	1Wb=1V⋅s
Magnetic flux density, Magnetic induction	tesla	T	1T=1Wb/m ²
Inductance	henry	Н	1H=1Wb/A
Degree centigrade (Celsius)	degree centigrade (Celsius) / degree	°C	t°C=(t+273.15)K
Luminous flux	lumen	lm	1lm=1cd·sr
Illuminance	lux	lx	1lx=1lm/m ²

Table 4: Unit combined with SI unit

Quantity	Name	Symbol of unit	
	minute	min	
Time	hour	h	
	day	d	
	degree	۰	
Plane angle	minute	,	
	second	"	
Volume	liter	I, L	
Weight	ton	t	

Table 5: Prefix

Multiples powered	Prefix		
to unit	Name	Symbol	
10 ¹⁸	exa	E	
10 ¹⁵	peta	P	
10 ¹²	tera	T	
10°	giga	G	
10 ⁶	mega	M	
10 ³	kilo	k	
10 ²	hecto	h	
10	deca	da	
10 ⁻¹	deci	d	
10°2	centi	С	
10 ⁻³	milli	m	
10-6	micro	μ	
10 ⁻⁹	nano	n	
10 ⁻¹²	pico	р	
10 ⁻¹⁵	femto	f	
10 ⁻¹⁸	atto	a	

Guide to the International System of Units (SI)

Major compatible unit

Quantity	Symbol of conventional unit	Symbol of SI unit and compatible unit	Conversion value
Length	μ (micron)	μm	1μ=1μm (micrometer)
Acceleration	Gal	m/s ²	1Gal=10 ⁻² m/s ²
	G	m/s ²	1G=9.80665m/s ²
Frequency	c/s, c	Hz	1c/s=Hz
Revolving speed, Number of revolutions	rpm	s ^{-1 or} min ⁻¹ , r/min	1rpm=1min ⁻¹
Weight	kgf	-	Same value
Mass	-	kg	Same value
Weight flow rate	kgf/s	-	Same value
Mass flow rate	_	kg/s	Same value
Specific weight	kgf/m³	-	Same value
Density	_	kg/m ³	Same value
Specific volume	m³/kgf	m³/kg	Same value
Load	kgf	N	1kgf=9.80665N
Force	kgf	N	1kgf=9.80665N
	dyn	N	1dyn=10 ⁻⁵ N
Moment of force	kgf-m	N-m	1kgf-m=9.806 N·m
Pressure	kgf/cm ²	Pa, bar (1) or kgf/cm2	1kgf/cm ² =9.80665 x 10 ⁴ Pa
	_	-	=0.980665bar
	at (Engineering atmospheric pressure)	Pa	1at=9.80665 x 10 ⁴ Pa
	atm (Atmospheric pressure)	Pa	1atm=1.01325 x 10 ⁵ Pa
	mH ₂ o, mAq	Pa	1mH ₂ O=9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg (2)	1mmHg=133.322Pa
	Torr	Pa	
Stress	kgf/mm²	Pa or N/m ²	1kgf/mm ² =9.80665 x 10 ⁶ Pa
			=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	1kgf/cm ² =9.80665 x 10 ⁴ Pa
	g		=9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m²	Pa or N/m ²	1kgf/m²=9.80665Pa=9.80665N/m²
			1kgf/cm ² =9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf-m	J (joule)	1kgf·m=9.80665J
znorgy, rronk	erg	.I	1erg=10 ⁻⁷ J
Work efficiency, Power	kgf-m/s	W (watt)	1kgf-m/s=9.80665W
Trem emolecies, i ever	PS	W	1PS=0.7355kW
Viscosity	PP	Pa·s	1P=0.1Pa·s
Kinetic viscosity	St	mm²/s	10 ⁻² St=1mm ² /s
Thermodynamic temperature	K	K (kelvin)	1K=1K
Temperature interval	deg	K (8)	1deg=1K
Amount of heat	cal	J	1cal=4.18605J
	cal/°C	J/K ⁽³⁾	1cal/°C=4.18605J/K
Heat capacity			1cal/ (kgf·°C)=4.18605J/ (kg·K)
Specific heat, Specific heat capacity	cal/ (kgf⋅°C)	cal/ (kgf⋅K) ⁽³⁾	1cal/K=4.18605J/K
Entropy	cal/K	J/K	1cal/K=4.18605J/K 1cal/ (kgf·K)=4.18605J/ (kg·K)
Specific entropy	cal/ (kgf·K)	J/(kg·K)	
Internal energy (Enthalpy)	cal	J	1cal=4.18605J
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1cal/kgf=4.18605J/kg
Heat flux	cal/h	W	1kcal/h=1.16279W
Heat flux density	cal/ (h·m²)	W/m²	1kcal/ (h·m²)=1.16279W/m²
Thermal conductivity	cal/ (h·m·°C)	W/ (m·K) (3)	1kcal/ (h·m·°C)=1.16279W/ (m·K)
Coefficient of thermal conductivity	cal/ (h·m²·°C)	W/ (m ² ·K) (3)	1kcal/ (h·m²·°C)=1.16279W/ (m²·K)
Intensity of magnetic field	Oe	A/m	1Oe=10 ³ / (4π) A/m
Magnetic flux	Mx	Wb (weber)	1Mx=10 ⁻⁸ Wb
Magnetic flux density	Gs,G	T (tesla)	1Gs=10 ⁻⁴ T

(1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard. (2) Applicable to scale or indication of blood pressure manometers.
(3) "*C" can be substituted for "K".

g: Acceleration of gravity 9.8[m/s²]

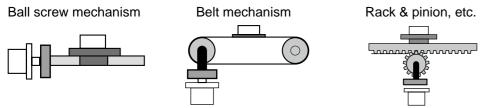
Description on the items related to motor selection

Flow of motor selection

1. Definition of mechanism to be driven by motor.

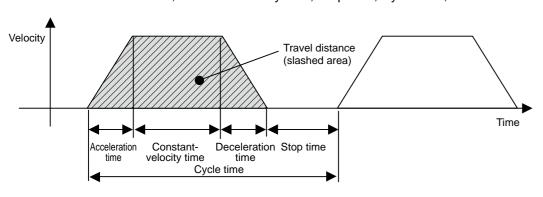
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<Typical mechanism>



2. Definition of operating pattern.

Acceleration/deceleration time, Constant-velocity time, Stop time, Cycle time, Travel distance



Note) Selection of motor capacity significantly varies depending on the operating pattern. The motor capacity can be reduced if the acceleration/deceleration time and stop time are set

as long as possible.

