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

Repair

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

URL

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

Contact to



ISO9001 Certificate division

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

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

14001

ISO14001

Certificate

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

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

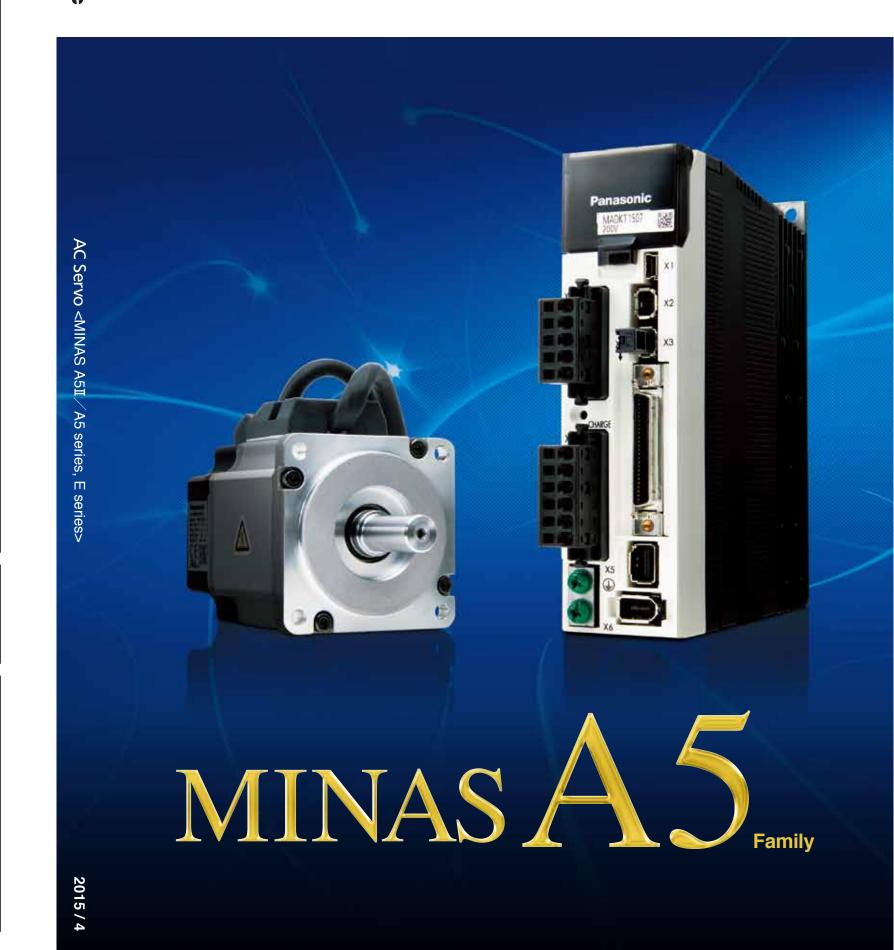
· Printed colors may be slightly different from the actual products.

• Specifications and design of the products are subject to change without n Downloaded From Oneyac.com

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Panasonic

AC Servo MINAS A5 II / A5 series







Two-degree-of-freedom control system

All-in-one type

Rated output: 50 W to 15.0 kW

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

All-in-one type

Rated output: 50 W to 15.0 kW

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

Two-degree-of-freedom control system

Position control type

Rated output: 50 W to 5.0 kW

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

Position control type

Rated output: 50 W to 5.0 kW

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

Slim design and position control type





Rated output: 50 W to 400 W

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

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

High-speed communication "Realtime Express" support model

Ultra high-speed Network type



Rated output:

50 W to 15.0 kW

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

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

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

DC 24 V type



Rated output:

10 W. 20 W. 30 W

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

Linear motor control, DC 24 V type



Capacity of applying Linear motor:

Compatible with 30 W rotary AC servo motor

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

Linear motor and DD motor control type



Capacity of applying Linear motor:

Compatible with 15.0 kW rotary AC servo motor

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

EtherCAT communication driver type



Rated output:

50 W to 15.0 kW

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

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Contents

A5II. A5IIE. A5. A5E series

Applicable Peripheral Equipments 19

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

A5IIE, A5E series (Position control type) --- 31

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

A5II Series Features -

Driver Specifications

Wiring to the Connector

Control Circuit Diagram

Dimensions of Driver

Special Order Product -Model Designation

Motor Specifications -

Cable part No. Designation Specifications of Motor connector -

Battery for Absolute Encoder

External Regenerative Resister

Surge Absorber for Motor Brake

List of Peripheral Equipments

Encoder Cable

Motor Cable

Brake Cable

Interface Cable

Connector Kit-

Reactor

Mounting Bracket

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

Wiring to the Connector X3 ··

Wiring to the Connector X4

Wiring to the Connector X5

Wiring to the Connector X6

Table of Part Numbers and Options

Motor Specifications, Description

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Wiring Diagram

Safety Function

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

Information	····· 246
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General-purpose RS485 communication AE-LINK support type

series



Rated output:

50 W to 5.0 kW

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

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

Quicker, Wiser and Friendlier A5II series

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

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







 The above is a measure based on our test environment





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

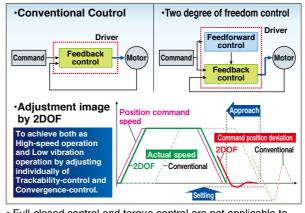


Realizes guick and accurate movement. Fast response & High-precision positioning

Adopted New Algorithm

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

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

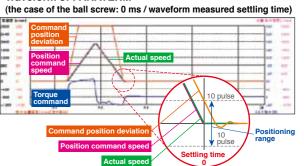


· Full-closed control and torque control are not applicable to 2DOF control system.

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

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

Waveform of PANATERM



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

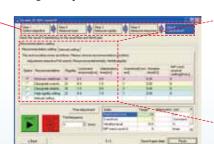
Greatly improved "operability", easy-to-use software "PANATERM".

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

· Adjustment is completed in only 3 processes



· Fit gain adjustment window



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

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

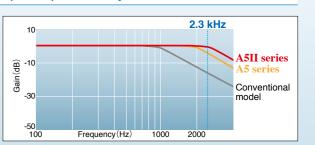
· Automatically proposes various settings

Recom	mendation setting M	onuel petti	10	
Theore	resultacomes as to	fors Pier	nie choose reco	mentation
Adv	strest objectve: Full	read, fie	spanse pielsre	otisky, Midde
Select	Paconimendation	Pigidity	Command response[ms]	Stabilization (mmfrm)
2	Morram stabilizati.	22	92	0.0
F	Deskyrete overeft	22	34	10
B 70	Designeta stecular.	13	15	95
	PHYS FORTY SHETTY	22	34	1.0
	Meson sating	1,11		

Realized 2.3 kHz frequency response to improve productivity

Comparison* 1.15 times faster than conventional

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



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

Features

MINAS A5 Family



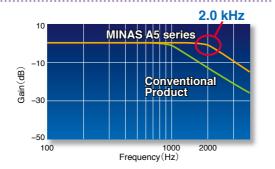


2.0 kHz Frequency Response

Example application Semiconductor production equipment, packaging, etc

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

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





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

A5II

<At incremental type>

Example application Machine tools, textile machinery, etc.

Ensures smoother operation and reduced vibration at stopping.

Ensures accurate positioning in a short time.

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

Conventional A4 Series 2500 p/r

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



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



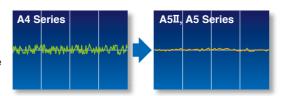




Example application Semiconductor production equipment, textile machinery, etc.

For the industry's most stable speed and lowest cogging

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



Vibration reduced to only 1/8



The Input/Output Pulse 4 Mpps

Example application Semiconductor production equipment, machine tools, etc.

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

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





Smart

Auto tuning

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

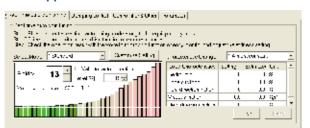
Example application Semiconductor production equipment, food processing machinery, etc.

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

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

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

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





Manual/Auto Notch Filters

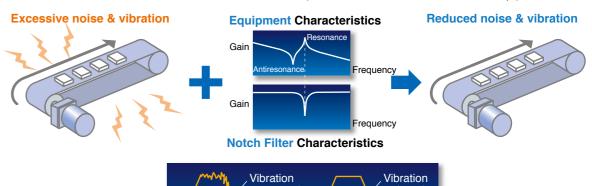
A5II

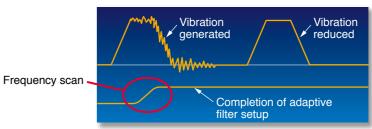
Example application Semiconductor production equipment, food processing machinery, etc.

Equipped with auto-setting notch filters for greater convenience.

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

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







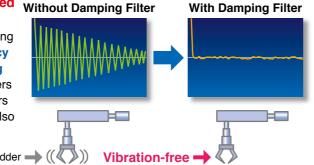
Manual/Auto Damping Filter

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 Hz to 200 Hz.



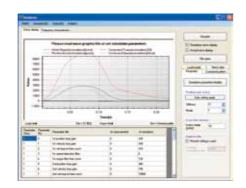
Simulation

Motion Simulation

Example application General production machinery, etc.

Equipped with a simplified machine simulation function.

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



Light



New Structure/ Innovative Core/ Innovative Encoder A5II A5

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

Innovative core

novative enco

Featuring significantly reduced weight and a more compact motor

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



-	[Examples for IviSivi or IviDivi]							
	Series	A 4	A5II A5	Weigh Reducti				
2 kW	MSM 1 kW	4.5 kg	3.5 kg	▲ 1				
	MSM 2 kW	6.5 kg	5.3 kg	▲ 1.2				
	MDM 1 kW	6.8 kg	5.2 kg	▲ 1.6				
_								

[Examples for MSM or MDM]

MDM 2 kW | 10.6 kg | 8.0 kg | ▲2.6 kg

Safe



Complies with European Safety Standards.

Example application Semiconductor and LCD production equipment, etc.

Compliance with EU safety standards.

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

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

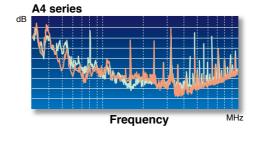


Low noise

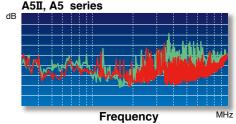
Semiconductor and LCD production equipment, etc. Example application general production machinery for export to the European market

Complies with the European EMC Directive

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







IP67 Enclosure Rating (Products are build to order items.

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

IP67 enclosure rating for increased environmental resistance

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



IP67

- Protection against water Protection against temporary immersion in water

Protection against dust Protected against

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













PANATERM Set-up Support Software

A5II A5 A5IIE

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

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

Localized in 4 languages

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

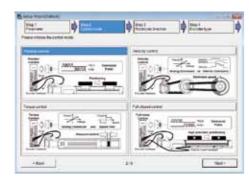
Easy

Setup Wizard

MINAS A5 Family

Features

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.



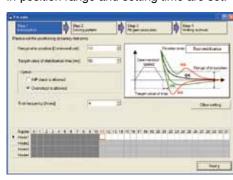
The fit gain function for setting two-degree-of-freedom control.

- 1) Select the adjustment method
- 2) Load measurement
- 3) Adjust gain to meet your needs by confirming results. (for A5II, A5IIE)

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Marcal colony	20	44	10.	*	320	
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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

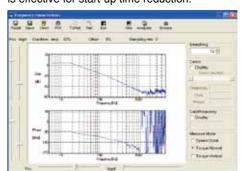
The Encoder Temperature Monitor is a new function capable of real-time measurement of the interior temperature of the encoder, something that has been difficult to achieve in the past. It is valuable for monitoring the motor and can be used as a diagnostic in the event of a malfunction (provided with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

Other New Function

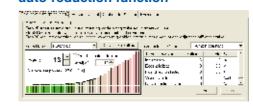
The software offers a wide range of convenient features including motor and driver data such as load factor, voltage, and driver temperature. Moreover, the logging function records the interface history. As well, a non-rotating contributing factor display function.

Frequency characteristics measurement function

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



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

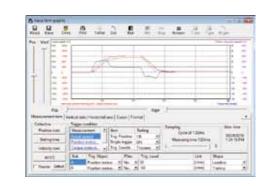


Trial run

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



Significant increase of measuring objects **Multi-functional waveform graphic**



<CAUTION>

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

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

	CPU	Pentium III 512MHz or more			
	Memory	256MB or more (512MB recommended)			
Personal	Hard disk capacity	Vacancy of 512MB or more recommended			
computer	OS	Windows® XP SP3 (32-bit Ver.), Windows® VISTA SP1 (32-bit Ver.) Windows® 7 (32-bit Ver., 64-bit Ver.)			
		[English, Japanese, Chinese or Korean version]			
	Serial communication port	USB port			
Dioplay	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/products/motors-compressors/fa-motors

Parameter Initialization A5II A5 A5IIE



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

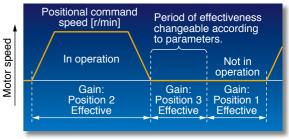
3-Step Gain

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.

A5II A5

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



Inertia Ratio Conversion A5II A5 A5IIE

Conversion input(J-SEL).

When you have significant load inertia changes, it can

A5II A5

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

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.

Command Control Mode A5II A5

Features

· Command control mode is available for Position. Speed (including eight internal velocities) and Torque.

MINAS A5 Family

- Using parameter settings, you can set up one optional command control mode or two command control modes by switching.
- · According to suitable application utility, proper optional command control mode can be chosen.

Full-closed Control A5II A5

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

SEMI F47



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

Inrush Current Preventive Function

A5II A5 A5IIE A5E

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

Regenerative Energy Discharge

occurring at power-on.



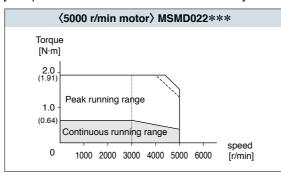
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not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

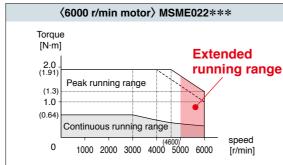
6000-rpm capability

A5II A5 A5IIE A5E

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

[Comparison of new and conventional 200 W]





Gear head

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

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

MSME → 6000 r/min

MSMD → 5000 r/min MHMD

Dynamic Braking

· 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.

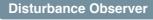
A5II A5 A5I

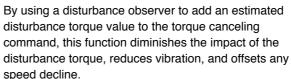
* The dynamic brake circuit of H-frame is external.

 The desired action sequence can be set up to accommodate your machine requirements.

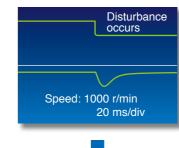
Using the front panel or by connecting a PC, you can restore the parameters to the factory settings.

Disturbance Observer A5II A5 A5IIE A5E

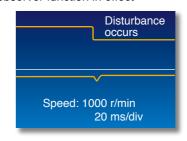




Disturbance observer function not in effect



Disturbance observer function in effect



Torque Feed Forward A5II A5 A5IIE

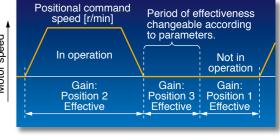
The Torque Feed Forward function performs a comparison with feedback and calculates the amount of torque to add to the necessary torque command in the command for actuation.

Friction Torque Compensation





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





You can adjust right inertia ratio by Inertia Ratio

adjust unbalanced speed and position gain turning

It ends up quicker response of your system.

Input/Output Signal Assignment

for a more simplified setup.

Torque Limiter Switching A5II A5 A5IIE A5E

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Applicable international safety standards

MINAS A5 Family















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

IEC : International Electrotechnical Commission EN: Europaischen Normen

EMC : Electromagnetic Compatibility UL : Underwriters Laboratories CSA: Canadian Standards Association Pursuant to the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

Panasonic Service Europe, a division of Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

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

A 급 기기 (업무용 방송통신기자재)

이 기기는 업무용(A 급) 전자파적합기기로서 판매자

또는 사용자는 이 점을 주의하시기 바라며, 가정외의

지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

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

Applicable External Scales

A5II A5

Applicable External Scale	Manufacturer	Model No.	Resolution [µs]	Maximum Speed (m/s) ^{*3}	
Parallel Type (AB-phase)	General	_	Maximum speed after 4 × multiplication: 4 Mpps		
		SR75	0.01 to 1	3.3	
		SR85	0.01 to 1	3.3	
0. 1.1 T (1	Magnescale Co., Ltd.	SL700-PL101RP/RHP	0.1	10	
Serial Type (Incremental)		SL710-PL101RP/RHP	0.1	10	
		BF1	0.001/0.01	0.4/1.8	
	Nidec Sankyo Corporation	PSLH	0.1	6	
		LIC2197P/LIC2199P	0.05/0.1	10	
	DR. JOHANNES HEIDENHAIN GmbH	LIC4193P/LIC4195P LIC4197P/LIC4199P	0.001 /0.005 /0.01	10	
		SVAP	0.05	2.5	
	5 4	SAP	0.05	2.5	
	Fagor Automation S.Coop.	GAP	0.05	2.5	
		LAP	0.1	2	
Serial Type (Absolute)	Managed On 144	SR77	0.01 to 1	3.3	
	Magnescale Co., Ltd.	SR87	0.01 to 1	3.3	
	Mitutous Comparation	AT573A	0.05	2.5	
	Mitutoyo Corporation	ST778A(L)	0.1	5	
			0.001	0.4	
	Renishaw plc	RESOLUTE	0.05	20	
			0.1	40	

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

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

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

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

Motor Line-up

Motor Line-up

MINAS A5 Family

Mc	Motor Line-up															
					Rated	Rotary	encoder									
	Мо	tor	Voltage	Rated output (kW)	rotational speed (Max. speed) (r/min)	20-bit incremental	17-bit absolute	Enclosure (*1)	Features	Applications						
	MSMD		100 V 200 V	0.05 0.1 0.2 0.4	3000 (5000)	0	0	IP65	Leadwire type Small capacity Suitable for high speed application							
			200 V	0.75	3000 (4500)					Suitable for all applications	 Bonder Semiconductor production equipment 					
Low inertia			100 V 200 V	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						
tia	MSME		200 V	0.75					applications							
			400 V 200 V 400 V	0.75 1.0 1.5 2.0 3.0	3000 (5000)	0	0	IP65 ^(*2)	Middle capacity Suitable for the machines directly coupled with ball screw and high stiffness and high repetitive applica-	SMT machines Food machines LCD production						
		40)		4.0 5.0	3000 (4500)				tion	equipment etc						
	MDME Sidd	MDME A	MDME	MF A	ADME	MDME			400 V 200 V	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
		t type)		400 V	7.5 (*3)	1500				with belt driven	tool etc					
Middl				•••	•••	•		11.0 (*3) 15.0 (*3)	(3000) 1500 (2000)							
Middle inertia	MFME (Flat type)		200 V 400 V	1.5 2.5 4.5	2000 (3000)	0	0	IP67	Middle capacity Flat type and suitable for machines with space limitation	Robots Food machines etc						
	MGME Low speed/ High torque type		200 V 400 V	3.0 4.5 (*3) 6.0 (*3)	1000 (2000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low speed and high torque application	Conveyors Robots Textile machines etc						
	мнмр		100 V 200 V	0.2	3000 (5000)	0	0	IP65	Leadwire type Small capacity Suitable for low	• Conveyors • Robots						
High			200 V	0.75	3000 (4500)		O IFC		stiffness machines with belt driven	etc						
High inertia	МНМЕ		200 V 400 V	1.0 1.5 2.0 3.0 4.0 5.0	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low stiffness machines with belt driven, and large load	Conveyors Robots LCD manu- facturing equipment						
				7.5 (*3)	1500 (3000)				moment of inertia	etc						

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

Model Designation

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

Servo Motor

Symbol

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

Motor rated output -

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

Rotary encoder specifications

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

* S: can be used in incremental.

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

Special specifications

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

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

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

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

Design order

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

Motor with reduction gear

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

Voltage specifications Symbol Specifications 100 V 200 V

> 400 V 100 V/200 V

common (50 W only)

2 4

Z

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

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

Voltage specifications						
Symbol	Specifications					
1	100 V					
2	200 V					

Rotary encoder specifications

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

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

L	Gear	ratio,	gear	type

Cumbal	Gear	Mo	otor ou	Gear				
Symbol	reduction ratio	duction ratio 100 200 40		400	750	type		
1N	1/5	•	•	•	•			
2N	1/9	•	•	•	•	For high		
3N	1/15	•	•	•	•	accuracy		
4N	1/25	•	•	•	•			

^{*} MHMD 100 W is not prepared.

Motor structure

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

Servo Driver

Speed, Position, Torque, Full-closed type	M	Α	D	K	T	1	5	0	5	*	*	*	——— Special specifications
Position control type	М	Α	D	Κ	Т	1	5	0	5	E	*	*	Special specifications

riaille	Syllibol	Ī		
Symbol	Frame		Symbol	Frame
MAD	Frame B		MED	Frame E
MBD			MFD	Frame F
MCD			MGD	Frame G
MDD	Frame D		MHD	Frame H

* A5IE, A5E series is up to F-frame.

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

Power device Max. current rating

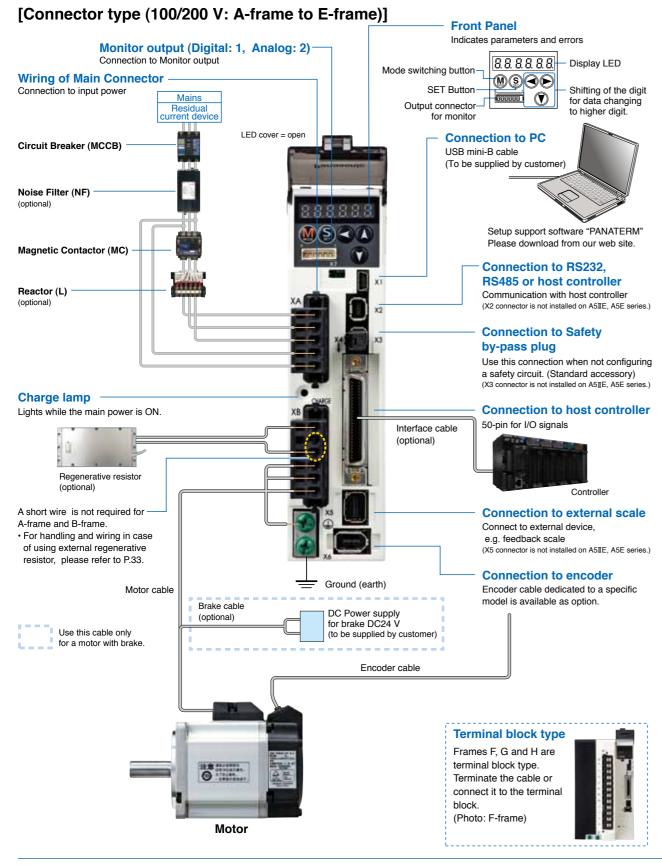
Symbol	Current rating			
T1	10 A			voltage
T2	15 A		specifi	cations
T3	30 A		Symbol	Spec
T4	35 A		1	Single p
T5	50 A		3	3-phase
T7	75 A		4	3-phase
TA	100 A	L	5	Single/3
TB	150 A			
TC	300 A			

Only position control **Current detector current rating**

					•
		Symbol	Specifications	Symbol	Specifications
1		05	5 A	40	40 A
Supply voltage specifications		07	7.5 A	64	64 A
		10	10 A	90	90 A
Symbol	Specifications	12	12 A	A2	120 A

	and the second s	00	571	70	7071
	voltage	07	7.5 A	64	64 A
pecifi	cations	10	10 A	90	90 A
Symbol	Specifications	12	12 A	A2	120 A
1	Single phase, 100 V	20	20 A	B4	240 A
3	3-phase, 200 V	30	30 A		
4	3-phase, 400 V				

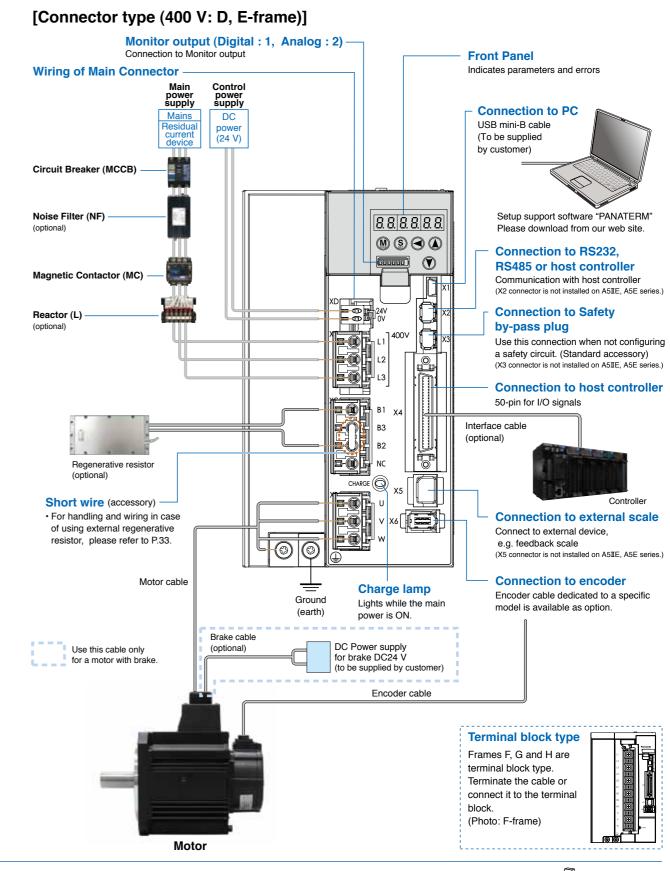
^{*} See the P.21 to P.28, driver and motor combination.



<Caution>

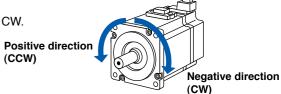
Apply adequate tightening torque to the product mounting screw by taking into consideration strength of the screw and the characteristics of material to which the product is installed. Overtightening can damage the screw and/or material; undertightening can result in loosening.

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



Initial setup of rotational direction: positive = CCW and negative = CW.

Pay an extra attention.



(CCW)

Driver and List of Applicable Peripheral Equipments

MINAS A5 Family

Driver	Applicable motor	Voltage *1	Rated output	Required Power (at the (rated load)	Circuit breaker (rated (current)	Noise filter /Single phase 3-phase	Surge absorber /Single phase 3-phase	Noise filter for signal	Rated operating current of magnetic contactor Contact configuration *2	Diameter and withstand voltage of main circuit cable	Crimp terminal for main circuit terminal block *4	Diameter and withstand voltage of control power supply cable	Crimp terminal for control power supply terminal block	Diameter and withstand voltage of motor cable *5	Diameter and withstand voltage of brake cable
	MSME	Single phase,	50 W to	approx. 0.4 kVA		DV0P4170	DV0P4190						DIOCIC		
MADH MADK	MSMD MHMD	100 V Single/ 3-phase,	50 W to 200 W	approx. 0.5 kVA		DV0P4170	DV0P4190								
	MSME	200 V Single	200 W	approx.	10 A	DV0PM20042 DV0P4170	DV0P1450 DV0P4190		20.4	0.75 mm²/				0.75 mm²/	0.28 mm ² to 0.75 mm ² /
MBDH MBDK	MSMD MHMD	100 V Single/ 3-phase,	400 W	0.5 kVA approx. 0.9 kVA		DV0P4170 DV0PM20042	DV0P4190 DV0P1450		20 A (3P+1a)	AWG18 600 VAC or more				AWG18 600 VAC or more	AWG22 to AWG18 100 VAC
MCDH	MSME	200 V Single 100 V	400 W	approx. 0.9 kVA			DV0P1430 DV0P4190					0.75 mm²/ AWG18			or more
MCDK	MSMD MHMD	Single/ 3-phase, 200 V	750 W	approx. 1.3 kVA	15 A	DV0PM20042						600 VAC or more			
	MDME MHME	200 1	1.0 kW	approx. 1.8 kVA	. 13 A										
	MGME	Single/	0.9 kW	approx. 1.8 kVA approx.			DV0P4190 DV0P1450	DV0P1460	00.4		Conn		Conn		
	MSME MHME	3-phase, 200 V	1.0 kW	1.8 kVA	20 A	DV0P4220	5701 1400		30 A (3P+1a)		ection		ection		
	MDME MFME MSME		1.5 kW	approx. 2.3 kVA							Connection to exclusive connector		Connection to exclusive connector		
MDDH	MDME		400 W	approx. 0.9 kVA							IS iVe C		sive c		
MDDK	MDME MSME		600 W 750 W	approx. 1.2 kVA approx.							onne		onne		
	MSME MDME	3-phase,	1.0 kW	1.6 kVA approx.	10 A	FN258L-16-07	DV0PM20050		20 A	2.0 mm²/ AWG14	tor	0.52 mm²/ AWG20	otor	2.0 mm²/ AWG14	
	MHME MGME	400 V	0.9 kW	1.8 kVA	10 A	(Recommended) component	DVOI WIZOGGO		(3P+1a)	600V VAC or more		100 VAC or more		600V VAC or more	
	MSME MDME MFME		1.5 kW	approx. 2.3 kVA											
	MHME MDME		001111	approx.				DV0P1460				0.75 mm²/			
	MSME	3-phase, 200 V	2.0 kW	3.3 kVA approx.	30 A	DV0PM20043	DV0P1450	RJ8035 (Recommended) component	60 A (3P+1a)			AWG18 600 VAC			
MEDH MEDK	MFME MSME		2.5 kW	3.8 kVA approx.				*6				or more 0.52 mm ² /			
	MDME MHME	3-phase, 400 V	2.0 kW	3.3 kVA	15 A	FN258L-16-07 (Recommended) component	DV0PM20050	DV0P1460	30 A (3P+1a)			AWG20 100 VAC			
	MFME		2.5 kW	approx. 3.8 kVA approx.		,,						or more			-
	MGME MDME		2.0 kW	3.8 kVA					60 A						
	MHME MSME MGME		3.0 kW	approx. 4.5 kVA				DV0P1460	(3P+1a)		11 mm or smaller	0.75 mm²/	11 mm or smaller		
	MDME MHME MSME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA	50 A	DV0P3410	DV0P1450	RJ8035 (Recommended) component			Δ φ5.3	AWG18 600 VAC	ф5.3		0.75 mm²/
	MFME MGME		4.5 kW	approx. 6.8 kVA				*6	100 A (3P+1a)		Terminal block M5	or more	Terminal block M5		AWG18 100 VAC
MEDII	MDME MHME		5.0 kW	approx. 7.5 kVA						3.5 mm²/				3.5 mm²/	or more
MFDK	MSME MGME		2.0 kW	approx. 3.8 kVA						AWG12 600 VAC or more				AWG12 600 VAC or more	
	MSME MDME MGME		3.0 kW	approx. 4.5 kVA							10 mm or smaller		7 mm or smaller		
	MHME MSME MDME	3-phase, 400 V	4.0 kW	approx. 6.0 kVA	30 A	FN258L-30-07 (Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)		Φ4.3	0.75 mm²/ AWG18 100 VAC			
	MHME	400 \$	4.5 kW	approx. 6.8 kVA		\ component /			(51 +14)		Terminal block	or more	/ φ3.2 Terminal block		
	MGME MSME MDME		5.0 kW	approx. 7.5 kVA							M4		M3		
	MHME MDME		7.5 kW	approx.								0.752/			-
	MGME	3-phase, 200 V	6.0 kW	11 kVA approx. 9.0 kVA	60 A	FS5559-60-34 (Recommended)	DV0P1450		100 A		11 mm or smaller	0.75 mm²/ AWG18	10 mm or smaller		
MGDH	МНМЕ	200 V	7.5 kW	approx. 11 kVA	-	component			(3P+1a)	5.3 mm²/ AWG10		600 VAC or more		13.3 mm²/	
MGDK	MDME		7.5 kW	approx. 11 kVA		FN258-42-07				600 VAC or more	/ <u></u> Δ	0.75 mm²/	<u>φ5.3</u>	AWG6 600 VAC	
	MGME	3-phase, 400 V	6.0 kW	approx. 9.0 kVA	30 A	or FN258-42-33 (Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)	2510	Terminal block	AWG18 100 VAC	Terminal block	or more	
	MHME		7.5 kW	approx. 11 kVA		component		RJ8095			M5	or more	M5		
		3-phase,	11 kW	approx. 17 kVA	100 A	FS5559-80-34	DV05::::	T400-61D (Recommended)	150 A		16 mm or	0.75 mm²/ AWG18	10 mm or	21.1 mm²/	_
MUDU		200 V	15 kW	approx. 22 kVA	125 A	(Recommended component	DV0P1450	component *6	(3P+1a)	13.3 mm²/	smaller	600 VAC or more	smaller	AWG4 600 VAC or more	
MHDH	MDME	3-phase,	11 kW	approx. 17 kVA	50 A	FN258-42-07 or	DVODMOSSE		100 A	AWG6 600 VAC or more *3	/ φ6.4 Terminal	0.75 mm²/ AWG18	/ φ4.3 Terminal	13.3 mm ² / AWG6 600 VAC or more	
		400 V	15 kW	approx. 22 kVA	60 A	FN258-42-33 (Recommended component)	DV0PM20050		(3P+1a)	Ĭ	block M6	100 VAC or more	block M4	21.1 mm²/ AWG4 600 VAC	

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

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

*6 Use thses products to suit an international standard.

About circuit breaker and magnetic contactor

the maximum input voltage of the product.

Related page

Motor/brake connector P.186, P.187 "Specifications of Motor connector"

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

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

<Remarks>

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

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

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

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

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

<Caution>

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

<Remarks>

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

Noise Filter for Signal Lines

Title

Part No.

Ш
S
Φ.
ŝ

	Title		Part No.	raye					
Interface Cable			DV0P4360						
			DV0P4120	1					
			DV0P4121	1					
Interface Conve	rsion Cah	ole	DV0P4130	197					
	. J.J.I Oak		DV0P4131	1					
			DV0P4131 DV0P4132						
0 1 10:		Cinalo rom	D V U F 4 1 3 Z						
Connector Kit for Power Supply Input	A-frame to	Single row type Double row	DV0PM20032	200					
Connection Connector Kit	D-frame	type	DV0PM20033						
for Motor Connection	A-frame	to D-frame	DV0PM20034	201					
0	_		DV0P4290	202					
Connector Kit for Motor/Encoder		n	DV0P4380	202					
			DV0PM20035	203					
Connector Kit for Motor/Brake Co			DV0PM20040	206					
	RS485,	RS232	DV0PM20024						
	Safety		DV0PM20025	198					
Connector 1/3	Interface)	DV0P4350						
Connector Kit	External	Scale	DV0PM20026						
	Encoder		DV0PM20010	199					
	Analog N	Ionitor Signal	DV0PM20031	1					
Battery For Abs	olute Enc	oder	DV0P2990						
Battery Box No			DV0P4430	207					
	A-frame		DV0PM20027						
Mounting	B-frame		DV0PM20028	208					
Bracket	C-frame		DV0PM20029						
	o mamo		MFECA0**0EAD						
			MFECA0**0EAM	188					
			MFECA0**0MJD						
	without E	without Battery Box MFECA0**0MKD							
			MFECA0**0TJD	189					
Encoder Cable			MFECA0**0TKD	1					
			MFECA0**0EAE	188					
			MFECA0**0MJE	.55					
	with Batt		MFECA0**0MKE						
	Note) 8	3	MFECA0**0TJE	189					
			MFECA0**0TKE						
			MFMCA0**0EED						
			MFMCA0**0NJD	-					
Motor Cable	without E	Brake	MFMCA0**0NKD	191					
IVIOLOI CADIE	with lOut E	אומעכ	MFMCA0**0RJD	191					
			MFMCA0**0RKD						
			MFMCB0**0GET	-					
Dunles Oall			MFMCB0**0PJT	100					
Brake Cable			MFMCB0**0PKT	196					
			MFMCB0**0SJT	-					
	F0 0 55	14/	MFMCB0**0SKT						
	50 Ω 25		DV0P4280						
External	100 Ω 2		DV0P4281						
Regenerative	25 Ω 50		DV0P4282	210					
Resistor	50 Ω 50		DV0P4283						
	30 Ω 100		DV0P4284						
	20 Ω 130		DV0P4285						
Reactor	DV0P22	0, DV0P221, 3, DV0P224, 7, DV0P228,		209					
Noise Filter		70, DV0PM2 20, DV0PM2		250					
	DV0P34	10							
Surge	Single p	hase	DV0P4190						
Absorber	3-phase	(200 V)	DV0P1450	253					
			D1/2D1/20						