3. Calculation of load inertia and inertia ratio.

Calculate load inertia for each mechanical component. (Refer to "General inertia calculation method" described later.)

Divide the calculated load inertia by the inertia of the selected motor to check the inertia ratio. For calculation of the inertia ratio, note that the catalog value of the motor inertia is expressed as " \times 10⁻⁴kg·m²".

4. Calculation of motor velocity

Calculate the motor velocity from the moving distance, acceleration / deceleration time and constant-velocity time.

5. Calculation of torque

Calculate the required motor torque from the load inertia, acceleration/deceleration time and constant-velocity time.

6. Calculation of motor

Select a motor that meets the above 3 to 5 requirements.

Description on the items related to motor selection

Selecting Motor Capacity

1. Torque

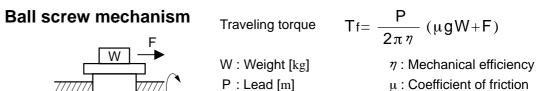
(1) Peak torque

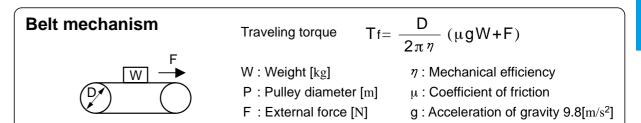
Indicate the maximum torque that the motor requires during operation (mainly in acceleration and deceleration steps). The reference value is 80% or less of the maximum motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

(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





F: External force [N]

(3) Effective torque

Indicates a root-mean-square value of the total torque required for running and stopping the motor per unit time. The reference value is approx. 80% or less of the rated motor torque.

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

Ta: Acceleration torque [N·m] ta: Acceleration time [s] tc: Cycle time [s] Tf: Traveling torque [N·m] tb: Constant-velocity time [s] (Run time + Stop time) Td: Deceleration torque [N·m] td: Deceleration time [s]

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later. 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	Shape	J calculation formula
Disk	$J = \frac{1}{8} WD^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$	Hollow cylinder	$J = \frac{1}{8} W(D^2 + d^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $d : Inner diameter [m]$
Prism	$J = \frac{1}{12} W (a^2 + b^2) [kg \cdot m^2]$ $W : Weight [kg]$ a, b, c : Side length [m]	Uniform rod	$J = \frac{1}{48} W(3D^2 + 4L^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $L : Length [m]$
Straight rod	$J = \frac{1}{3} WL^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $L : Length [m]$	Separated rod	$J = \frac{1}{8} WD^{2} + WS^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $S : Distance [m]$
Reduction gear	Inertia on shaft "a" $J = J_1 + (\frac{n_2}{n_1})^2 J_2[\mathrm{kg \cdot m^2}]$ $n_1 : \text{A rotational speed of a shaft } [\mathrm{r/min}]$ $n_2 : \text{A rotational speed of b shaft } [\mathrm{r/min}]$		
Conveyor	$J = \frac{1}{4} WD^{2} [kg \cdot m^{2}]$ $W : Workpiece weight on conveyor [kg]$ $D : Drum diameter [m]$ * Excluding drum J	Ball screw	$J = J_B + \frac{W \cdot P^2}{4\pi^2} \text{ [kg·m²]}$ $W : \text{Weight [kg]}$ $P : \text{Lead}$ $JB : J \text{ of ball screw}$

If weight (W [kg]) is unknown, calculate it with the following formula:

Weight W[kg]=Density ρ [kg/m³] x Volume V[m³]

Density of each material

Iron $\rho = 7.9 \times 10^3 [kg/m^3]$ Aluminum $\rho = 2.8 \times 10^{3} \, [kg/m^{3}]$

Brass $\rho = 8.5 \times 10^3 \, [kg/m^3]$

Selecting Motor Capacity To drive ball screw mechanism

To drive ball screw mechanism

1. Example of motor selection for driving ball screw mechanism

Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$

Travel distance 0.3[m]

Coupling inertia $Jc = 10 \times 10^{-6} [kg \cdot m^2]$ (Use manufacturer-specified catalog value, or calculation value.)

2. Running pattern :

Acceleration time ta = 0.1 [s]Constant-velocity time tb = 0.8 [s]Deceleration time td = 0.1 [s]Cycle time tc = 2[s]Constant-velocity time Deceleration Stop time Travel distance 0.3[m]

BW = $\rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5$ 3. Ball screw weight

 $JL = JC + JB = JC + \frac{1}{8}BW \times BD^{2} + \frac{WA \cdot BP^{2}}{4\pi^{2}}$ 4. Load inertia = $0.00001 + (1.24 \times 0.02^2) / 8 + 10 \times 0.02^2 / 4\pi^2$ $= 1.73 \times 10^{-4} [\text{kg} \cdot \text{m}^2]$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM = $1.73 \times 10^{-4} / 0.14 \times 10^{-4}$ Therefore, the inertia ratio is "12.3" (less than "30") (In case of MSME 100 W motor: $JM = 0.051 \times 10^{-4}$ Therefore, the inertia ratio is "33.9".)

7. Calculation of maximum velocity (Vmax)

 $\frac{1}{2}$ ×Acceleration time×Vmax+Constant-velocity time×Vmax+ $\frac{1}{2}$ ×Deceleration time×Vmax = Travel distance $\frac{1}{2}$ × 0.1 × Vmax + 0.8 × Vmax + $\frac{1}{2}$ × 0.1 × Vmax = 0.3 $0.9 \times Vmax = 0.3$ = 0.3 / 0.9 = 0.334 [m/s]

8. Calculation of motor velocity (N [r/min]) Ball screw lead per resolution: BP = 0.02 [m]

N = 0.334 / 0.02 = 16.7 [r/s]= $16.7 \times 60 = 1002 [r/min] < 3000 [r/min]$ (Rated velocity of MSME 200W motor)

9. Calculation of torque

Traveling torque Tf = $\frac{BP}{2\pi B n}$ (µgWA + F) = $\frac{0.02}{2\pi \times 0.9}$ (0.1×9.8×10+0) Acceleration torque $T_a = \frac{(J_L + J_M) \times 2\pi N[r/s]}{\text{Acceleration time [s]}} + \text{Traveling torque}$ $= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$ $= 0.196 + 0.035 = 0.231 [N \cdot m]$

To drive ball screw mechanism **Example of motor selection**

Deceleration torque
$$T_{d} = \frac{(J_{L} + J_{M}) \times 2\pi N[r/s]}{Deceleration time [s]} - Traveling torque$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} - 0.035$$

$$= 0.196 - 0.035 = 0.161 [N \cdot m]$$

10. Verification of maximum torque

Acceleration torque = $Ta = 0.231 [N \cdot m] < 1.91 [N \cdot m]$ (Maximum torque of MSME 200 W motor)

11. Verification of effective torque

Trms =
$$\sqrt{\frac{\text{Ta}^2 \times \text{ta} + \text{Tf}^2 \times \text{tb} + \text{Td}^2 \times \text{td}}{\text{tc}}}$$

= $\sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8 + 0.161^2 \times 0.1}{2}}$
= 0.067 [N·m] < 0.64 [N·m] (Rated torque of MSME 200 W motor)

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torque margin is significantly large.

Example of motor selection

Example of motor selection for timing belt mechanism

1.Mechanism Workpiece weight WA = 3[kg] (including belt)

> Pulley diameter PD = 0.05[m]

Pulley weight WP= 0.5[kg] (Use manufacturer-specified catalog value, or calculation value.)

Mechanical efficiency $B\eta = 0.8$

Jc = 0 (Direct connection to motor shaft) Coupling inertia

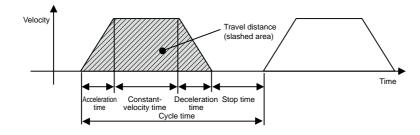
Belt mechanism inertia JB

2. Running pattern

Acceleration time ta = 0.1[s]Constant-velocity time tb = 0.8[s]Deceleration time td = 0.1[s]Cycle time tc = 2[s]

Pulley inertia

Travel distance 1[m]



3. Load inertia JL = JC + JB + JP

= JC +
$$\frac{1}{4}$$
WA × PD² + $\frac{1}{8}$ WP × PD² × 2
= 0 + $\frac{1}{4}$ × 3 × 0.05² + $\frac{1}{8}$ × 0.5 × 0.05² × 2
= 0.00156 = 15.6 × 10⁻⁴ [kg·m²]

4. Provisional motor selection

In case of MSME 750 W motor : $JM = 0.87 \times 10^{-4} \, [kg \cdot m^2]$

5. Calculation of inertia ratio

JL / JM =
$$15.6 \times 10^{-4}$$
 / 0.87×10^{-4} Therefore, the inertia ratio is "17.9" (less than "20")

Selecting Motor Capacity Example of motor selection

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 = 1.11 / 0.157 = 7.08[r/s]
= 7.08 × 60 = 424.8[r/min] < 3000[r/min] (Rated velocity of MSME 750 W motor)

8. Calculation of torque

Traveling torque
$$T_f = \frac{P_D}{2\,\eta} (\mu gWA + F) = \frac{0.05}{2\,\times\,0.8} \ (0.1\,\times\,9.8\,\times\,3 + 0)$$

$$= 0.061[\,N\cdot m]$$
Acceleration torque
$$T_a = \frac{(JL + JM)\,\times\,2\pi N[\,r/s\,]}{Acceleration\ time[\,s]} + Traveling\ torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} + 0.061$$

$$= 0.751 + 0.061 = 0.812[\,N\cdot m\,]$$
Deceleration torque
$$T_d = \frac{(JL + JM)\,\times\,2\pi N[\,r/s\,]}{Deceleration\ time[\,s]} - Traveling\ torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} - 0.061$$

$$= 0.751 - 0.061 = 0.69[\,N\cdot m\,]$$

9. Verification of maximum torque

Acceleration torque $Ta = 0.812[N \cdot m] < 7.1[N \cdot m]$ (Maximum torque of MSME 750 W motor)

10. Verification of effective torque

Trms =
$$\sqrt{\frac{\text{Ta}^2 \times \text{ta} + \text{Tf}^2 \times \text{tb} + \text{Td}^2 \times \text{td}}{\text{tc}}}$$

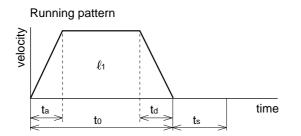
= $\sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$
= 0.241 [N·m] < 2.4 [N·m] (Rated torque of MSME 750 W motor)

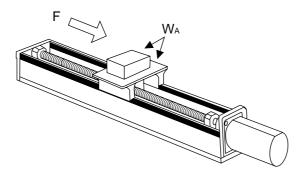
11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

Request for Motor Selection I : Ball screw drive

1. Driven mechanism and running data

1) Travel distance of the work load per one cycle	ℓ1:	mm
2) Cycle time	to:	S
(Fill in items 3) and 4) if required.)		
3) Acceleration time	ta:	s
4) Deceleration time	td:	s
5) Stopping time	ts:	s
6) Max. velocity	V:	mm/s
7) External force	F:	N
8) Positioning accuracy of the work load	±	mm
9) Total weight of the work load and the table	Wa:	kg
10) Power supply voltage		V
11) Diameter of the ball screw		mm
12) Total length of the ball		mm
13) Lead of the ball screw		mm





14) Traveling direction (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:

F12

Request Sheet for Motor Selection

Request for Motor Selection II: Timing pulley + Ball screw drive

. Driven mechanism and ru	nning data			Motor	side	Ball scr	ew side
1) Travel distance of the work load per one cycle	ℓ1:	mm	15) Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
2) Cycle time	to:	S	16) Weight of the pulley	W1:	kg	W2:	kg
(Fill in items 3) and 4) if required.)		(or item 17) and 18))				
3) Acceleration time	ta:	s	17) Width of the pulley	L ₁ :		mm	
4) Deceleration time	t _d :	s	18) Material of the pulley				
5) Stopping time	ts:	s	19) Weight of the belt	WM:		kg	
6) Max. velocity	V:	mm/s	Running pattern				
7) External force	F:	N					
8) Positioning accuracy of the work load	±	mm	νelocity				
9) Total weight of the work load and the table	WA:	kg	ta to	td	ts >	time	_
0) Power supply voltage		V	F	Ŋ	V Α		
1) Diameter of the ball screw		mm			>		
2) Total length o the ball screw		mm					
3) Lead of the ball screw		mm				(0)	D ₂ (W ₂)
4) Traveling			L ₁			V M	
			L' >	// \	D1(W1)	