DV0P1460

254

			Motor				Driver		_			Ор	ptional parts	S								
		_		.	Rating/	A5II series A5 series	A5IIE series A5E series		Power capacity	Encode	er Cable		Motor C	able	Brake Cable	External	Reactor	Noise Filter				
M	otor series	Power supply	Output (W)	Part No. Note) 1	Spec. (page)	Part No. (Speed, Position, Torque, Full-Closed type) Note) 2	Part No. (Position control type Note) 3,4	Frame	rated load (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,8	E	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase				
			50	MSMD5AZ ☐ 1 *	49	MAD \diamondsuit T1105	MAD \diamondsuit T1105E	A-frame	Approx. 0.4							DV0P4280	DV0P227					
		Single phase	100	MSMD011 □ 1 *	51	MAD ◇ T1107	MAD ◇ T1107E	7 t ilumo	Approx. 0.4							2701 1200	D VOI LLY	DV0P4170				
		100 V	200	MSMD021 □ 1 *	53	MBD ◇ T2110	MBD ♦ T2110E	B-frame	Approx. 0.5							DV0P4283	DV0P228					
	MSMD		400	MSMD041 ☐ 1 *	55	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx. 0.9							DV0P4282	DV01 ZZ0	DV0PM20042				
	(Leadwire) type		50	MSMD5AZ□1 *	50	MAD ◇ T1505	MAD \diamondsuit T1505E		Approx. 0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE		MFM0 0 * * 0E		MFMCB 0 * * 0GET	DV0P4281	DV0P227					
	3000 r/min	Single	100	MSMD012 ☐ 1 *	52	MAD \diamondsuit T1505	MAD \diamondsuit T1505E	A-frame	Approx. 0.5		Note) 7						DV0P227	DV0P4170				
		phase/ 3-phase	200	MSMD022 □ 1 *	54	MAD ◇ T1507	MAD \diamondsuit T1507E		Approx. 0.5									DV0PM20042				
Low inertia		200 V	400	MSMD042 ☐ 1 *	56	MBD ◇ T2510	MBD ♦ T2510E	B-frame	Approx.											DV0P4283	DV0P228	
			750	MSMD082 ☐ 1 *	57	MCD ◇ T3520	MCD ◇ T3520E	C-frame	Approx.								DV0P220	DV0PM20042				
		Oin ala	50	MSME5AZ ☐ 1 *	65	MAD \diamondsuit T1105	MAD ♦ T1105E	A-frame	Approx. O.4 Approx.	MFECA 0 * * 0MJD (For movable, direction of motor shaft)	0 * * 0MJD For movable, direction of motor shaft MFECA		MFMC 0 * * 0N	IJD	MFMCB 0 * * 0PJT	DV0P4280	DV0P227	D) (0 D) (D				
		Single phase	100	MSME011	67	MAD \diamondsuit T1107	MAD \diamondsuit T1107E	_	0.4 Approx.				For mova direction motor sh	of) naft)	(For movable, direction of motor shaft	D) /2D /222		DV0P4170				
		100 V	200	MSME021 \(\Bar{\Bar{\Bar{\Bar{\Bar{\Bar{\Bar{	69	MBD ♦ T2110	MBD \diamondsuit T2110E		0.5 Approx.			ECA MFECA		MFMCA 0 * * 0NKD / For movable, \	IKD	MFMCB 0 * * 0PKT / For movable,	DV0P4283	DV0P228	D) (0D) 1000 10			
	MSME /Connector\		400	MSME041 \[1 *	71	MCD ♦ T3120	MCD ♦ T3120E	C-frame	0.9 Approx.	For movable, opposite direction of motor shaft	For movable, opposite direction of motor shaft		opposite dir of motor s	ection shaft	opposite direction of motor shaft	DV0P4282		DV0PM20042				
	type / 3000 r/min		50	MSME5AZ ☐ 1 *	66	MAD \diamondsuit T1505	MAD \diamondsuit T1505E	Δ.	0.5 Approx.	MFECA 0 * * 0TJD	MFECA 0 * * 0TJE		MFM0 0 * * 0F / For fixe	RJD	MFMCB 0 * * 0SJT / For fixed, \	DV0P4281	DV0P227					
	0000 1/111111	Single phase/	200	MSME012 □ 1 * MSME022 □ 1 *	68 70	MAD ◇ T1505	MAD ♦ T1505E MAD ♦ T1507E	A-trame	0.5 Approx.	For fixed, direction of motor shaft	For fixed, direction of motor shaft		direction motor sh	of naft/	direction of motor shaft		DV0P220	DV0P4170 DV0PM20042				
		3-phase 200 V	400	MSME042 □ 1 *	70	MBD ♦ T2510	MBD ♦ T2510E	R_frama	0.5 Approx.	MFECA 0 * * 0TKD	MFECA 0 * * 0TKE		0 * * 0F	RKD	0 * * 0SKT	DV0P4283	D) (07.55					
			750	MSME082 □ 1 *	73	MCD ♦ T3520	MCD ♦ T3520E		O.9 Approx.	For fixed, opposite direction of motor shaft	For fixed, opposite direction of motor shaft		opposite dir of motor s Note)	shaft /	opposite direction of motor shaft	D V 01 4200	DV0P228 DV0P220	DV0PM20042				
		Single		MHMD021 1 *	59		MBD ♦ T2110E		1.3 Approx.	x. \ of motor shaft \ \			11010)			DV0P4283		DV0F4170				
_	MUMP	phase 100 V		MHMD041 1 *		· ·	MCD ♦ T3120E		O.5 Approx.							DV0P4282	DV0P228	DV0PM20042				
High (Leadwire type	(Leadwire)	Single		MHMD022 □ 1 *		-	MAD \diamondsuit T1507E		0.9 Approx. 0.5	x. MFECA	MFECA 0 * * 0EAE		MFMCA 0 * * 0EED		MFMCB 0 * * 0GET		DV0P227 DV0P220	DV0P4170				
inertia	3000 r/min	phase/ 3-phase	400	MHMD042 □ 1 *	62	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx.	U ULAW	Note) 7		0 00	0	0 UGLI	DV0P4283		DV0PM20042				
		200 V	750	MHMD082 □ 1 *	63	MCD ◇ T3520	MCD ◇ T3520E	C-frame	Approx.								DV0P220	DV0PM20042				

: IP67

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

Specifications

J Direction of motor shaft

Opposite direction of

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

Note) 3 \diamondsuit : Drivers series K: A5IE series H: A5E series

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

Symbol

50 W to 750 W

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

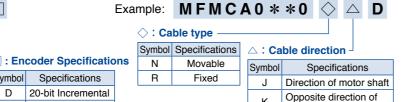
- Note) 6 Cables for opposite to output shaft cannot be used with 50 W or 100 W motor.
- Note) 7 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.
- Note) 8 Please note that a battery is not supplied together with 17-bit absolute encoder cable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

Please buy the battery part number "DV0P2990" separately.

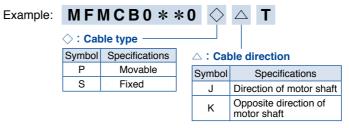
• Selection of cable for MSME motor (Movable: For application where the cable is movable. Fixed: For application where the cable is fixed.



Fixed



· Brake cable



E 17-bit Absolute

A5 Family Table of Part Numbers and Options

0.4 kW to 5.0 kW IP65 motor

		l	Motor				Driver		Power				Optional	parts					
	Motor series	Power	Output	Part No.	Rating/	A5II series A5 series Part No. Speed, Position,	A5IIE series A5E series Part No.	Frame	capacity	Encode 20-bit	er Cable		Motor	Cable with	Brake Cable	External Regenerative	Reactor	Noise Filter	lı
		supply	(W)	Note) 1	(page)	Torque, (Full-Closed type) Note) 2	(Position control) type Note) 3,4		\ load / (kVA)	Incremental Note) 5	Absolute Note) 4,5,8		Brake Note) 5	Brake Note) 5	Note) 5	Resistor	Single phase 3-phase		l
		Single phase/ 3-phase			74		MDD \diamondsuit T5540E	- D-frame	Approx. 1.8	-			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	
		200 V		MSME152 □ C * MSME202 □ C *	75 76	, in the second	MDD ♦ T5540E MED ♦ T7364E	E frama	Approx. 2.3	MFECA	MFECA		0**2ECD	0**2FCD	_	DV0P4285	DV0P222 DV0P223	DV0PM20043	- C
		O phood				·		E-irame			0**0ESE				-	Note) 6		D V 0 F I V 1 Z 0 U 4 3	
Low	MSME	3-phase 200 V					MFD ♦ TA390E MFD ♦ TB3A2E	F-frame	Approx. 4.5 Approx. 6	}			MFMCA	MFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410	
inertia	3000 r/min		5000	MSME502 □ C *	79	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5			'	0**3ECT	0**3FCT		×2 in parallel	Note) 7		
tia			750 1000	MSME084		·	MDD ♦ T2412E MDD ♦ T3420F	D-frame	Approx. 1.6				MFMCD	MFMCE		DV0PM20048	,		f
		0		MSME154 C *			MDD ♦ T3420E		Approx. 2.3	MEECA	MEEGA		0**2ECD	0**2FCD				Recommended	
		3-phase 400 V		MSME204 ☐ C *	107		MED ♦ T4430E	E-frame		MFECA 0**0ESD	MFECA 0**0ESE				-	DV0PM20049	Note) 7	components	
				MSME304 ☐ C * MSME404 ☐ C *		V -	MFD \diamondsuit T5440E MFD \diamondsuit TA464E	□ fromo	Approx. 4.5	-			MFMCA	MFMCA		DV0PM20049	,	P.252	f
				MSME504 C *			MFD \diamondsuit TA464E	F-lialile	Approx. 6 Approx. 7.5	+			0**3ECT	0**3FCT		×2 in parallel			
		Single phase/		MDME102 □ C *	80		MDD ◇ T3530E	D-frame	Approx. 1.8							DV0P4284	DV0P228 DV0P222	DV0P4220	f
		3-phase 200 V	1500	MDME152 □ C *	81	MDD \diamondsuit T5540	MDD ♦ T5540E	D-liane	Approx. 2.3	MFECA	MFECA		MFMCD 0**2ECD	MFMCA 0**2FCD			DV0PM20047 DV0P222	DV01 4220	
			2000	MDME202 □ C *	82	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	0**0ESD	0**0ESE				_	DV0P4285 Note) 7	DV0P223	DV0PM20043	"
		3-phase		MDME302 C *			MFD ♦ TA390E		Approx. 4.5				MFMCA	MFMCA		DV0P4285	DV0P224		
	MDME	200 V		MDME402 C *			MFD ♦ TB3A2E	F-frame	Approx. 6	-			0**3ECT	0**3FCT		×2 in parallel	DV0P225	DV0P3410	
	2000 r/min			MDME502 C *	85	-	MFD ♦ TB3A2E		Approx. 7.5							•	Note) 7		(
			400 600	MDME044 \square C * MDME064 \square C *			MDD ♦ T2407E	-	Approx. 0.9 Approx. 1.2	-									
Middle				MDME104 C *				D-frame	Approx. 1.8				MFMCD	MFMCE 0**2FCD		DV0PM20048		Recommended	
de		3-phase		MDME154 C *					Approx. 2.3		MFECA	'	0**2ECD	U ZFCD	_			components	E
inertia		400 V		MDME204 ☐ C * MDME304 ☐ C *				E-frame	Approx. 3.3 Approx. 4.5	0**0ESD	0**0ESE					DV0PM20049	Note) 7	P.252	E
a∺				MDME404 C *				F-frame	Approx. 4.5	-			MFMCA	MFMCA		DV0PM20049			
				MDME504 ☐ C *					Approx. 7.5				0**3ECT	0**3FCT		x2 in parallel			E
	MGME /Low speed/\	Single phase/ 3-phase 200 V	900	MGME092 □ C *	92	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 1.8	MFECA 0**0ESD	MFECA 0**0ESE		MFMCD 0**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4220	E
	(High torque)	3-phase		MGME202 C *			MFD ♦ TA390E MFD ♦ TB3A2E	F-frame	Approx. 3.8	-			MFMCA	MFMCA		DV0P4285	DV0P223	DV0P3410	
	\ type /	200 V 3-phase	900	MGME302 □ C * MGME094 □ C *			MFD ♦ TB3A2E		Approx. 4.5 Approx. 1.8		MFECA		0**3ECT MFMCD 0**2ECD	0**3FCT MFMCE 0**2FCD		×2 in parallel DV0PM20048	DV0P224	Recommended	
		400 V		MGME204 □ C *				F-frame	Approx. 3.8	-	0**0ESE		MFMCA	MFMCA	-	DV0PM20049	-	components	
-		Single		MGME304 □ C * MHME102 □ C *	127 97		MFD ♦ TA464E MDD ♦ T3530E	I -liaille	Approx. 4.5 Approx. 1.8			(0**3ECT	0**3FCT		x2 in parallel	DV0P228/	P.252	
		phase/ 3-phase 200 V		MHME152 \(\text{C} *	98		MDD \diamondsuit T5540E	D-frame	Арргох. 1.0	_			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P222 DV0PM20047/ DV0P222	DV0P4220	
		200 V	2000	MHME202 □ C *	99	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE		MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 6	DV0P223	DV0PM20043	
High		3-phase		MHME302 ☐ C *			MFD ♦ TA390E		Approx. 4.5							D) (0D (005	DV0P224		F
gh ir	MHME	200 V		MHME402 C *			MFD ♦ TB3A2E	F-frame	Approx. 6	-			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	F
inertia	2000 r/min			MHME502 C *			MFD ♦ TB3A2E		Approx. 7.5					1451405		•	Note) 7		-
₽.				MHME104 C *			MDD ♦ T2412E MDD ♦ T3420E	D-frame	Approx. 1.8 Approx. 2.3	+			MFMCD 0**2ECD	MFMCE 0**2FCD					
		3-phase		MHME204 C *			MED \diamondsuit T4430E	E-frame		MFECA	MFECA		MFMCE	MFMCE	-	DV0PM20049	_	Recommended	F
		400 V		MHME304					Арргох. 4.5	0**0ECD	0**0ESE		0**2ECD	0**2FCD	_		Note) 7	components	
				MHME404 C *				F-frame	Approx. 4.5 Approx. 6	1			MFMCA	MFMCA		DV0PM20049		P.252	l N
				MHME504 ☐ C *					Approx. 7.5	1			0**3ECT	0**3FCT		x2 in parallel			J Ľ

Note) 1 Rotary encoder specifications:

Motor specification: * (refer to P.16)

	١ '	٠ (U	ot	10	n	S	(Iŀ	"()t)	n	10	ot	C
i												1	Tit	le	,	

	Title		Part No.	Pa
Interface Cable			DV0P4360	
			DV0P4120	
			DV0P4121	1
Interface Conve	rsion Cable		DV0P4130	1
			DV0P4131	
			DV0P4132	
	A-frame Single type	row	DV0PM20032	
Connector Kit for Power Supply Input	D-frame Double type		DV0PM20033	2
Connection	E-frame (200 V	,	DV0PM20044	
	D-frame (400 V		DV0PM20051	
	E-frame (400 V)	DV0PM20052	L
Connector Kit for Control Power Supply Input Connection	D-frame and E-frame (400 V)	DV0PM20053	
Connector Kit	A-frame to D-fra	ame	DV0PM20034	2
for Motor	E-frame (200 V)	DV0PM20046]_
Connection	D-frame (400 V)	DV0PM20054	
Connector Kit	E-frame		DV0PM20045	
for Regenerative Resistor	D-frame (400 V)	DV0PM20055	
5515451	`	-	DV0P4310	H
Connector Kit fo			DV0P4320	2
Motor/Encoder (DV0P4330	H
			DV0P4340	2
	RS485, RS232		DV0PM20024	H
	Safety		DV0PM20025	1
	Interface		DV0P4350	Ι'
Connector Kit	External Scale		DV0FM20026	H
	Encoder		DV0PM20010	1
	Analog Monitor	Sianal	DV0PM20031	۱'
	Analog Monitor	Signai		H
Rattery For Aher	dute Encoder		nvnegaan	
			DV0P2990	2
Battery Box Not	te) 8		DV0P4430	
Battery Box Not Mounting				
Battery Box Not Mounting	te) 8	Box	DV0P4430	2
Battery Box Not Mounting Bracket	D-frame without Battery with Battery Box		DV0P4430 DV0PM20030 MFECA0**0ESD	1
Battery Box Not Mounting Bracket	D-frame without Battery		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE	1
Battery Box Not Mounting Bracket	D-frame without Battery with Battery Box		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD	1
Battery Box Not Mounting Bracket	D-frame without Battery with Battery Box		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD	1
Battery Box Not Mounting Bracket	D-frame without Battery with Battery Both Note) 8		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD	1 1
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Battery with Battery Box		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD	1 1
Battery For Absorbattery Box Not Mounting Bracket Encoder Cable Motor Cable	D-frame without Battery with Battery Both Note) 8		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**3ECT	1 1
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Battery with Battery Both Note) 8		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT	1 1
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Battery with Battery Box Note) 8 without Brake		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD	1 1 1
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Battery with Battery Both Note) 8		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD MFMCA0**2FCD	1 1 1
Battery Box Not Mounting Bracket Encoder Cable	D-frame without Battery with Battery Box Note) 8 without Brake		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT MFMCA0**3FCT MFMCA0**3FCT	1 1 1
Battery Box Not Mounting Bracket Encoder Cable	e) 8 D-frame without Battery with Battery Box Note) 8 without Brake with Brake 50 Ω 25 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280	1 1 1
Battery Box Not Mounting Bracket Encoder Cable	e) 8 D-frame without Battery with Battery Book Note) 8 without Brake with Brake 50 Ω 25 W 100 Ω 25 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT MFMCA0**3FCT MFMCA0**3FCT	1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable	e) 8 D-frame without Battery with Battery Bo: Note) 8 without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282	1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable	e) 8 D-frame without Battery with Battery Book Note) 8 without Brake with Brake 50 Ω 25 W 100 Ω 25 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	e) 8 D-frame without Battery with Battery Bo: Note) 8 without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	without Brake with Brake with Brake So Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	without Brake with Brake with Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W 30 Ω 100 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	without Brake without Brake without Brake without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W 30 Ω 100 W 20 Ω 130 W		DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**2ECD MFMCA0**2ECD MFMCE0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284 DV0P4285	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Battery Box Nor Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	without Battery with Battery Box Note) 8 without Brake with Brake 50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W 30 Ω 100 W 20 Ω 130 W 120 Ω 80 W	P221, P224,	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225,	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	without Battery with Battery Both Note) 8 without Brake without Brake without Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $50 \Omega 50 W$ $50 \Omega 50 W$ $100 \Omega 100 W$	P221, P224, P228,	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20049 DV0P222, DV0PM20047 0042	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	without Battery with Battery Both Note) 8 without Brake without Brake without Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ DV0P220, DV0 DV0P227, DV0 DV0P4170, DV	P221, P224, P228,	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20049 DV0P222, DV0PM20047 0042	2 2 2 2 2 2 2
Battery Box Not Mounting Bracket Encoder Cable	without Battery with Battery Both Note) 8 without Brake without Brake without Brake without Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ DV0P220, DV0 DV0P223, DV0 DV0P4170, DV0 DV0P4220, DV0 DV0P4220, DV0	P221, P224, P228,	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0PM20049 DV0P222, DV0PM20047 0042	2 2 2 2 2 2 2
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor Noise Filter	without Battery with Battery Both Note) 8 without Brake without Brake without Brake without Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ DV0P220, DV0 DV0P223, DV0 DV0P227, DV0 DV0P4170, DV DV0P4220, DV DV0P4220, DV DV0P3410 Single phase 3-phase (200 V	P221, P224, P228, 0PM2	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043	2 2 2 2 2 2
Battery Box Nor Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor	without Battery with Battery Both Note) 8 without Brake without Brake without Brake without Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $50 \Omega 50 W$ $50 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ DV0P220, DV0 DV0P227, DV0 DV0P4170, DV DV0P4220, DV DV0P3410 Single phase	P221, P224, P228, 0PM2	DV0P4430 DV0PM20030 MFECA0**0ESD MFECA0**0ESE MFMCA0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043 DV0P4190	2 2 2 2 2 2 2 2 2

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

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

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

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

Note) 7 Reactor should be prepared by the user.

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

Please buy the battery part number "DV0P2990" separately.

Part No.

DV0P4360 DV0P4120 DV0P4121

DV0P4130 DV0P4131 DV0P4132

DV0PM20032

DV0PM20033

DV0PM20044

DV0PM20051

DV0PM20052

DV0PM20053

DV0PM20034

DV0PM20046

DV0PM20054

DV0PM20045

DV0PM20055

DV0PM20036

DV0PM20037

DV0PM20038 DV0PM20039

DV0PM20024

DV0PM20025

DV0PM20026 DV0PM20010

DV0P4350

DV0P2990

DV0P4430

DV0PM20030

MFECA0**0ETE

MFMCF0**2ECD

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

MFMCE0**2FCD MFMCA0**3FCT 195

DV0P4280

DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285 DV0PM20048

DV0PM20049

DV0P4190

DV0P1450

DV0P1460

DV0PM20050

250

251

253

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

Analog Monitor Signal DV0PM20031

without Battery Box | MFECA0**0ETD

A-frame Single row type

Double row

E-frame (200 V)

D-frame (400 V)

E-frame (400 V)

E-frame (400 V)

E-frame (200 V)

D-frame (400 V)

D-frame (400 V)

with Battery Box

DV0P3410

Surge Absorber 3-phase (200V)

Noise Filter for Signal Lines

Single phase

3-phase (400V)

DV0P220, DV0P221, DV0P222,

DV0P4220, DV0PM20043

DV0P227, DV0P228, DV0PM20047 DV0P4170, DV0PM20042

A-frame to D-frame

203

208

		Motor				Driver		Dayres			Optiona	al parts					· Options (IP6	67 motor)		
					A5II series	A5IIE series		Power capacity	Encode	er Cable	Moto	r Cable	Brake					Title		
	Power	Output	Part No.	Rating/	A5 series Part No.	A5E series Part No.		/ at \	Encode		Moto	r Cable	Cable	External	Reactor		Interface Cable	l		
Motor serie	supply	(W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Frame	(rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	Interface Conve	ersion Cable		
	Single phase/	1000	MSME102 □ 1 *	74	MDD \diamondsuit T5540	MDD \diamondsuit T5540E		Approx. 1.8							DV0P228 DV0P222			1		
	3-phase 200 V	1500	MSME152 ☐ 1 *	75	MDD \diamondsuit T5540	MDD ◇ T5540E	D-frame	Approx. 2.3			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220	Connector Kit	A-frame type		
		2000	MSME202 □ 1 *	76	MED ◇ T7364	MED ♦ T7364E	E-frame	Approx. 3.3	MFECA 0**0ETD	MFECA 0**0ETE			_	DV0P4285 Note) 7	DV0P223	DV0PM20043	for Power Supply Input Connection	D-frame Dou type E-frame (200		
F MSME	3-phase 200 V	3000 4000			MFD \diamondsuit TA390 MFD \diamondsuit TB3A2	MFD ♦ TA390E		Approx. 4.5 Approx. 6	_		MFMCA	MFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410		D-frame (400 E-frame (400		
MSME 3000 r/m	in	5000 750	MSME502 □ 1 * MSME084 □ 1 *	79 104	,	MFD \diamondsuit TB3A28		Approx. 7.5 Approx. 1.6			0**3ECT	0**3FCT		×2 in parallel	Note) 8		Connector Kit for Control Power	D-frame and E-frame (400		
		1000	MSME104 🗆 1 *	105	MDD 🔷 T3420	MDD ♦ T3420E MDD ♦ T3420E	D-frame		-		MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		Recommended	Supply Input Connection	A-frame to D-		
	3-phase 400 V	2000	MSME204 □ 1 *	107	MED \diamondsuit T4430	MED \diamondsuit T4430E MFD \diamondsuit T5440E	E-frame		MFECA 0**0ETD	MFECA 0**0ETE	0 2205	0 2.05	_	DV0PM20049	— Note) 8	components P.252	for Motor Connection	E-frame (200 D-frame (400		
		4000 5000	MSME404 1 * MSME504 1 *	109	· ·	MFD \diamondsuit TA464E	F-frame	Approx. 4.5 Approx. 6 Approx. 7.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel		1.232	Connector Kit for Regenerative Resistor	E-frame D-frame (400		
	Single		MDME102 \(\text{1 *}		MDD \diamondsuit T3530	·		Approx. 1.8							DV0P228 DV0P222		Connector Kit fo			
	phase/ 3-phase 200 V	1500	MDME152 □ 1 *	81	MDD 🔷 T5540	MDD \diamondsuit T5540E	D-frame	Approx. 2.3	3		MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220	Motor/Encoder	Connection		
		2000	MDME202 □ 1 *	82	MED ◇ T7364	MED ♦ T7364E	E-frame	Approx. 4.5 F-frame Approx. 6 Approx. 6		MFECA				DV0P4285 Note) 7	DV0P223	DV0PM20043		RS485, RS23 Safety		
		3000 4000	MDME302	83 84	-	MFD ♦ TA390E MFD ♦ TB3A2E	_		0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0P4285 ×2 in parallel	DV0P224 DV0P225	DV0P3410	Connector Kit	Interface External Scale			
	3-phase 200 V	5000 7500	MDME502 □ 1 * MDME752 □ 1 *	85 86	MFD ♦ TB3A2	MFD \diamondsuit TB3A2	G-frame	Approx. 7.5 Approx. 11	_				0 0201	0 0101		DV0P4285	_	Recommended	Battery For Abs	Encoder Analog Monito
MDME			MDMEC12 ☐ 1 * MDMEC52 ☐ 1 *		MHD ♦ TC3B4	-	H-frame	Approx 17	_		Note) 6			x3 in parallel DV0PM20058	Note) 8	components P.252	Battery Box No			
2000 r/m	in	400	MDME044 \(\Boxed{1} \) 1 *	111	MDD 🔷 T2407	MDD \diamondsuit T2407E		Approx. 0.9			MFMCD	MFMCE		DV0PM20048			Bracket Encoder Cable	without Batter with Battery B		
Midd		1500	MDME104	114	MDD <> 13420	MDD ♦ T2412E MDD ♦ T3420E MED ♦ T4430E	-	Approx. 2.3			0**2ECD	0**2FCD		DV0PM20049				Note) 9		
Middle inertia	3-phase 400 V	3000 4000	MDME304	116 117	MFD \diamondsuit T5440 MFD \diamondsuit TA464	MFD \diamondsuit T5440E	F-frame	Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 ×2 in parallel	— Note) 8	Recommended components P.252	Motor Cable	without Brake		
		7500	_		MGD \diamondsuit TB4A2			Approx. 11	_		_	_	_	DV0PM20049 ×3 in parallel				with Brake		
			MDMEC14 ☐ 1 * MDMEC54 ☐ 1 *		,	4	H-frame	Approx. 17 Approx. 22			Note) 6	Note) 6		DV0PM20059				with Brake 50 Ω 25 W		
	Single phase/ 3-phase 200 V	1500	MFME152 1 *	89	MDD \diamondsuit T5540	MDD \diamondsuit T5540E	D-frame	Approx. 2.3	MFECA	MFECA	MFMCA 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220	External Regenerative	100 Ω 25 W 25 Ω 50 W 50 Ω 50 W		
MFME	3-phase	2500	MFME252 1 *	90	MED ◇ T7364	MED ♦ T7364E	E-frame	Approx. 3.8	0**0ETD	0**0ETE	MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 7	DV0P224	DV0PM20043	Regenerative Resistor	30 Ω 100 W 20 Ω 130 W		
(Flat type 2000 r/m	,		MFME452 1 *		Ť	MFD \diamondsuit TB3A28					MFMCD 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	Note) 8	DV0P3410		120 Ω 80 W 80 Ω 190 W		
	3-phase 400 V		MFME154 1 * MFME254 1 *			MDD ◇ T3420E MED ◇ T4430E			MFECA	MFECA 0**0ETE	MFMCF 0**2ECD	MFMCE 0**2FCD	_	DV0PM20048 DV0PM20049	_	Recommended components	Reactor	DV0P220, DV DV0P223, DV DV0P227, DV		
	400 V	4500	MFME454 □ 1 *		MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 6.8	0**0ETD	U UEIE	MFMCD 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	Note) 8	P.252	Noise Filter	DV0P4170, D DV0P4220, D DV0P3410		

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

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

Note) 4 Because A5IE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

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

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

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

Note) 8 Reactor should be prepared by the user.

Note) 9 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

Table of Part Numbers and Options

0.9 kW to 7.5 kW IP67 motor (MGME)

	Motor					Driver		Power			Optional	parts						
		Power	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series Part No.		capacity	Encode	er Cable	Motor	Cable	Brake Cable	External	Reactor		
	Motor series	supply	(W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Frame	(rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9	without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter	
		Single phase/ 3-phase 200 V	900	MGME092 □ 1 *	92	MDD ◇ T5540	MDD ♦ T5540E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220	
			2000	MGME202 □ 1 *	93	MFD ♦ TA390	MFD ♦ TA390E		Approx. 3.8	MFECA	MFECA	1451404	1451404		D) (0D (005	DV0P223		
			3000	MGME302 □ 1 *	94	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5	0**0ETD	0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	-	DV0P4285 ×2 in parallel	DV0P224	DV0P3410	
=	MGME	3-phase	4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5			0 020.	0.0.		712 III paranoi			
Middle inertia	(Low speed/ High torque type	200 V	6000	MGME602 □ 1 *	96	MGD ♦ TC3B4	-	G-frame	Approx. 9.0			Note) 6	— Note) 6		DV0P4285 x3 in parallel	Note) 7	Recommended components P.252	
tia	1000 r/min		900	MGME094 □ 1 *	125	MDD ◇ T3420	MDD ◇ T3420E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048			
			2000	MGME204 ☐ 1 *	126	MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 3.8			1451404	1451404		D) (0D) 1000 (0		Recommended	
		3-phase 400 V	3000	MGME304 □ 1 *	127	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	F-frame	Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFMCA 0**3ECT	MFMCA 0**3FCT	_	DV0PM20049 ×2 in parallel	Note) 7	components	
			4500	MGME454 ☐ 1 *	128	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5	0 0215	0 0212	0 0201	0 01 01		AL III parallol	. 1010, 7	P.252	
			6000	MGME604 □ 1 *	129	MGD ♦ TB4A2	_	G-frame	Approx. 9.0)		— Note) 6	– Note) 6		DV0PM20049 ×3 in parallel			
		Single phase/	1000	MHME102 □ 1 *	97	MDD ◇ T3530	MDD ◇ T3530E		Approx. 1.8			MFMCD	MFMCA			DV0P228 DV0P222		
		3-phase 200 V	1500	MHME152 □ 1 *	98	MDD ◇ T5540	MDD \diamondsuit T5540E	D-frame	Approx. 2.3				0**2ECD	0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220
			2000	MHME202 □ 1 *	99	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	MFECA	MFECA	MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 8	DV0P223	DV0PM20043	
			3000	MHME302 ☐ 1 *	100	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 4.5	0**0ETD	0**0ETE	МЕМОА	MEMOA		DV0D400F	DV0P224		
		3-phase	4000	MHME402 ☐ 1 *	101	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	
I		200 V	5000	MHME502 ☐ 1 *	102	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5									
High inertia	MHME 2000 r/min		7500	MHME752 □ 1 *	103	MGD ♦ TC3B4	-	G-frame	Approx. 11			— Note) 6	— Note) 6		DV0P4285 x3 in parallel	Note) 7	Recommended components P.252	
			1000	MHME104 ☐ 1 *	130	MDD 🔷 T2412	MDD \diamondsuit T2412E	D-frame	Approx. 1.8			MFMCD			DV0DM20049			
			1500	MHME154 ☐ 1 *	131	MDD 🔷 T3420	MDD ◇ T3420E	D-frame	Approx. 2.3			0**2ECD	MFMCE		DV0PM20048			
			2000	MHME204 □ 1 *	132	MED ◇ T4430	MED ◇ T4430E	E-frame	Approx. 3.3	MEEOA	MEEOA	MFMCE 0**2ECD	MCE 0**2FCD		DV0PM20049		Recommended	
		3-phase 400 V	3000	MHME304 □ 1 *	133	MFD 🔷 T5440	MFD \diamondsuit T5440E		Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	МЕМОА	MEMOA	-	DV0DM00040	Note) 7	components	
			4000	MHME404 ☐ 1 *	134	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 6	5 5215	0 0212	MFMCA 0**3ECT	MFMCA 0**3FCT		DV0PM20049 ×2 in parallel	, ,	P.252	
			5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5			5 5251	3 0.01		··_ iii parailoi			
			7500	MHME754 ☐ 1 *	136	MGD ♦ TB4A2	_	G-frame	Approx. 9.0			— Note) 6	– Note) 6		DV0PM20049 ×3 in parallel			

Note) 1	Rotary encoder specifications	: Motor specification: *	(refer to P.16)
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Note) 2 🔷 : Drivers series K: A5II series H: A5 series

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	Title		Part No.	Pag	
Interface Cable			DV0P4360		
			DV0P4120		
			DV0P4121		
Interface Conve	rsion Cable		DV0P4130	197	
interiace conve	olon oablo		DV0P4131		
			DV0P4132		
		Single row	DV0FM20032		
Connector Kit	to D-frame	ype Double row	DV0PM20033		
for Power Supply Input		ype	DV0DM00044	200	
Connection	E-frame (2 D-frame (4		DV0PM20044 DV0PM20051		
	,				
Connector Kit	E-frame (4	.00 V)	DV0PM20052		
Connector Kit for Control Power Supply Input Connection	D-frame ar E-frame (4		DV0PM20053		
Connector Kit	A-frame to	D-frame	DV0PM20034	20	
or Motor	E-frame (2	200 V)	DV0PM20046	20	
Connection	D-frame (4	100 V)	DV0PM20054		
Connector Kit	E-frame	-	DV0PM20045		
or Regenerative Resistor	D-frame (4	100 V)	DV0PM20055		
			DV0PM20036	20	
Connector Kit fo	r		DV0PM20037		
Motor/Encoder (DV0PM20038	20	
			DV0PM20039	20	
	RS485, RS	S232	DV0PM20024		
Connector Kit	Safety		DV0PM20025	19	
	Interface		DV0P4350		
	External So	cale	DV0PM20026		
	Encoder		DV0PM20010	19	
	Analog Mo	nitor Signal	DV0PM20031		
Battery For Abso			DV0P2990		
	nate Encou	CI	DV0F2990		
		OI .	DV0P2990 DV0P4430	20	
Battery Box Not Mounting		OI .			
Battery Box Not Mounting	e) 9 D-frame		DV0P4430	20	
Battery Box Not Mounting Bracket	e) 9 D-frame without Ba with Batter	ttery Box	DV0P4430 DV0PM20030	20	
Battery Box Not Mounting Bracket	e) 9 D-frame without Ba	ttery Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD	20	
Battery Box Not Mounting Bracket	e) 9 D-frame without Ba with Batter	ttery Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE	20	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9	ttery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD	20 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter	ttery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD	20 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9	ttery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD	20 19 19	
Battery Box Not Mounting Bracket	e) 9 D-frame without Ba with Batter Note) 9	ttery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**3ECT MFMCA0**3ECT	20 19 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9	ttery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD	20 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9	ttery Box ry Box	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**2FCD	20 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake	ttery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT MFMCA0**3FCT	20 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake	ttery Box ry Box ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280	20 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake $0.00000000000000000000000000000000000$	ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT MFMCA0**3FCT	20 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W	ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280	20 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake $0.00000000000000000000000000000000000$	ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283	20 19 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W	ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282	20 19 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W 50 Ω 50 W	ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283	20 19 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W 50 Ω 50 W 30 Ω 100 V	ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4283 DV0P4284	20 19 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake $50 \Omega 25 W$ $100 \Omega 25 V$ $25 \Omega 50 W$ $50 \Omega 50 W$ $30 \Omega 100 V$ $20 \Omega 130 V$ $120 \Omega 80 V$ $80 \Omega 190 V$	ake	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCEO**2ECD MFMCFO**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049	20 19 19 19 19	
Battery Box Not Mounting Bracket Encoder Cable	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W 50 Ω 50 W 30 Ω 100 V 20 Ω 130 V 120 Ω 80 V 80 Ω 190 V DV0P220, DV0P223,	ake W N N DV0P221, DV0P224,	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222,	19 19 19 19 19 21	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake $50 \Omega 25 W$ $100 \Omega 25 V$ $25 \Omega 50 W$ $30 \Omega 100 V$ $20 \Omega 130 V$ $120 \Omega 80 V$ $80 \Omega 190 V$ $DV0P220,$ $DV0P223,$ $DV0P4170$	ake DV0P221, DV0P228, DV0PM2	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	20 19 19 19 19 19 21	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake $50 Ω 25 W$ $100 Ω 25 V$ $25 Ω 50 W$ $30 Ω 100 V$ $20 Ω 130 V$ $120 Ω 80 V$ $80 Ω 190 V$ $DV0P220,$ $DV0P227,$ $DV0P4170$ $DV0P4220$	ake DV0P221, DV0P228, D, DV0PM2	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCD0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047	200 199 199 199 199 210 200 250	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W 30 Ω 100 V 20 Ω 130 V 120 Ω 80 V 80 Ω 190 V DV0P220, DV0P227, DV0P4170 DV0P4220 DV0P3410	ake DV0P221, DV0P224, DV0P228, D, DV0PM2	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCEO**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043	20 19 19 19 19 21 20 25	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor Reactor	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W 50 Ω 50 W 30 Ω 100 V 20 Ω 130 V 120 Ω 80 V 80 Ω 190 V DV0P220, DV0P223, DV0P227, DV0P4170 DV0P4220 DV0P3410 Single pha	ake AND DV0P221, DV0P228, D, DV0PM20,	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCEO**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043 DV0P4190	20 19 19 19 19 21 20 25 25	
Battery Box Not Mounting Bracket Encoder Cable Motor Cable External Regenerative Resistor	e) 9 D-frame without Ba with Batter Note) 9 without Bra with Brake 50 Ω 25 W 100 Ω 25 V 25 Ω 50 W 50 Ω 50 W 30 Ω 100 V 20 Ω 130 V 120 Ω 80 V 80 Ω 190 V DV0P220, DV0P223, DV0P227, DV0P4170 DV0P4220 DV0P3410 Single pha	ake AND DV0P221, DV0P224, DV0P228, D, DV0PM2	DV0P4430 DV0PM20030 MFECA0**0ETD MFECA0**0ETE MFMCA0**2ECD MFMCEO**2ECD MFMCF0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM20047 0042 0043		

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Note) 3 \diamondsuit : Drivers series K: A5IE series H: A5E series

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

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

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

Note) 7 Reactor should be prepared by the user.