2. Other data

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

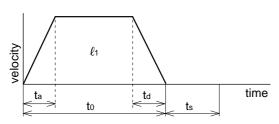
Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

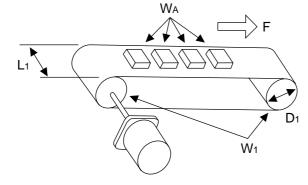
Request for Motor Selection **Ⅲ**: Belt drive

1. Driven mechanism and running data

1) Travel distance of the work load per one cycle	ℓ1:	mm	
2) Cycle time	to:	S	
(Fill in items 3) and 4) if required.)			
3) Acceleration time	ta:	S	
4) Deceleration time	ta:	S	
5) Stopping time	ts:	S	
6) Max. velocity	V:	mm/s	
7) External force	F:	N	
8) Positioning accuracy of the work load	±	mm	
9) Total weight of the work load	Wa:	kg	
10) Power supply voltage		V	
11) Weight of the belt	Wm:	kg	
12) Diameter of the driving pulley	D ₁ :	mm	
13) Total weight of the pulley	W1:	kg	

Running pattern





ſΩ	r item	14)	and	15))
(U	ı ileiii	14)	anu	13))

14)Width	of the	pulley
----------	--------	--------

L1:	mr

15) M	laterial	of the	pulley
-------	----------	--------	--------

16) T	raveling direction
((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:

F14

Request Sheet for Motor Selection

Request for Motor Selection IV: Timing pulley + Belt drive

								•	
1. Driven mechanis	sm and runi	ning	data			N	Notor side	Belt s	ide
1) Travel distance of the work	load per one cycle	ℓ 1:		mm	16) Diameter of the pulley	D3:	mm	D4:	mn
2) Cycle time		to:		s	17) Weight of the pulley	W3:	kg	W4:	k
(Fill in items 3) and 4)	if required.)				(or item 18) and 19))			_
3) Acceleration time		ta:		s	18) Width of the pulley	y	L2:	mm	
4) Deceleration time		td:		s	19) Material of the pul	ley			
5) Stopping time		ts:		s	20) Weight of the belt		WL:	kg	
6) Max. velocity		V:		mm/s	21) Traveling direction (horizontal, vertica				
7) External force		F:		N	Running pattern				
Positioning accuracy of	f the work load	±		mm	2				
9) Total weight of the work lo	ad and the table	WA:		kg	νelocity ℓ1				
10) Power supply voltaç	ge			V	ta to	t d≪	ts >	time	
11) Weight of motor site	e belt	WM:		kg					7
	Motor side	 е	Belt	side			,	WĻ Ž	√ L:
12) Diameter of the pully	D ₁ :	mm	D2:	mm		WA			\bigcirc
13) Weight of the pulley	W1:	kg	W ₂ :	kg	D2(W2)				^ 04(W4
(or item 14) and 15))			•		W _M <				
14) Weight of the belt		L ₁ :		mm	VVIVI				
15) Material of the pulle	ey						I	Dз(Wз)	
					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:

Request for Motor Selection V: Turntable drive

1104		1010101 00101	stion • - raintable and
1. Driven mechanism and rur	nning da	nta	
1) Travel distance of the work load per one cycle	dı:	deg	14) Dimensions of the work load a:
2) Cycle time	to:	s	b:
(Fill in items 3) and 4) if required.)			C:
3) Acceleration time	ta:	S	15) Number of work loads
4) Deceleration time	td:	s	Running pattern
5) Stopping time	ts:	S	
6) Max. rotational speed of the table	v:	deg/s	velocity q1
(or)	V:	r/s	ta to
7) Positioning accuracy of the work load	±	deg	<u></u>
8) Weight of one work load	Wa:	kg	W _A

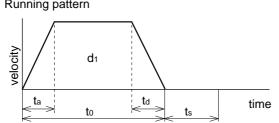
R₁:

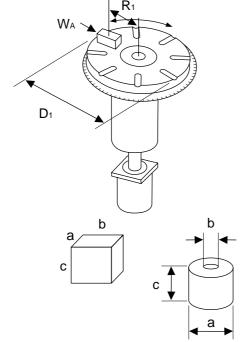
W1:

T1:

		Prism		Cylinder
4) Dimensions of the work load	a:	mm	a:	mm
	L .		L .	
	b:	mm	b:	mm
	c:	mm	c:	mm
			1	

pcs





2. Other data

9) Driving radius of the center of gravity of the

12) Diameter of the table support

10) Diameter of the table

13) Power supply voltage

11) Mass of the table

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

mm

 mm

kg

mm

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

F16

Request Sheet for Motor Selection

Request for Motor Selection VI : Timing pulley + Turntable drive

. Driven mechan	ism and run	ning	data			Motor sid	de	Turntab	le side
1) Travel distance of the work	load per one cycle	d1:		deg	16) Diameter of the pulley	D2:	mm	D3:	m
2) Cycle time		to:		s	17) Weight of the pulley	W2:	kg	W3:	ŀ
(Fill in items 3) and 4	4) if required.)				(or item 18) and 19))				
3) Acceleration time		ta:		s	18) Width of the pulley		L1:		mı
		La.			 19) Material of the pulley				
4) Deceleration time		td:		S	20) Weight of the belt		W _M :		
5) Stopping time		ts:		s	20) Weight of the ben		V V IVI.		
6) Max. rotating spee	ed of the table	v:		deg/s	Running pattern				
	(or)	V:		r/s	<u></u>				
7) Positioning accuracy	of the work load	±		deg	velocity		\		
8) Weight of one wor	k load	Wa:		kg	ta to	td ≥	ts	→	time
9) Driving radius of the cent	er of gravity of the	R ₁ :		mm		,,, >	R1		
0) Diameter of the tal	ble	D1:		mm		WA			
1) Mass of the table		W1:		kg		D1			
2) Diameter of the tal	ble support	T1:		mm			-		
3) Power supply volta	age			V	D2(W2)		U) 	
	(Prism)		(Cylind	er)	L1	•		<i>)</i> D:	3(W3)
4) Dimension of the work load	a:	mm	a:	mm	↑	W	М		
	b:	mm	b:	mm		b		b	+
	c:	mm	c:	mm	a c		a		,
5) Number of work lo	ads			pcs	_	/ <i>/</i>		▼ C	→

2. Other data

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

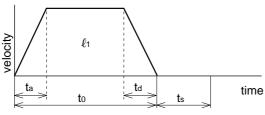
•	,
	Company name :
	Department/Section :
	Name :
	Address:
	Tel:
	Fax:
	E-mail address:

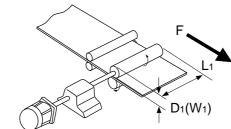
F17

Request for Motor Selection VII: Roller feed drive

1. Driven mechanism and running data

1) Travel distance of the work load per one cycle	ℓ 1:	mm	
2) Cycle time	to:	s	Running pattern
(Fill in items 3) and 4) if required	.)		city
3) Acceleration time	ta:	S	velocity
4) Deceleration time	td:	s	ta to
5) Stopping time	ts:	S	
6) Max. velocity	v:	mm/s	
7) External pulling force	F:	N	6
8) Positioning accuracy of the work load	±	mm	
9) Total weight of the work load		pcs	
10) Power supply voltage		V	(or item 13) and
11) Diameter of the roller	D ₁ :	mm	13) Width of the roll
12) Mass of the roller	W ₁ :	kg	14) Material of the





14))

L ₁ :		mm

14) Material of the roller

2. Other data

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

Company name:

Department/Section:

Name:

Address:

Tel:

Fax:

F18

E-mail address:

Request Sheet for Motor Selection

Request for Motor Selection VIII: Driving with Rack & Pinion

1) Travel distance of the work load per one cycle mm 2) Cycle time to: Running pattern (Fill in items 3) and 4) if required.) velocity 3) Acceleration time ta: td time ૃta ્ 4) Deceleration time td: 5) Stopping time ts: 6) Max. velocity V: mm/s F: 7) External force Ν 8) Positioning accuracy of the work load mm

kg

 mm

kg

2. Other data

9) Total weight of the work load

10) Power supply voltage

11) Diameter of the pinion

13) Traveling direction (horizontal, vertical, etc)

12) Mass of the pinion

1. Driven mechanism and running data

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

WA:

D3:

Wa:

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

CW limit sensor

CCW limit sensor

38

41

45

46

47

INP-

COM-

PULSH2

SIGNH1

SIGNH2

between 500kpps and 4Mpps

44 PULSH1

* Pulse train interface exclusive for line driver

Pulse train interface exclusive for line driver.

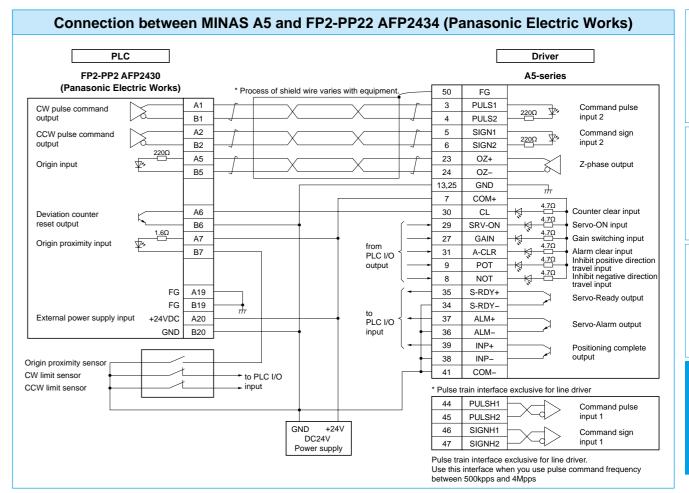
Use this interface when you use pulse command frequency

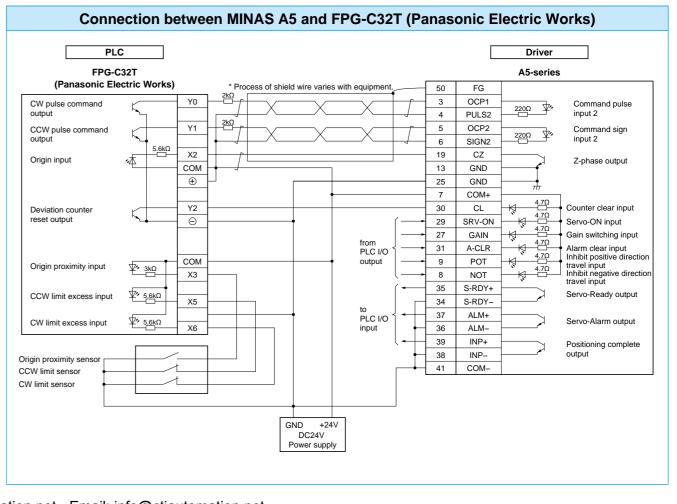
Connection between MINAS A5 and FPG-PP12 AFPG432 (Panasonic Electric Works) PLC Driver FPG-PP12 AFPG432 A5-series (Panasonic Electric Works) 50 FG A1 3 PULS1 CW pulse command Command pulse 220Ω 🛂 B1 4 PULS2 A2 SIGN1 Command sign CCW pulse command 220Ω 💯 input 2 B2 output SIGN2 6 A4 23 OZ+ Origin input Z-phase output В3 24 OZ-GND 13,25 7 COM+ Α7 30 CL Counter clear input Deviation counter 4.7Ω reset output В7 29 SRV-ON Ŕ Servo-ON input 4.7Ω B4 27 Gain switching input GAIN Origin proximity input 4.7Ω A5 PLC I/O 31 A-CLR Alarm clear input 4.7Ω Inhibit positive direction POT 9 travel input Inhibit negative direction travel input NOT FG A19 35 S-RDY+ Servo-Ready output S-RDY-B19 34 External power supply input +24VDC 37 A20 PLC I/O AI M+ Servo-Alarm output GND B20 36 ALM-39 INP+ Positioning complete 38 INP-Origin proximity sensor 41 COM-CW limit sensor to PLC I/O CCW limit sensor * Pulse train interface exclusive for line driver 44 PULSH1 Command pulse 45 PULSH2 GND SIGNH1 46 Command sign DC24V SIGNH2 input 1 Power supply Pulse train interface exclusive for line driver. Use this interface when you use pulse command frequency between 500kpps and 4Mpps