Note) 8 Other combinations exist, and refer to P.210 for details.

Note) 9 Please note that a battery is not supplied together with 17-bit absolute encoder cable (with battery box). Please buy the battery part number "DV0P2990" separately.

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Inform

					(i aii oicoca typo		
					+10 %		
		100 V	Main	circuit	Single phase, 100 V to 120 V15 % 50 Hz/60 Hz		
			Control circuit		Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz		
		200 V	Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	Inpu		circuit	E-frame to H-frame	3-phase, 200 V to 230 V		
	Input power	200 V	Control	A-frame to D-frame	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	_		circuit	E-frame to H-frame	Single phase, 200 V to 230 V +10 % 50 Hz/60 Hz		
			Main circuit	D-frame to H-frame	3-phase, 380 V to 480 V +10 % 50 Hz/60 Hz		
		400 V	Control	D-frame to	DC 24 V ± 15 %		
-			onoun	H-frame	Ambient temperature: 0 °C to 55 °C (free from freezing)		
			tempe	erature	Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)		
	Env	ironment	hum	nidity	Both operating and storage : 20 % to 85 %RH (free from condensation*1)		
			Alti	tude	Lower than 1000 m		
			Vibr	ation	5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)		
	Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive		
Ва	Enc	oder feedback			17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial		
Basic Spe				A/B phase	A/B phase, initialization signal defferential input.		
Specifications		dback so	scale serial		Manufacturers that support serial communication scale: DR. JOHANNES HEIDENHAIN GmbH Fagor Automation S.Coop. Magnescale Co., Ltd. Mitutoyo Corporation Nidec Sankyo Corporation Renishaw plc		
	P	Control	oian al	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.		
	Parallel	Control	signai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.		
	000	Analog	oianal	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)		
	connector	Allalog	sigilai	Output	2 outputs (Analog monitor: 2 output)		
	ctor	Pulse si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)		
		i uise si	griai	Output	4 outputs (Line driver: 3 output、open collector: 1 output)		
				USB	Connection with PC etc.		
		nmunicat ction	ion	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) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))		
	Regeneration			A, B, G and H-frame: no built-in regenerative resistor (external resistor only) C-frame to F-frame: Built-in regenerative resistor (external resistor is also enabled.)			
	Dyr	namic bra	ke		A-frame to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only		
	Cor	ntrol mod	е		Switching among the following 7 mode is enabled, (1) Position control (2) Speed control (3) Toque control (4) Position/Speed control (5) Position/Torque control (6) Speed/Torque control (7) Full-closed control		

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

	Control input		(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	Exclusive interface for Photo-coupler: 500 kpps	
	Pulse	Input pulse signal format	Exclusive interface for line driver: 4 Mpps Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command a direction)	
Position control	input	Electronic gear (Division/Multiplication of command pulse)	1/1000 times 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	us Speed Observer	Available	
	Damping C	ontrol	Available	
	2DOF settir	ngs	Only available at A5II Series	
	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.	
Sp	Analog	Velocity command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (6 V/Rated rotational speed Default)	
원	input	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.	
		Torque feed forward input	Analog voltage can be used as torque feed forward input.	
contro	Internal velo	ocity command	Switching the internal 8speed is enabled by command input.	
<u>o</u>		•	Individual setup of acceleration and deceleration is enabled, with 0 s	
	Soft-start/down function		to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.	
	Zero-speed clamp		Speed zero clamp input is enabled.	
	Instantaneous Speed Observer		Available	
	Speed Control filter		Available	
	2DOF settings		Only available at A5II Series	
_	Control input		Speed zero clamp, Torque command sign input etc.	
orq	Control out		Speed arrival etc.	
Torque contro	Analog input	Torque command input	Speed command input can be provided by means of analog voltage. Parameters are used for scale setting and command polarity. (3 V/rat torque Default)	
ň	Speed limit	function	Speed limit value with parameter is enabled.	
	Control input		(1) Deviation counter clear (2) Command pulse inhibition (3) Command dividing gradual increase switching (4) Damping cont switching etc.	
	Control outp	out	Full-closed positioning complete etc.	
F _L		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver : 4 Mpps	
<u>C</u>	D. I.	Input pulse signal format	Differential input	
Full-closed control	Pulse input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 times to 1000 times	
<u>o</u>		Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input	
N [*]	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 times to 160 times	
	Damping C	ontrol	Available	
C	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.	
òm	Division of	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).	
Common	Protective	Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.	
ĭ				
ă	function	Soft error	Excess position deviation, command pulse division error, EEPROM erretc.	

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

A5IIE, A5E series (Position control type)

		100 V	Main	circuit	Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz		
		100 V	Contro	ol circuit	Single phase, 100 V to 120 V +10 % 50 Hz/60 Hz		
			Main	A-frame to D-frame	Single/3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
	Input power	200 V	circuit	E-frame to F-frame	3-phase, 200 V to 230 V +10 % 50 Hz/60 Hz		
	ower	200 V	Control	A-frame to D-frame	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz		
			circuit	E-frame to F-frame	Single phase, 200 V to 230 V +10 % 50 Hz/60 Hz		
		400 V	Main circuit	D-frame to F-frame	3-phase, 380 V to 480 V		
		100 7	Control circuit	D-frame to F-frame	DC 24 V ± 15 %		
Basic			temperature		Ambient temperature: 0 °C to 50 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation 1)		
sic Sp	Env	rironment	humidity		Both operating and storage : 20 % to 85 %RH (free from condensation 1)		
Specifications			Alti	tude	Lower than 1000 m		
ations			Vibr	ation	5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)		
0,	Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive		
	Enc	coder feed	dback		20-bit (1048576 resolution) incremental encoder, 5-wire serial		
	Pa	Control	Input		General purpose 10 inputs The function of general-purpose input is selected by parameters.		
	Parallel I/O	Control	Signal	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.		
		Analog	sional	Input	none		
	connector	7 tildiog	oigilai	Output	2 outputs (Analog monitor: 2 output)		
	tor	Pulse si	anal	Input	2 inputs (Photo-coupler input, Line receiver input)		
				Output	4 outputs (Line driver: 3 output、open collector: 1 output)		
	Communication USB function		USB	Connection with PC etc.			
	Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)		
	Regeneration			A, B-frame: no built-in regenerative resistor (external resistor only) C-fram to F-frame: Built-in regenerative resistor (external resistor is also enabled.)			
	Dyr	namic bra	ıke		Built-in		
	Cor	ntrol mod	е		(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control		

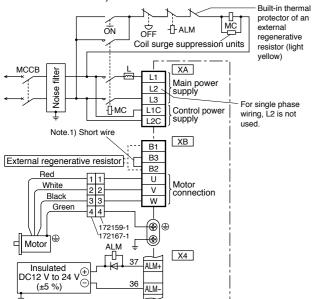
^{*1} Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

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

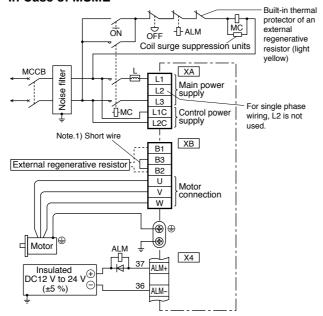
Wiring Diagram

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

· In Case of MSMD, MHMD



· In Case of MSME



Note.1)

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

Note.1)

Built-in thermal

protector of an

regenerative

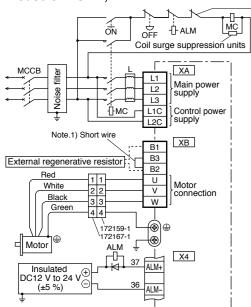
resistor (light

external

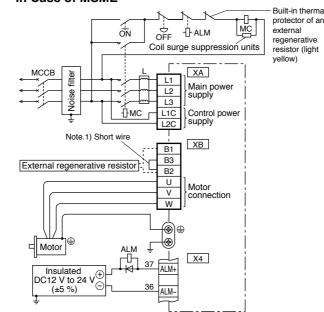
Frame	Short wire	Built-in		ne connector XB
	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between B1-B2	Always open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

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

· In Case of MSMD. MHMD



· In Case of MSME



Note.1)

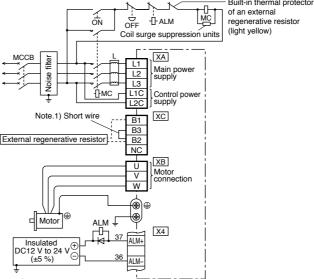
Frame	Short wire	Built-in	Connection of the	ne connector XB
No.	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between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

Note.1)

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

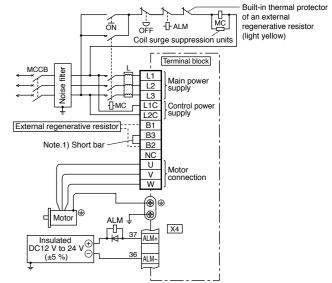
^{*} Refer to P.186, P.187, Specifications of Motor connector.

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



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

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



Note.1)

supply

Insulated ⊕ DC24 V ⊝

Dynamic Brake resistor

dynamic brake resistor.

Please use it with the

coil surge suppression

units recommended

by manufacturer of

Turns on/off the -

3 pieces Note.2)

Coil surge suppression units

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

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

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

∯ MC1

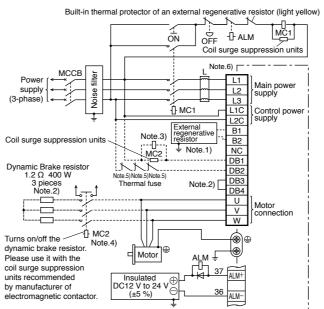
OFF TALM

Coil surge suppression units

Control powe

supply

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



ote 1	About	regenerative	resistor
OLG. I	<i>,</i> About	regenerative	16919101

	Short bar	Built-in	Connection of terminal block		
	(Accessory)	regenerative resistor	In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
G-frame	without	without	Connect an external regenerative resistor between B1-B2	Open between B1-B2	
Note.2	2) About	dynamic b	rake resistor		
Frame	Short bar	Charthan Built-in	Connection of terminal block		
		(Accessory) dynamic brak resistor.	dynamic brake resistor.	In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor
0 (- 245		Remove attached short bar between DB3-DB4.	Shorted with attached short bar	

Connect external dynamic brake resistor as shown above.

Note.1) About regenerative resistor

小 MC2

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

Motor

DC12 V to 24 V

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

Note.2) About dynamic brake resistor

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

<common for G & H frame>

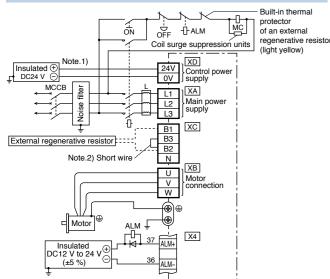
Note.3) Magnetic contactor MC2 must be the same rating as the contactor MC1 in the main circuit.

Note.4) Servo may be turned on in the external sequence if the contact deposits: to protect the system, provide the auxiliary contact.

Note.5) Provide an external protective device (e.g. thermal fuse) to monitor the temperature of the external dynamic brake resistor. Note.6) Reactor should be prepared by the customer.

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

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

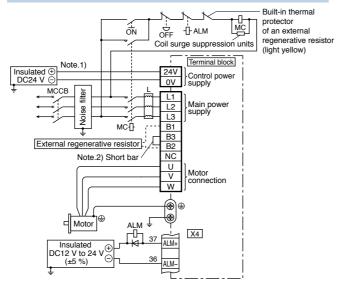


Note.1) Shielding the circuit is recommended for the purpose of noise reduction. Note.2)

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

Wiring to Connector, XA, XB, XC, XD

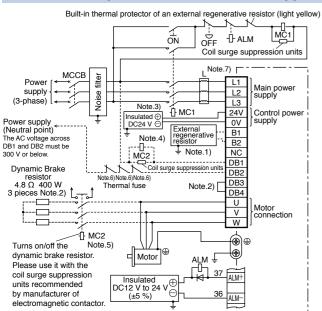
and Terminal Block



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

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

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



Note 1)	Ahout	regenerative	resistor

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

14010.2	Note.2) About dynamic brane register					
Fromo	Chart har	dynamic brake	Connection of terminal block			
Frame Short ba No. (Accessor	(Accessory)		In case of using an external dynamic brake resistor.	In case of not using an external dynamic brake resistor.		
G-frame	with	with	Remove attached short bar between DB3-DB4. Connect external dynamic brake resistor as shown above.	Shorted with attached short bar between DB3-DB4 Open between DB1-DB2		

<common for G & H frame>

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

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

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

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

Note.7) Reactor should be prepared by the customer

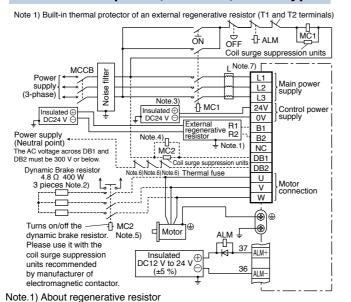
* Refer to P.186, P.187, Specifications of Motor connector

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

Note.2)

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

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



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

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

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

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

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

Outline Description of Safe Torque Off (STO)

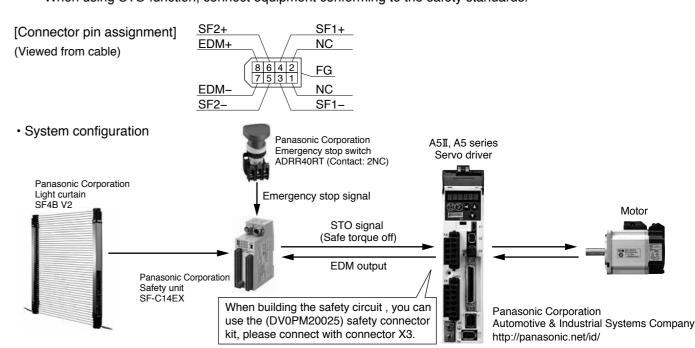
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

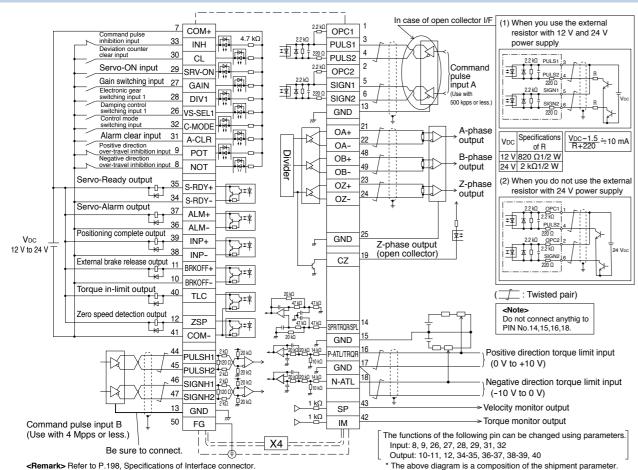
This is an alarm condition and the 7-seg LED on the front panel displays the error code number.

Safety Precautions

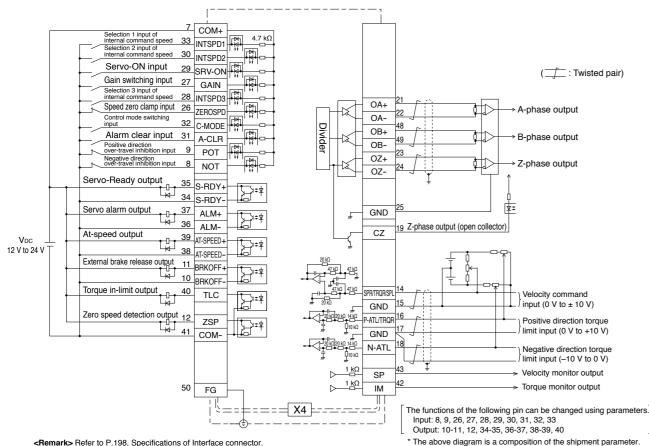
- · When using the STO function, be sure to perform equipment risk assessment to ensure that the system conforms to the safety requirements.
- · Even while the STO function is working, the following potential safety hazards exist. Check safety in risk assessment.
- · The motor may move when external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



Wiring Example of Position Control Mode

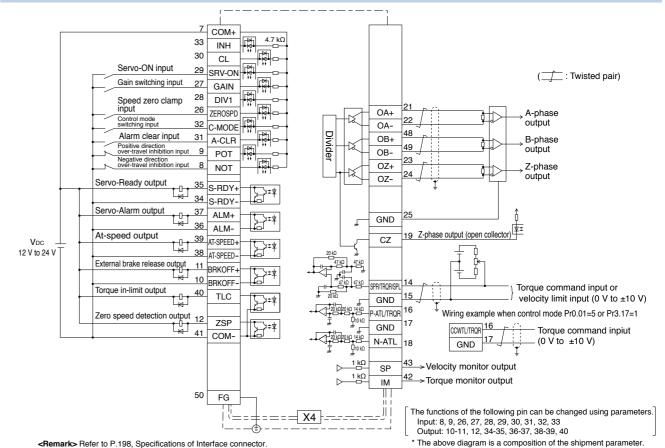


Wiring Example of Velocity Control Mode (Excluding A5IIE, A5E series)

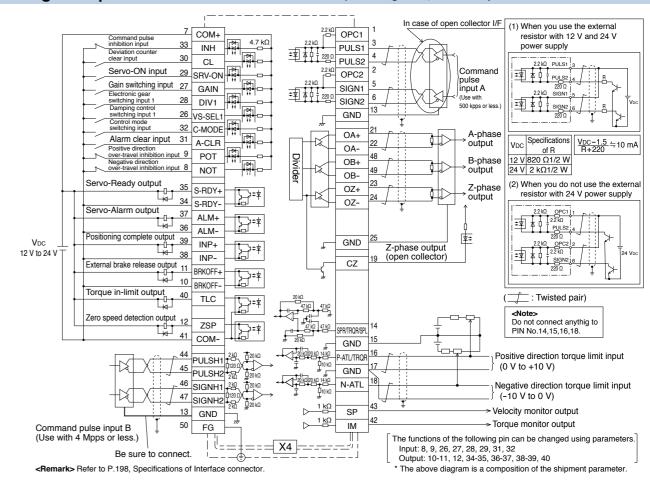


The above diagram is a composition of the shipment parameter.