GND +24V

DC24V

Power supply



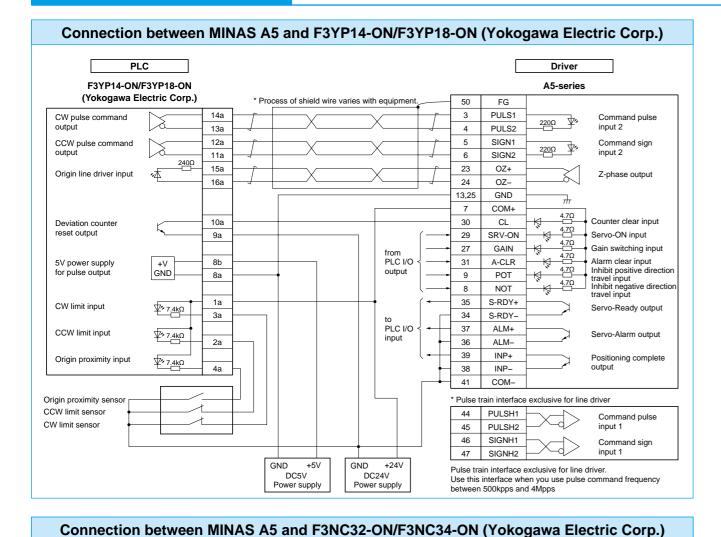


Positioning complete

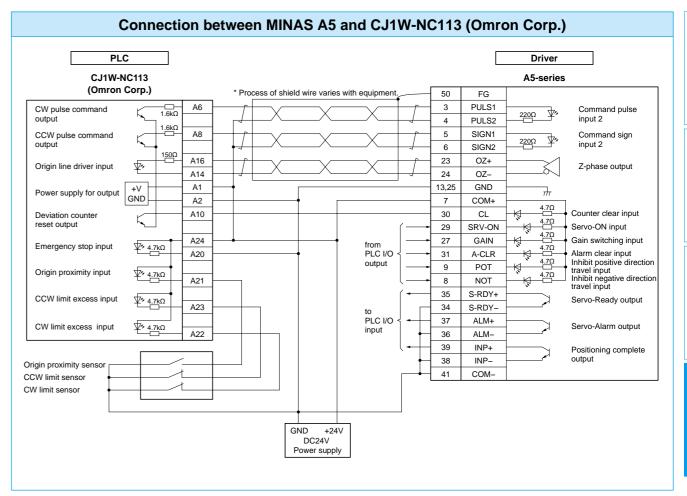
Command pulse

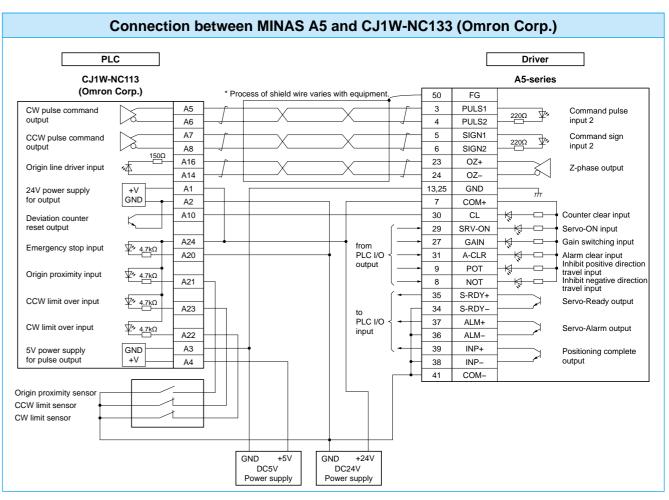
Command sign

output



PLC Driver F3NC32-ON/F3NC34-ON A5-series (Yokogawa Electric Corp.) 50 FG За 3 PULS1 Command pulse Pulse output A 220Ω 🛂 4a 4 PULS2 5a SIGN1 Command sign Pulse output B 220Ω 💯 input 2 6a SIGN2 6 Encoder Z-phase output + 19a 23 OZ+ Z-phase output Encoder Z-phase output -24 OZ-20a GND 13,25 7 COM+ 14a 30 CL Counter clear input Deviation counter 4.7Ω reset output 29 SRV-ON Ŕ Servo-ON input 4.7Ω External power supply 24VDC input 1a 27 GAIN Gain switching input 4.7Ω External power supply 24VDC input 1b PLC I/O 31 A-CLR Alarm clear input Inhibit positive direction POT 9 travel input Inhibit negative directio travel input NOT Contact point input COM 35 S-RDY+ Servo-Ready output 7.4kΩ Negative direction 8a 34 S-RDYlimit input PLC I/O 37 AI M+ ₹ 7.4kΩ Servo-Alarm output 9a 36 ALMlimit input 39 INP+ Positioning complete 7.4kΩ Origin input 7a 38 INP-41 COM-Origin proximity senso * Pulse train interface exclusive for line driver CCW limit sensor 44 PULSH1 Command pulse





+24V

GND

DC24V

Power supply

45

46

PULSH2

SIGNH1

SIGNH2

between 500kpps and 4Mpps

Pulse train interface exclusive for line driver.

Use this interface when you use pulse command frequency

Command sign

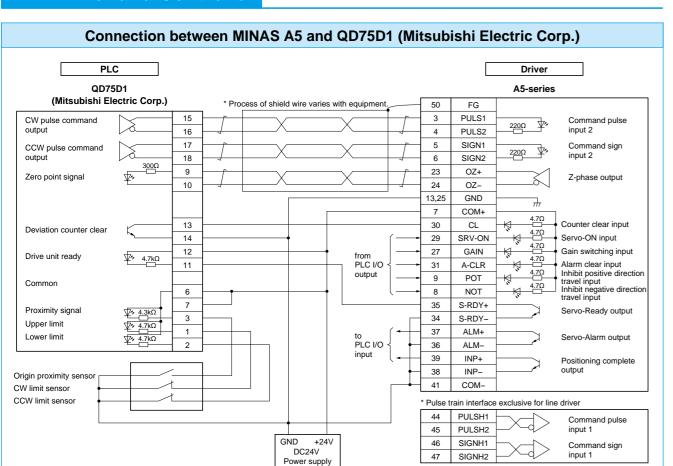
input 1

CW limit sensor

DV0P4132

Connection between Replacing old model servo driver **Driver and Controller**

connector.