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



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



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

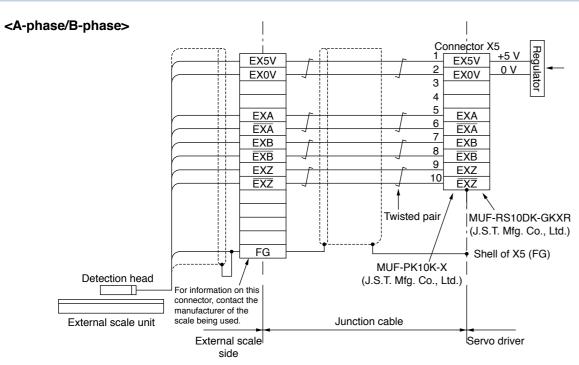
A5 Family

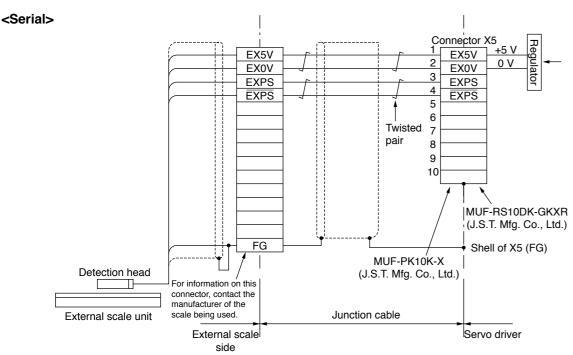
Applicable External Scale

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

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

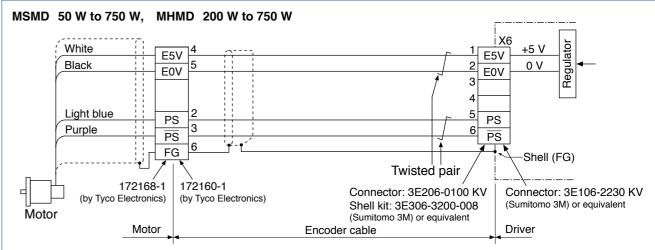
Wiring Diagram of X5

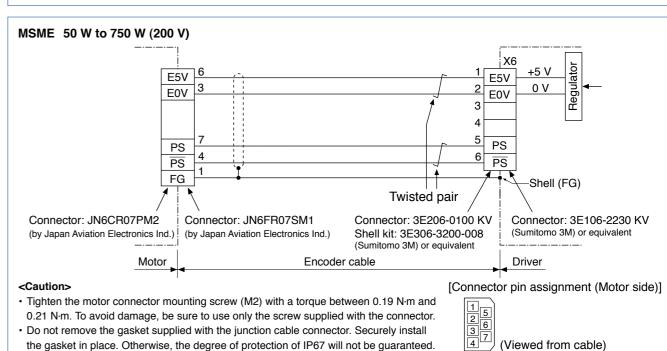


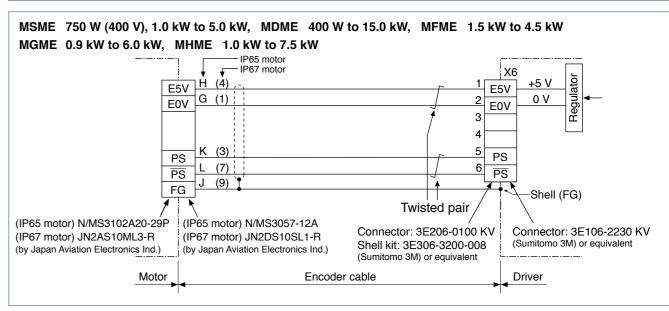


In Case of 20-bit Incremental Encoder

Wiring to the Connector, X6







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

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

Tyco Electronics

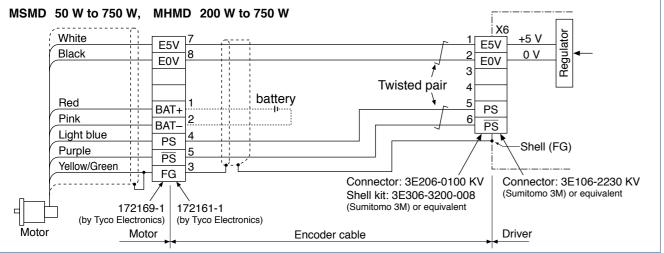
Japan Molex Inc.

Sumitomo 3M

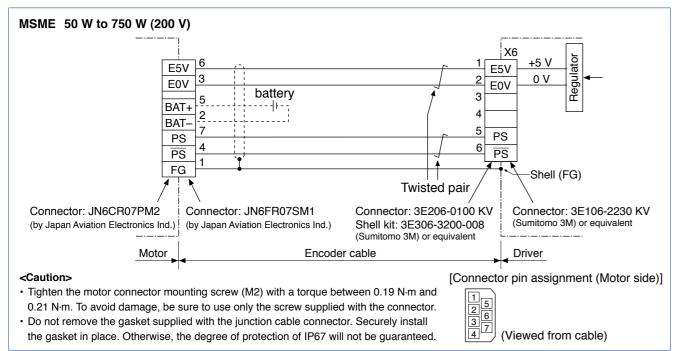
Sumitomo 3M

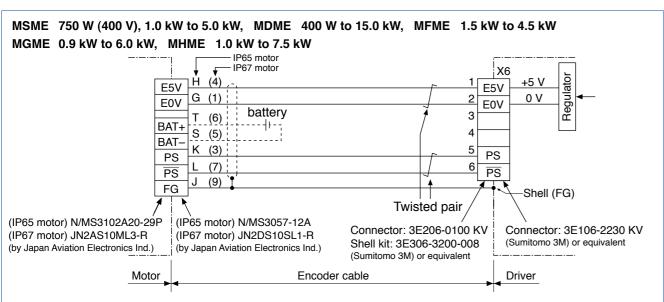
A5 Family

In Case of 17-bit Absolute Encoder (A5IE, A5E series does not correspond.) MSMD 50 W to 750 W, MHMD 200 W to 750 W

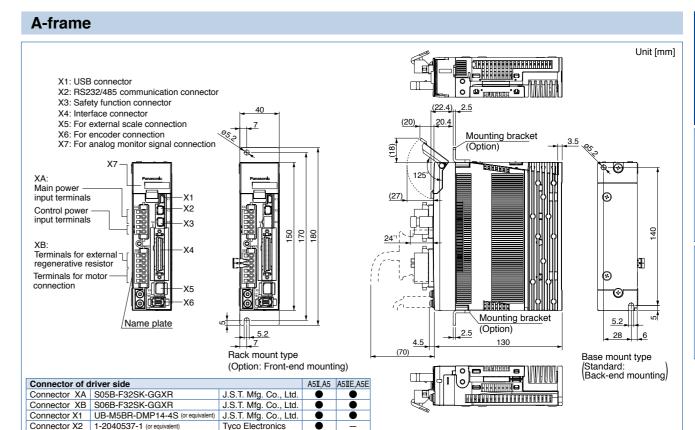


Wiring to the Connector, X6





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



B-frame

Connector X3

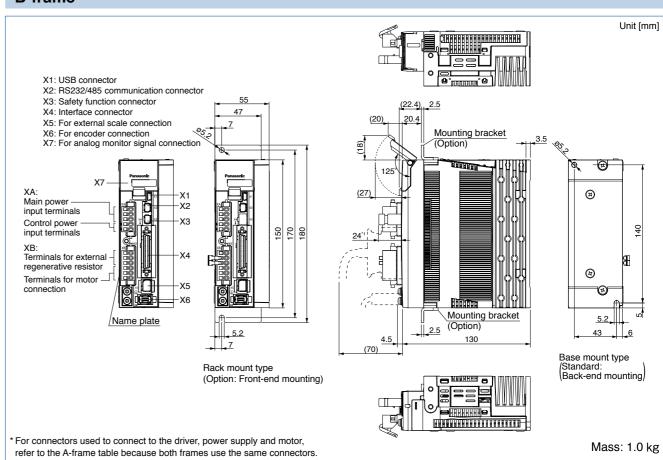
2040537-1 (or equivalent

Connector X5 MUF-RS10DK-GKXR (or equivalent) J.S.T. Mfg. Co., Ltd.

Connector X4 10250-52A2PF (or equivalent

Connector X7 530140610 (or equivalent

Connector X6 3E106-2230 KV (or equivalent)



Mass: 0.8 kg

Connector of power and motor side (Attached to the driver) | A5II.A5 | A5IIE.A5E

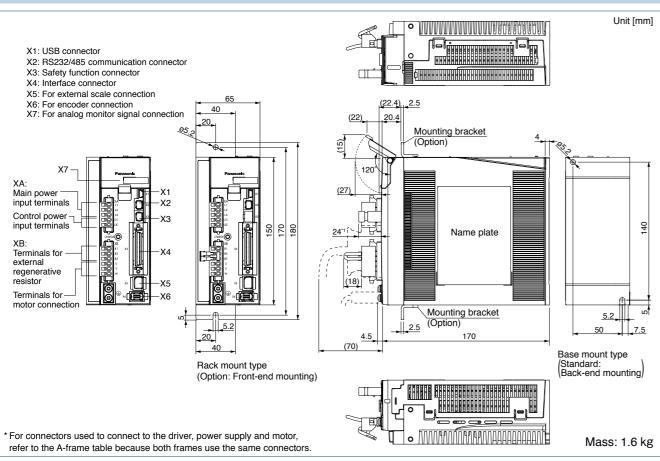
Connector XA 05JFAT-SAXGF J.S.T. Mfg. Co., Ltd.

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

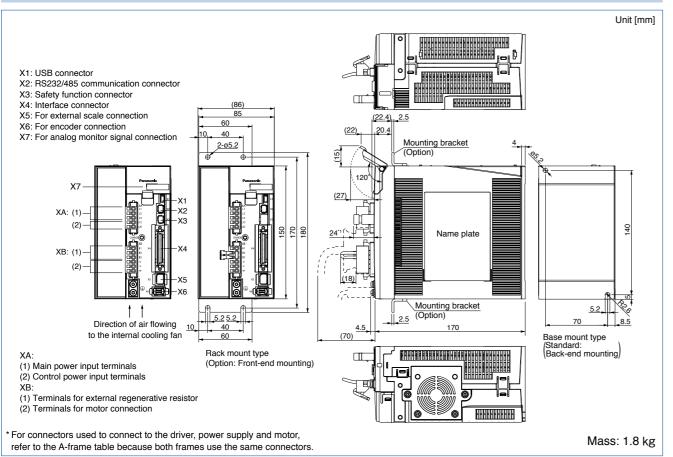
C-frame

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

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

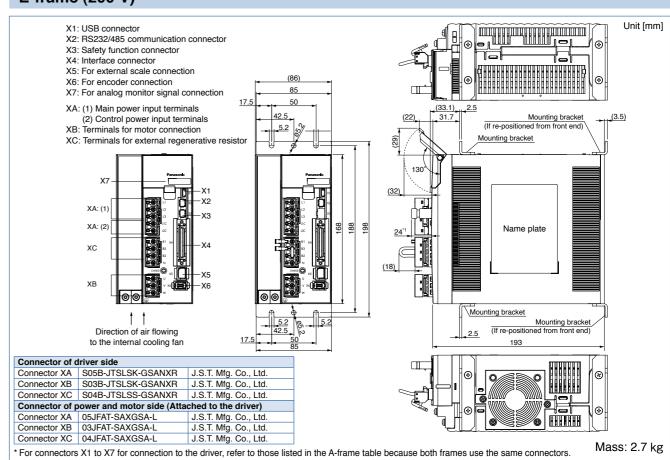


D-frame (200 V)



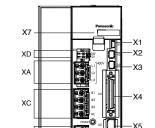
Unit [mm] XA: Main power input terminals XB: Terminals for motor connection XC: Terminals for external regenerative XD: Control power input terminals Rack mount type X1: USB connector (Option: Front-end mounting) X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector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

E-frame (200 V)



E-frame (400 V)

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



Direction of air flowing to the internal cooling fan

42.5

Name plate \Mounting bracket 193

(If re-positioned from front end)

Mounting bracket

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

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

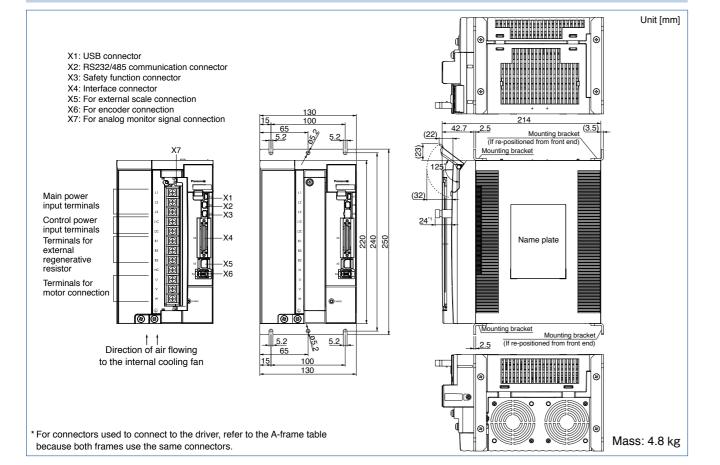
Connector of driver side
Connector XA | S03B-JTSLSS-GSANYR | J.S.T. Mfg. Co., Ltd. Connector XB S03B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XC S04B-JTSLSK-GSANXR J.S.T. Mfg. Co., Ltd. Connector XD S02B-J25SK-GGR Connector of power and motor side (Attached to the driver) Connector XA 03JFAT-SAYGSA-L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

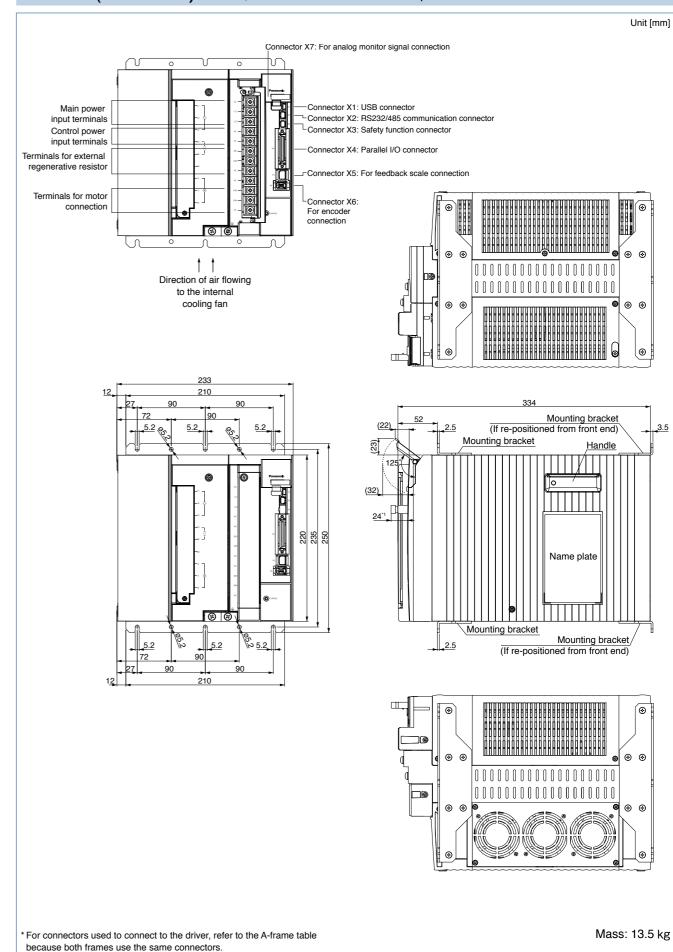
Mass: 2.7 kg

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

F-frame (200 V/400 V)

Connector XD 02MJFAT-SAGF





H-frame (200 V/400 V)

Main power input terminals

Name

MSMD (100 V/200 V)

MHMD (100 V/200 V)

200 W to 750 W.....

MSME (100 V/200 V)

50 W to 750 W......

1.0 kW to 5.0 kW.

1.0 kW to 15.0 kW.

MSME (200 V)

MDME (200 V)

MFME (200 V) 1.5 kW to 4.5 kW

MGME (200 V)

MHME (200 V)

MSME (400 V)

MDME (400 V) 400 W to 15.0 kW.

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

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

MHME (400 V)

IP67 motor

1.0 kW to 7.5 kW P.130

750 W to 5.0 kW.

1.0 kW to 7.5 kW

0.9 kW to 6.0 kW

50 W to 750 W

Motor Contents

. P.74

. P.80

. P.89

. P.92

. P.97

P.104

P.137

.P.144

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

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

Motor Lineup

Small capacity

Features



MSME Low inertia

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

Enclosure: IP67



MSMD Low inertia

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



MHMD High inertia

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



Low inertia

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

Rated speed: 3000 r/min Rated output: 750 W(400 V), 1.0 kW to 5.0 kW Enclosure: IP65, IP67



Middle inertia

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

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



MFME (Flat type)* Middle inertia

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



(Low speed/ High torque type) Middle inertia

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

Enclosure: IP65, IP67

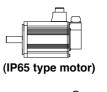


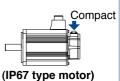
High inertia

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

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

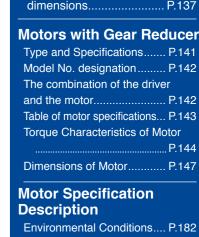
Middle capacity motor has the IP67 type.





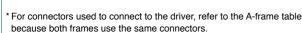
Part No.: M ME **** **

C: IP65 motor 1: IP67 motor





Notes on [Motor specification] Permissible Load at Output Shaft... Built-in Holding Brake



Direction of air flowing

to the internal

cooling fan

A5IE, A5E series is out of the lineup.

X7: For analog monitor signal connection

X2: RS232/485 communication connector

-X1: USB connector

Screws for earth (x2)

Control terminal for dynamic brake resiste

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

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

Unit [mm]

Base mount type

(Back-end mounting)

Mass: 21.0 kg

			AC100 V		
Mataumandal	IP65		MSMD5AZG1□	MSMD5AZS1	
Motor model *1		IP67		-	-
Amaliaabla	Model	A5II, A5	series	MAD	T1105
Applicable driver *2	No.	A5IIE, A5E series		MAD ⊘T1105E	_
unver	Fr	ame syml	bol	A-fra	ame
Power supply	capacit	y	(kVA)	0	.5
Rated output			(W)	5	0
Rated torque			(N·m)	0.16	
Momentary Ma	ax. peal	k torque	(N·m)	0.48	
Rated current		(/	A(rms))	1.1	
Max. current		(A(o-p))	4.7	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4280		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	brake	0.025	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

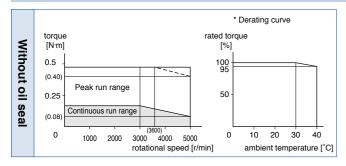
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

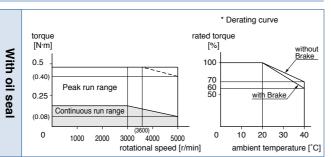
• Permissible load (For details, refer to P.183)

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

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

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

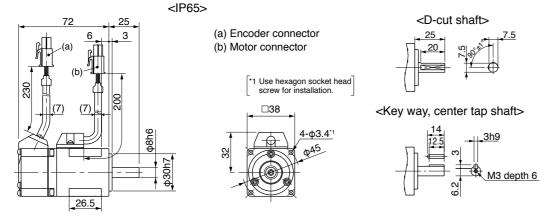




Dimensions

<Cautions>

<Without Brake> Mass: 0.32 kg



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

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

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

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

[Unit: mm]

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

Specifications

				AC200 V		
Mataumad	-1	IP65		MSMD5AZG1□	MSMD5AZS1	
Motor mode	ÐI ⊧1	IP67		-	_	
A I' l. l .	Mode	A5II, A5	series	MAD ◇T150 5		
Applicable driver	No.	A5IIE, A	5E series	MAD ⊘T1505E	_	
unven	F	rame sym	bol	A-fr	ame	
Power supp	oly capaci	ty	(kVA)	0.	.5	
Rated outpo	ut		(W)	5	0	
Rated torqu	ıe		(N·m)	0.	16	
Momentary	Max. pea	ık torque	(N·m)	0.48		
Rated curre	ent	(A(rms))	1.1		
Max. currer	nt		(A(o-p))	4.7		
Regenerativ	e brake	Without option		No limit Note)2		
frequency (tin	nes/min) Note)	DV0P4281		No limit Note)2		
Rated rotat	ional spe	ed	(r/min)	3000		
Max. rotation	nal spee	d	(r/min)	5000		
Moment of	inertia	Without brake		0.025		
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		0.027		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary enco	oder spec	ifications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turi			le turn	1048576	131072	

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

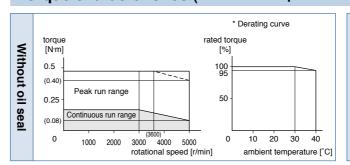
0.29 or more
35 or less
20 or less
0.3
1 or more
24±1.2

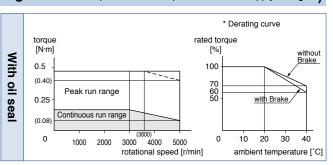
• Permissible load (For details, refer to P.183)

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

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

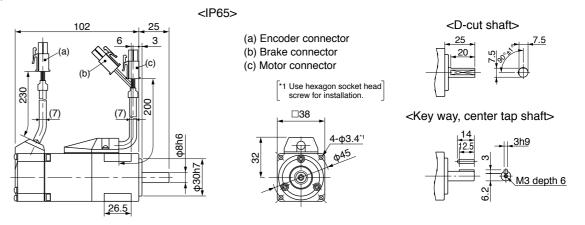
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<With Brake> Mass: 0.53 kg



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

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

[Unit: mm]

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

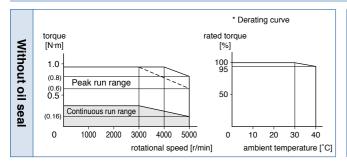
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

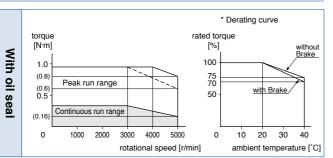
Permissible load (For details, refer to P.183)

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

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

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

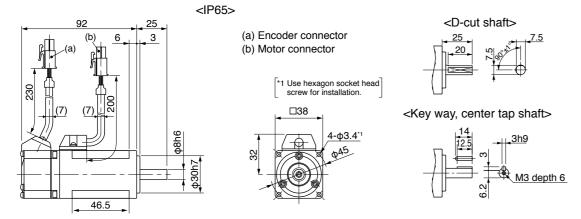




Dimensions

<Cautions>

Mass: 0.47 kg <Without Brake>



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

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

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

A5 Family

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

Specifications

				AC200 V		
		IP65		MSMD012G1□	MSMD012S1	
Motor model		IP67		-	-	
A 1: 11	Model	A5II, A5	series	MAD	T1505	
Applicable driver *2	No.	A5IIE, A5E series		MAD ◇T1505E	-	
unver	Fi	rame sym	bol	A-fra	ame	
Power suppl	y capacit	у	(kVA)	0	.5	
Rated output	t		(W)	1(00	
Rated torque)		(N·m)	0.:	32	
Momentary N	Иах. реа	k torque	(N·m)	0.95		
Rated currer	nt	(.	A(rms))	1.1		
Max. current		((A(o-p))	4.	.7	
Regenerative	brake	Without option		No limit Note)2		
frequency (time		DV0P4281		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotation	nal speed		(r/min)	5000		
Moment of ir	nertia	Without brake		0.051		
of rotor (x10	⁻⁴ kg·m²)	With brake		0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per single turn			1048576	131072	

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

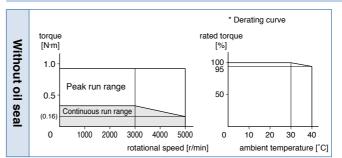
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

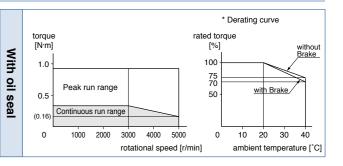
• Permissible load (For details, refer to P.183)

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

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

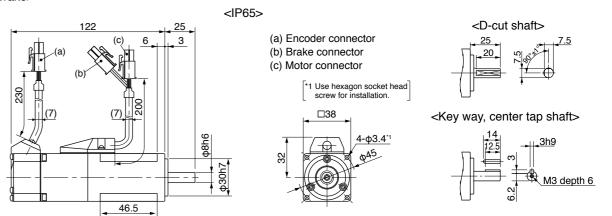
Torque characteristics (at AC200 V of power voltage)





Dimensions

Mass: 0.68 kg <With Brake>



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

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

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			AC1	AC100 V		
Matarranadal			MSMD021G1□	MSMD021S1□		
Motor model		IP67		-	-	
Amaliaahla	Model	A5II, A5	series	MBD ⊘T2110		
Applicable driver *2	No.	A5IIE, A5E series		MBD ⊘T2110E	_	
unver	Fr	ame sym	bol	B-fra	ame	
Power supply	capacit	y	(kVA)	0	.5	
Rated output			(W)	20	00	
Rated torque			(N·m)	0.	64	
Momentary M	ax. peal	k torque	(N·m)	1.91		
Rated current		(,	A(rms))	2.5		
Max. current		((A(o-p))	10.6		
Regenerative I	orake	Without	option	No limit Note)2		
frequency (times	min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	0.14		
of rotor (×10 ⁻²	kg·m²)	With b	rake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less				
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per sing	le turn	1048576	131072	

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

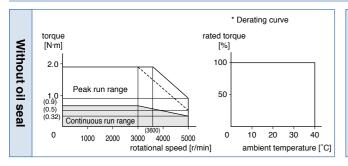
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

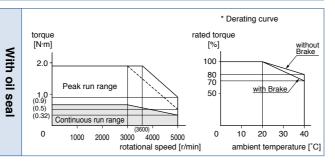
Permissible load (For details, refer to P.183)

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

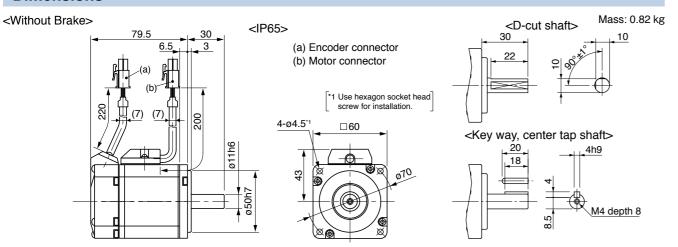
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

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[Unit: mm]

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

Specifications

			AC2	00 V	
		IP65		MSMD022G1□	MSMD022S1
Motor model		IP67		-	_
Amaliaahla	Model	A5II, A5	series	MAD	T1507
Applicable driver *2	No.	A5IIE, A	5E series	MAD ⊘T1507E	_
unver	Fr	ame sym	bol	A-fra	ame
Power suppl	y capacit	y	(kVA)	0	.5
Rated outpu	t		(W)	20	00
Rated torque	Э		(N·m)	0.0	64
Momentary I	Max. peal	k torque	(N·m)	1.91	
Rated currer	nt	(.	A(rms))	1.6	
Max. current (A(o-p))			6.9		
Regenerative	e brake	Without	option	No limit Note)2	
frequency (time	es/min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of ir	nertia	Without	brake	0.14	
of rotor (×10	⁻⁴ kg·m ²)	With b	rake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

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

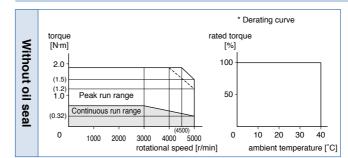
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

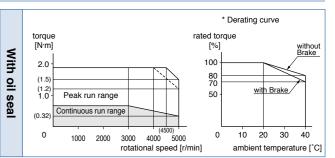
• Permissible load (For details, refer to P.183)

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

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

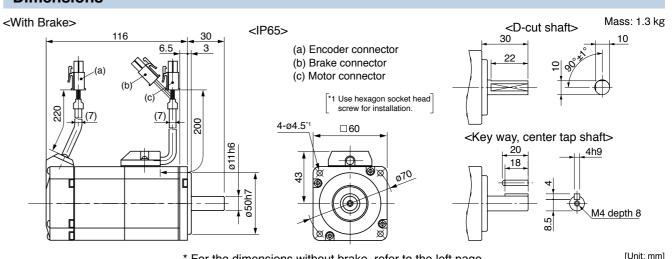
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

			AC1	00 V
Motor model		IP65	MSMD041G1□	MSMD041S1□
*1		IP67	-	_
Applicable	Model	A5II, A5 series	MCD<	T3120
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3120E	_
divei	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1.3	
Momentary Max. peak torque (N·m)			3.8	
Rated current (A(rms))			4.6	
Max. current (A(o-p))			19.5	
Regenerative b	orake	Without option	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4282	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without brake	0.26	
of rotor (×10 ⁻⁴ kg·m ²) With brake		With brake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072

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

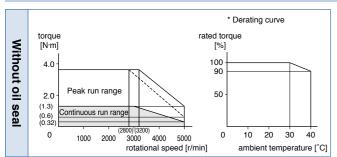
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

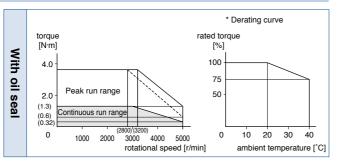
• Permissible load (For details, refer to P.183)

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

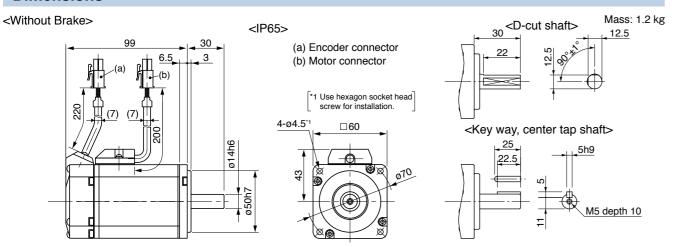
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

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[Unit: mm]

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

Specifications

				AC2	00 V	
		IP65		MSMD042G1□	MSMD042S1	
Motor mode	∂ I ⊧1	IP67		-	-	
Annlinable	Model	A5II, A5	series	МВО	T2510	
Applicable driver	No.	A5IIE, A	5E series	MBD ⊘T2510E	_	
divei	F	rame sym	bol	B-fra	ame	
Power supp	oly capacit	у	(kVA)	0.	.9	
Rated outpo	ut		(W)	40	00	
Rated torqu	ie		(N·m)	1.	.3	
Momentary	Max. pea	k torque	(N·m)	3.8		
Rated curre	ent	(A(rms))	2.6		
Max. current (A(o-p))			11.0			
Regenerativ	e brake	Without	option	No limi	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4283		No limit Note)2		
Rated rotati	ional spee	d	(r/min)	3000		
Max. rotation	nal speed		(r/min)	50	00	
Moment of	inertia	Without	brake	0.26		
of rotor (×10 ⁻⁴ kg·m²) With brake		orake	0.28			
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

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

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

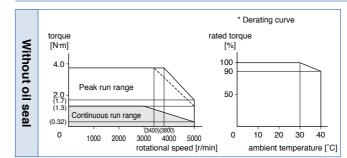
• Permissible load (For details, refer to P.183)

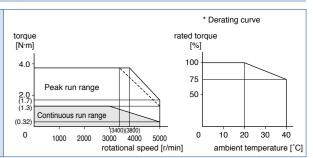
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
doscinory	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

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

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

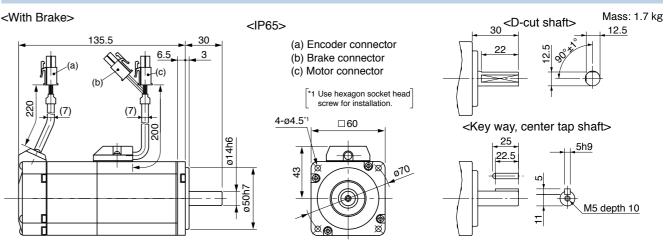
<u>e.</u>





Dimensions

<Cautions>



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

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

[Unit: mm]

			AC2	00 V
		IP65	MSMD082G1□	MSMD082S1□
Motor model *1		IP67	-	-
A 15 1-1	Model	A5II, A5 series	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	-
dilvei	Fr	ame symbol	C-fra	ame
Power supply	capacit	y (kVA)	1.	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2.	.4
Momentary Ma	ax. peal	k torque (N·m)	7.1	
Rated current (A(rms))		4.0		
Max. current (A(o-p))			17	'.0
Regenerative brake Without option		No limi	t Note)2	
frequency (times/r	min) Note)1	DV0P4283	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	0.87	
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

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

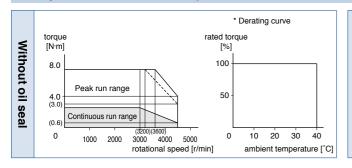
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

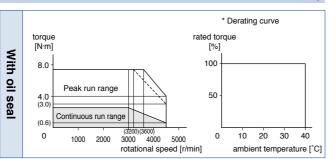
• Permissible load (For details, refer to P.183)

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

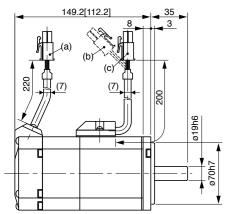
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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

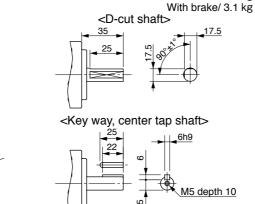




Dimensions



(a) Encoder connector (b) Brake connector (c) Motor connector *1 Use hexagon socket head screw for installation. □80



* Figures in [] represent the dimensions without brake.