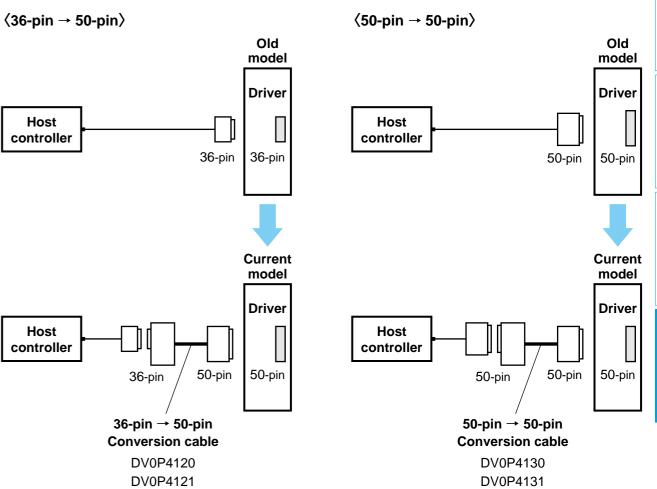
Pulse train interface exclusive for line driver.

between 500kpps and 4Mpps

Use this interface when you use pulse command frequency

PLC								Driver	
KV-5000								A5-series	
(keyence	Corp.)	* Process of shie	ld wire varies wi	th equipment.	$\overline{}$	50	FG		
Origin sensor input X axis limit switch CW	4.3kΩ 3	2kΩ	\rightarrow	\sim		3	PULS1 PULS2	220Ω 🛂	Command pulse input 2
X axis limit switch CCW	4.3kΩ 4	2kΩ	X	\rightarrow		5 6	SIGN1 SIGN2	220Ω 🛂	Command sign input 2
	1.2kΩ 15		\sim	\sim		23 24	OZ+ OZ-		Z-phase output
X axis CW	16					13,25 7	GND COM+	711	
X sxis deviation counter clear	19			from PLC I/O output		30 29 27 31 9 8 35	CL SRV-ON GAIN A-CLR POT NOT S-RDY+	479 179 179 179 179 179 179 179 179 179 1	Counter clear input Servo-ON input Gain switching input Alarm clear input Inhibit positive direction travel input Inhibit negative direction travel input Servo-Ready output
X axis CCW	36		•	to PLC I/O { input		34 37 36 39	S-RDY- ALM+ ALM- INP+		Servo-Alarm output
gin proximity sensor				` 		38 41	INP- COM-		Positioning complete output
W limit sensor	+				,	Pulse t	rain interface	exclusive for line	e driver
						44 45	PULSH1 PULSH2		Command pulse input 1
		G	SND +24V DC24V			46 47	SIGNH1 SIGNH2		Command sign input 1

F24



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	Dogo E26
(36-pin)	Torque control	DV0P4121	Page F26
	Position control	DV0P4130	Dave F07
V series (50-pin)	Velocity control	DV0P4131	Page F27
	Torque control	DV0P4132	Page F28

^{*} For external dimensions, refer to P. 167.

Conversion wiring table

		DV0P4120		DV0P4121			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
2	24	Z-phase output	OZ-	24	Z-phase output	OZ-	
3	13	Signal ground	GND	13	Signal ground	GND	
4	19	Z-phase output	CZ	19	Z-phase output	CZ	
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2	
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1	
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2	
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1	
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH	
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL	
14	14	Speed command input	SPR	NC			
15	15	Signal ground	GND	15	Signal ground	GND	
16	43	Speed monitor output	SP	43	Speed monitor output	SP	
17	25	Signal ground	GND	25	Signal ground	GND	
18	50	Frame ground	FG	50	Frame ground	FG	
19	21	A-phase output	OA+	21	A-phase output	OA+	
20	22	A-phase output	OA-	22	A-phase output	OA-	
21	48	B-phase output	OB+	48	B-phase output	OB+	
22	49	B-phase output	OB-	49	B-phase output	OB-	
23	NC			NC			
24	NC			NC			
25	39	Positionning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positionning complete output Speed arrival output	COIN+ AT-SPEED+	
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
	34	Positionning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	34	Positionning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	
28	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (–)	ALM-	
	38	Servo-Ready output (–)	S-RDY-	38	Servo-Ready output (–)	S-RDY-	
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-	
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL	
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL	
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE	
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL	
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR	
35	17	Signal ground	GND	17	Signal ground	GND	
36	42	Torque monitor output	IM	42	Torque monitor output	IM	

F26

	L	DV0P4130			DV0P4131	1
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		ZSP	12	Zero-speed detection output signal	ZSP
		Zero-speed detection output signal	-		1 1 0	
13	13 NC	Torque in-limit signal output	TLC	13	Torque in-limit signal output	TLC
14	NC 45	0: 1	CUE	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	Comment of the same of the sam	
34	NC	Command pales in industrial input	1141	NC		
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+
36	NC NC	Servo-Ready output	0-ND1+	NC NC	Servo-Ready Output	0-KD1+
		Conto Alormo autout	ALM.		Carrie Alarma autaut	A1.N4.
37	37 NC	Servo-Alarm output	ALM+	37 NC	Servo-Alarm output	ALM+
38	NC 20	Desitionning or selected and	COIN	NC 20	Consideration outside	AT ODEED
39	39	Positionning complete output	COIN+	39	Speed arrival output	AT-SPEED-
40	40	Torque in-limit signal output	TLC	40	Torque in-limit signal output	TLC
	10	External brake release signal (–)	BRK-OFF-	10	External brake release signal (–)	BRK-OFF-
	34	Positionning complete output (–)	COIN-	34	Speed arrival output (–)	AT-SPEED-
41	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (–)	ALM-
	38	Servo-Ready output (–)	S-RDY-	38	Servo-Ready output (–)	S-RDY-
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (–)	COM-
42	42	Torque monitor output	IM	42	Torque monitor output	IM
43	43	Speed monitor output	SP	43	Speed monitor output	SP
44	25	Signal ground	GND	25	Signal ground	GND
45	25	Signal ground	GND	25	Signal ground	GND
46	25	Signal ground	GND	25	Signal ground	GND
47	NC			NC		
48	48	B-phase output	OB+	48	B-phase output	OB+
49	49	B-phase output	OB-	49	B-phase output	OB-
	$\overline{}$	Frame ground			Frame ground	FG

^{* &}quot;NC" is no connect.

F27

^{* &}quot;NC" is no connect.

	DV0P4132				
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol		
1	8	CW over-travel inhibit input	CWL		
2	9	CCW over-travel inhibit input	CCWL		
3	NC				
4	NC				
5	NC				
6	NC				
7	7	Power supply for control signal (+)	COM+		
8	NC				
9	NC				
10	NC				
11	11	External brake release signal	BRK-OFF+		
12	12	Zero-speed detection output signal	ZSP		
13	13	Torque in-limit signal output	TLC		
14	NC	rorque in innic signal output	120		
15	15	Signal ground	GND		
16	16		TRQR		
17	17	Torque command input Signal ground	GND		
18	18	CW direction torque limit input	CWTL		
19	19	Z-phase output	CZ		
20	NC	z priado dalpar	02		
21	21	A-phase output	OA+		
22	22		OA-		
23	23	A-phase output	OZ+		
		Z-phase output			
24	24	Z-phase output	OZ-		
25	50	Frame ground	FG		
26	26	Speed zero clamp input	ZEROSPD		
27	27	Gain switching input	GAIN		
28	NC		2211211		
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		

4	NC		
5	NC		
6	NC		
7	7	Power supply for control signal (+)	COM+
8	NC		
9	NC		
10	NC		
11	11	External brake release signal	BRK-OFF+
12	12	Zero-speed detection output signal	ZSP
13	13	Torque in-limit signal output	TLC
14	NC		
15	15	Signal ground	GND
16	16	Torque command input	TRQR
17	17	Signal ground	GND
18	18	CW direction torque limit input	CWTL
19	19	Z-phase output	CZ
20	NC		
21	21	A-phase output	OA+
22	22	A-phase output	OA-
23	23	Z-phase output	OZ+
24	24	Z-phase output	OZ-
25	50	Frame ground	FG
26	26	Speed zero clamp input	ZEROSPD
27	27	Gain switching input	GAIN
28	NC	5 .	
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	Control mode contorming in put	0022
34	NC		
35	35	Servo-Ready output	S-RDY+
36	NC	Cervo-ready output	0-KD1+
37	37	Servo-Alarm output	ALM+
38	NC NC	Servo-Alaim output	ALIVIT
39	39	Speed arrival output	AT-SPEED+
40	40	Speed arrival output Torque in-limit signal output	
40		, , ,	TLC
	10	External brake release signal (–)	BRK-OFF-
44	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

17	17	Signal ground	GND
18	18	CW direction torque limit input	CWTL
19	19	Z-phase output	CZ
20	NC		
21	21	A-phase output	OA+
22	22	A-phase output	OA-
23	23	Z-phase output	OZ+
24	24	Z-phase output	OZ-
25	50	Frame ground	FG
26	26	Speed zero clamp input	ZEROSPD
27	27	Gain switching input	GAIN
28	NC		
29	29	Servo-ON input	SRV-ON
30	NC		
31	31	Alarm clear input	A-CLR
32	32	Control mode switching input	C-MODE
33	NC		
34	NC		
35	35	Servo-Ready output	S-RDY+
36	NC		
37	37	Servo-Alarm output	ALM+
38	NC		
39	39	Speed arrival output	AT-SPEED+
40	40	Torque in-limit signal output	TLC
	10	External brake release signal (-)	BRK-OFF-
	34	Speed arrival output (-)	AT-SPEED-
41	36	Servo-Alarm output (–)	ALM-
	38	Servo-Ready output (–)	S-RDY-
	41	Power supply for control signal (–)	COM-
42	42	Torque monitor output	IM
43	43	Speed monitor output	SP
44	25	Signal ground	GND
45	25	Signal ground	GND
46	25	Signal ground	GND
47	NC		
48	48	B-phase output	OB+
49	49	B-phase output	OB-
50	50	Frame ground	FG
NC" is	s no co	nnect.	F28

DV0P		
Part No.	Title	Page
DV0P1450	Surge absorber (3-phase)	153
DV0P1460	Noise Filter for Signal Lines	153
DV0P220	Reactor	179
DV0P221	Reactor	179
DV0P222	Reactor	179
DV0P223	Reactor	179
DV0P224	Reactor	179
DV0P225	Reactor	179
DV0P227	Reactor	179
DV0P228	Reactor	179
DV0P2990	Battery For Absolute Encoder	177
DV0P3410	Noise Filter	151
DV0P4120	Interface conversion cable	167
DV0P4121	Interface conversion cable	167
DV0P4130	Interface conversion cable	167
DV0P4131	Interface conversion cable	167
DV0P4132	Interface conversion cable	167
DV0P4132 DV0P4170	Noise Filter	150
DV0P4190	Surge absorber (Single phase)	153
DV0P4220	Noise Filter	150
DV0P4280	External Regenerative Resistor: 50Ω 25W	180
DV0P4281	External Regenerative Resistor: 100Ω 25W	180
DV0P4282	External Regenerative Resistor: 25Ω 50W	180
DV0P4283	External Regenerative Resistor: 50Ω 50W	180
DV0P4284	External Regenerative Resistor: 30Ω100W	180
DV0P4285	External Regenerative Resistor: 20Ω130W	180
DV0P4290	Connector Kit for Motor/Encoder Connection	172
DV0P4310	Connector Kit for Motor/Encoder Connection	174
DV0P4320	Connector Kit for Motor/Encoder Connection	174
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DV0P4330 DV0P4340	Connector Kit for Motor/Encoder Connection	
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DV0P4350	Interface Connector	168
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DV0P4380	Connector Kit for Motor/Encoder Connection	172
DV0P4430	Battery Box	177
DV0PM20010	Connector Kit: Encoder	169
DV0PM20024	Connector Kit: RS485, 232	168
DV0PM20025	Connector Kit: Safety	168
DV0PM20026	Connector Kit: External Scale	169
DV0PM20027	Mounting bracket: A-frame	178
DV0PM20028	Mounting bracket: B-frame	178
DV0PM20029	Mounting bracket: C-frame	178
DV0PM20030	Mounting bracket: D-frame	178
	-	
DV0PM20031	Connector Kit: Analog Monitor Signal	169
DV0PM20032	Connector for Power Supply Input Connection (A to D-frame (Single row type))	170
DV0PM20033	Connector for Power Supply Input Connection	170
	(A to D-frame (Double row type))	
DV0PM20034	Connector for Motor Connection (A to D-frame)	171
DV0PM20035	Connector Kit for Motor/Encoder Connection	173
DV0PM20036	Connector Kit for Motor/Encoder Connection	173
DV0PM20037	Connector Kit for Motor/Encoder Connection	174
DV0PM20038	Connector Kit for Motor/Encoder Connection	174
DV0PM20039	Connector Kit for Motor/Encoder Connection	175
DV0PM20040	Connector Kit for Motor/Brake Connection	176
DV0PM20042	Noise Filter	150
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