[Unit: mm]

Mass: Without brake/ 2.3 kg

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

<IP65>

MEMO

			AC100 V	
		IP65	MHMD021G1□	MHMD021S1
Motor model *1		IP67	-	_
Annliaghla	Model	A5II, A5 series	MBD ⊘T2110	
Applicable driver *2	No.	A5IIE, A5E series	MBD ⊘T2110E	_
divei	Fr	ame symbol	B-fr	ame
Power supply	capacity	y (kVA)	0	.5
Rated output		(W)	20	00
Rated torque		(N·m)	0.	64
Momentary Ma	ax. peal	k torque (N·m)	1.91	
Rated current		(A(rms))	2.5	
Max. current		(A(o-p))	10.6	
Regenerative brake Without option		No lim	it Note)2	
frequency (times/n	nin) Note)1	DV0P4283	No limit Note)2	
Rated rotation	ated rotational speed (r/min)		30	00
Max. rotational speed		(r/min)	n) 5000	
Moment of ine	rtia	Without brake	0.42	
of rotor ($\times 10^{-4}$	of rotor (×10 ⁻⁴ kg·m²) With brake		0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Re	Resolution per single turn		1048576	131072

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

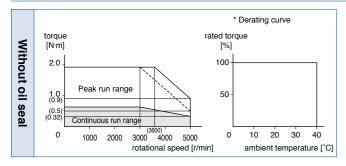
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

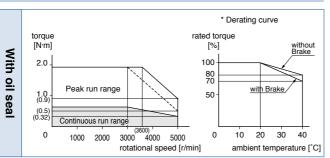
• Permissible load (For details, refer to P.183)

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

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

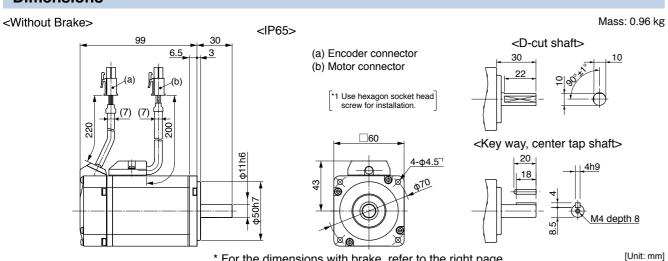
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

<Cautions>



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

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

Specifications

		AC2	00 V			
		IP65		MHMD022G1□	MHMD022S1	
Motor mode	9I ∗1	IP67		-	-	
	Model	A5II, A5	series	MAD	MAD ◇T1507	
Applicable driver	No.	A5IIE, A	5E series	MAD ◇T1507E	-	
unven	F	rame sym	bol	A-fra	ame	
Power supp	oly capaci	ty	(kVA)	0.	.5	
Rated outp	ut		(W)	20	00	
Rated torqu	ıe		(N·m)	0.0	64	
Momentary	Max. pea	k torque	(N·m)	1.91		
Rated curre	ent	(A(rms))	1.6		
Max. current (A(o-p))		6.9				
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tir	nes/min) Note)	DV0P4283 No		No limi	limit Note)2	
Rated rotat	ional spec	ed	(r/min)	3000		
Max. rotation	onal speed	d	(r/min)	5000		
Moment of	inertia	Without	brake	0.42		
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	0.45		
Recomment ratio of the			tia Note)3	30 times	s or less	
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1048576	131072	

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

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

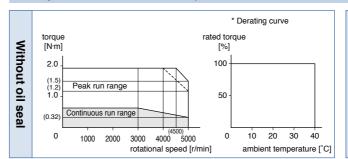
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

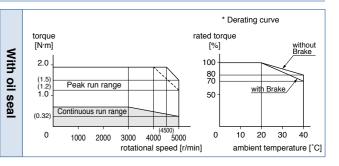
• Permissible load (For details, refer to P.183)

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

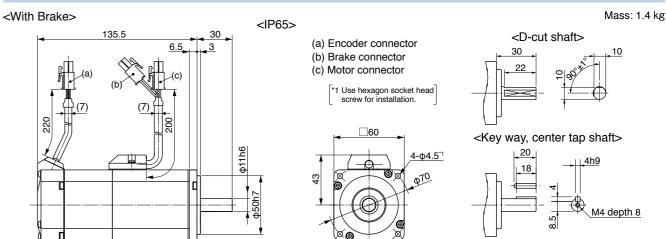
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





Dimensions



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

[Unit: mm]

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

			AC100 V	
Matauralah		IP65	MHMD041G1	MHMD041S1
Motor model *1		IP67	-	_
A multipolate	Model	A5II, A5 series	MCD ⊘ T3120	
Applicable *2	No.	A5IIE, A5E series	MCD ⊘T3120E	_
dilvei	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1	.3
Momentary Ma	ax. peal	k torque (N·m)	3.8	
Rated current		(A(rms))	4.6	
Max. current (A(o-p))			19.5	
Regenerative brake Without option		No limit Note)2		
frequency (times/i	min) Note)1	DV0P4282	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without brake	0.67	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131072

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

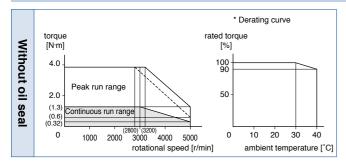
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

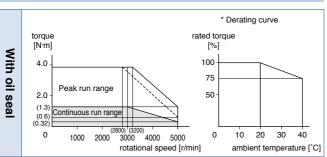
• Permissible load (For details, refer to P.183)

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

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

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

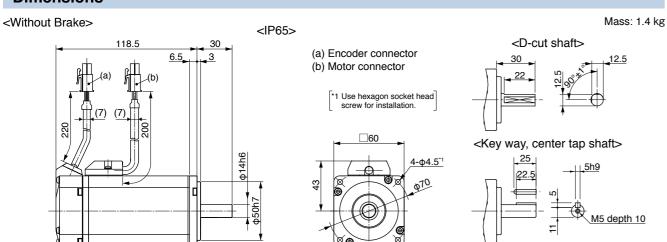




[Unit: mm]

Dimensions

<Cautions>



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

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

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

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

Specifications

			AC200 V		
Matanasadal		IP65		MHMD042G1□	MHMD042S1
Motor model		IP67		-	-
Ammliandala	Model	A5II, A5 series		MBD ⊘ T2510	
Applicable driver *2	No.	A5IIE, A5E series		MBD ⊘T2510E	-
diivei	Fi	ame symb	ool	B-fra	ame
Power supply	/ capacit	y	(kVA)	0.	9
Rated output			(W)	40	00
Rated torque			(N·m)	1.	3
Momentary N	/lax. pea	k torque	(N·m)	3.8	
Rated curren	t	()	A(rms))	2.6	
Max. current		(A(o-p))	11.0	
Regenerative	brake	Without option		No limit Note)2	
frequency (times	s/min) Note)1	DV0P4283		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	5000	
Moment of in	ertia	Without	brake	0.0	67
of rotor (×10	⁴ kg·m²)	With brake		0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
I	Resolution per single turn			1048576	131072

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

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

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

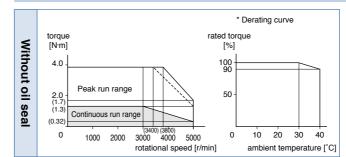
• Permissible load (For details, refer to P.183)

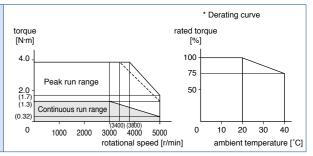
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
assembly	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

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

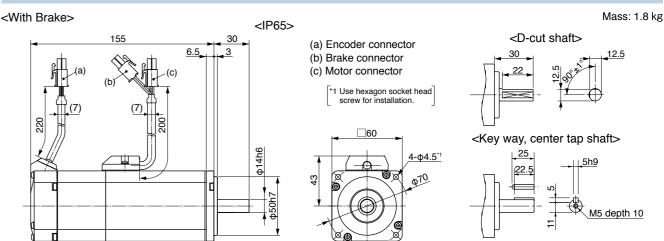
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

<u>e.</u>





Dimensions



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

[Unit: mm]

<a hre

age.>)

			AC2	00 V
		IP65	MHMD082G1□	MHMD082S1
Motor model *1		IP67	-	-
	Model	A5II, A5 series	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_
dilvei	Fr	ame symbol	C-fra	ame
Power supply	capacit	y (kVA)	1.	.3
Rated output		(W)	75	50
Rated torque		(N·m)	2.	.4
Momentary Ma	ax. peal	k torque (N·m)	7.1	
Rated current		(A(rms))	4.0	
Max. current		(A(o-p))	17	'.O
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0P4283	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	1.51	
of rotor (×10 ⁻⁴	kg·m²)	With brake	1.61	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

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

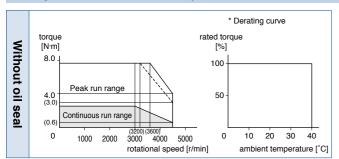
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

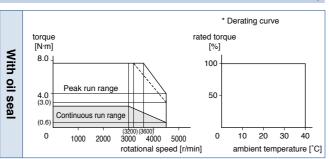
• Permissible load (For details, refer to P.183)

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

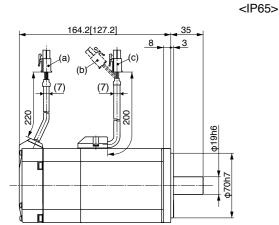
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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





Dimensions



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

*1 Use hexagon socket head screw for installation.

Mass: Without brake/ 2.5 kg With brake/ 3.5 kg <D-cut shaft> <Key way, center tap shaft>

* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

MEMO

				AC1	00 V
Motor model		IP65		-	-
*1		IP67		MSME5AZG1□	MSME5AZS1□
Amaliaahla	Model	A5II, A5 series		MAD ◇T110 5	
Applicable 42	No.	A5IIE, A	5E series	MAD ⊘T1105E	_
anver	Fr	ame sym	bol	A-fra	ame
Power supply	capacit	y	(kVA)	0	.4
Rated output			(W)	5	0
Rated torque			(N·m)	0.16	
Momentary Ma	ax. peal	k torque	(N·m)	0.48	
Rated current		(A(rms))	1.1	
Max. current (A(o-p))			4	.7	
Regenerative b	rake	Without option		No limit Note)2	
frequency (times/r	min) Note)1	DV0P4280		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	t brake	0.025	
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072

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

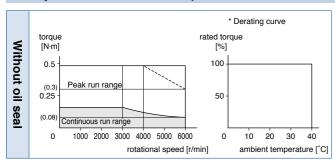
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

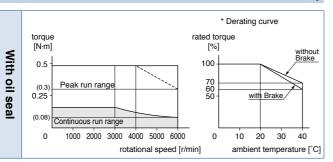
Permissible load (For details, refer to P.183)

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

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

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



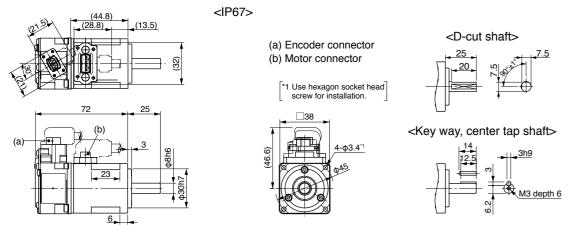


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.31 kg

[Unit: mm]



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

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

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

Specifications

Max. current

Momentary Max. p Rated current

Regenerative brake frequency (times/min) Note)1

Rated rotational speed

Max. rotational speed

of rotor (×10⁻⁴ kg·m²)

Recommended moment of inertia

ratio of the load and the rotor

Rotary encoder specifications

Moment of inertia

			AC2	00 V	Brake specifications (For details, refer to P.183 /This brake will be released when it is energized.)
Motor model *1 IP65 IP67		_	-	(Do not use this for braking the motor in motion.)	
		MSME5AZG1	MSME5AZS1	Static friction torque (N·m) 0.29 or more	
Applicable No.	Model	A5II, A5 series MA		T1505	Engaging time (ms) 35 or less
	No.	A5IIE, A5E series	MAD \diamondsuit T1505E	_	Releasing time (ms) Note)4 20 or less
	Frame symbol		A-fr	ame	Exciting current (DC) (A) 0.3
Power supply	capacit	y (kVA)	0	.5	Releasing voltage (DC) (V) 1 or more
Rated output (W)		50		Exciting voltage (DC) (V) 24±1.2	
Rated torque (N·m)		0.16		Exolung voltage (BO) (V)	
Momentary Max. peak torque (N·m)		k torque (N·m)	0.	48	Permissible load (For details, refer to P.183)

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

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

Torque characteristics (at AC200V of power voltage)

(A(rms))

(A(o-p))

(r/min)

(r/min)

Note)3

Without option

DV0P4280

Without brake

With brake

Resolution per single turn

1.1

4.7

No limit Note)2

No limit Note)2

3000

6000

0.025

0.027

30 times or less

17-bit

Absolute

131072

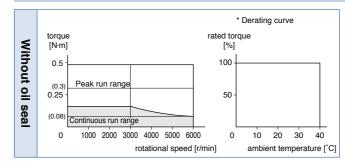
₩ith

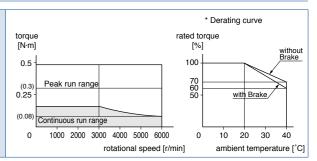
<u>e</u>

20-bit

Incremental

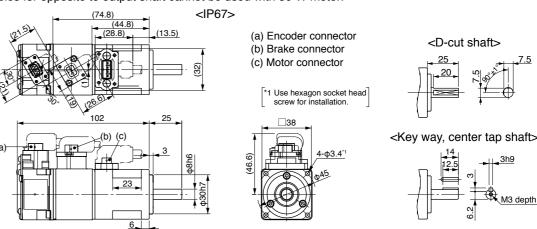
1048576





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

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



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

[Unit: mm]

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

Mass: 0.51 kg

A5 Family

Motor Specifications

Specifications

			AC1	00 V
Mataumaadal	IP65		-	-
Motor model *1		IP67	MSME011G1	MSME011S1
	Model	A5II, A5 series	MAD ⊘ T1107	
Applicable 42	No.	A5IIE, A5E series	MAD ⊘T1107E	_
divei	Fı	ame symbol	A-fra	ame
Power supply	capacit	y (kVA)	0	.4
Rated output		(W)	10	00
Rated torque		(N·m)	0.:	32
Momentary Ma	ax. pea	k torque (N·m)	0.95	
Rated current		(A(rms))	1.6	
Max. current		(A(o-p))	6.9	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/i	min) Note)1	DV0P4280	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	6000	
Moment of ine	rtia	Without brake	0.051	
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn			1048576	131072

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

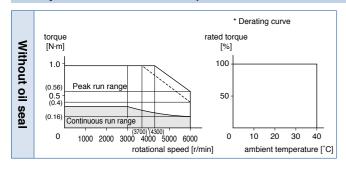
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

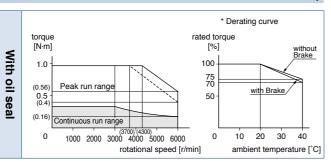
During assembly During operation	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
	Radial load P-direction (N)	68.6
	Thrust load A, B-direction (N)	58.8

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

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



<Cautions>

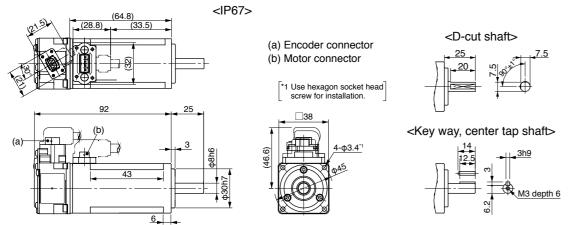


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.46 kg

[Unit: mm]



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

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

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

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

Specifications

			AC2	00 V	
Motor model		IP65	-	-	
*1		IP67	MSME012G1	MSME012S1	
Annlinghla	Model	A5II, A5 series	MAD	T1505	
Applicable driver *2	No.	A5IIE, A5E series	MAD ⊘T1505E	_	
divei	Fı	rame symbol	A-fr	ame	
Power supply	capacit	y (kVA)	0.	.5	
Rated output		(W)	10	00	
Rated torque		(N·m)	0.:	32	
Momentary M	ax. pea	k torque (N·m)	0.95		
Rated current		(A(rms))	1.1		
Max. current		(A(o-p))	4.	.7	
Regenerative b	Regenerative brake		No limit Note)2		
frequency (times/	min) Note)1	DV0P4280	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	6000		
Moment of ine	rtia	Without brake	0.0	51	
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.0	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encode	Rotary encoder specifications Note)5			17-bit Absolute	
Resolution per single turn			1048576	131072	

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

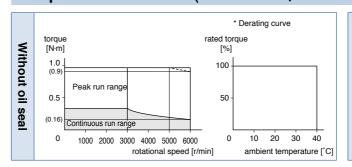
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2
Exciting voltage (DC) (V)	24±1.2

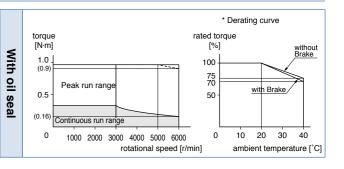
• Permissible load (For details, refer to P.183)

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

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

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

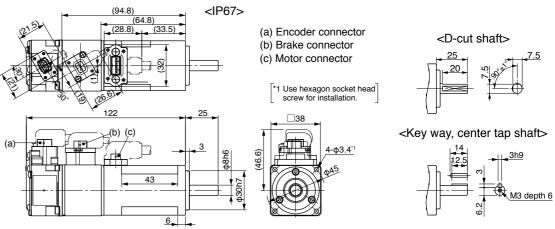




Dimensions < In Case of With Brake, Cable direction to output shaft.>

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

Mass: 0.66 kg



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

[Unit: mm]

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

Motor Specifications

Specifications

			AC1	00 V	
Motor model	IP65		-	-	
*1		IP67		MSME021G1□	MSME021S1
	Model	A5II, A5 series		MBD ⊘T2110	
Applicable driver *2	No.	A5IIE, A5	E series	MBD ⊘T2110E	_
divei	Fr	ame sym	bol	B-fra	ame
Power supply	capacit	y	(kVA)	0.	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.0	64
Momentary Max. peak torque (N·m)			1.91		
Rated current		(,	A(rms))	2.5	
Max. current (A(o-p))			10.6		
Regenerative brake Wi		Without option		No limi	t Note)2
frequency (times/r	min) Note)1	DV0P4283		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.14	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			1048576	131072

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

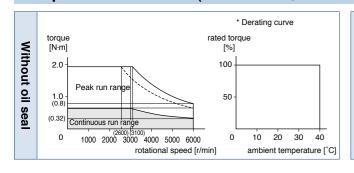
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

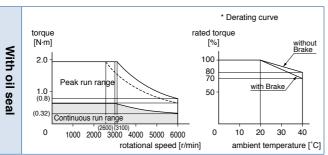
During assembly During operation	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

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

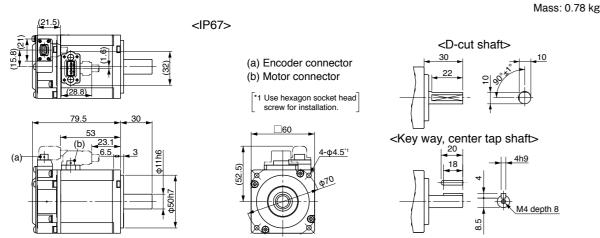
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

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

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

[Unit: mm]

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

Specifications

				AC2	00 V
	-1	IP65		-	-
Motor mod	*1	IP67		MSME022G1□	MSME022S1
	Mode	A5II, A5	series	MAD	T1507
Applicable driver	*2 No.	A5IIE, A	5E series	MAD ⊘T1507E	_
unver	F	rame sym	ibol	A-fra	ame
Power sup	ply capac	ty	(kVA)	0	.5
Rated outp	out		(W)	20	00
Rated torq	ue		(N·m)	0.0	64
Momentary	/ Max. pea	ak torque	(N·m)	1.91	
Rated current (A(rms))			1.5		
Max. current (A(o-p))			6.5		
Regenerati	ve brake	Without	option	No limit Note)2	
frequency (ti	mes/min) Note	DV0P4283		No limit Note)2	
Rated rota	tional spe	ed	(r/min)	3000	
Max. rotati	onal spee	d	(r/min)	6000	
Moment of	inertia	Withou	t brake	0.14	
of rotor (x1	0 ⁻⁴ kg·m ²	With I	orake	0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			ıle turn	1048576	131072

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

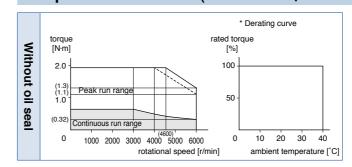
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

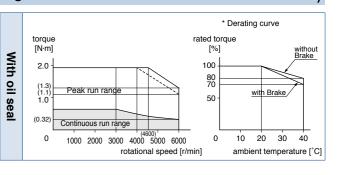
During assembly During operation	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

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

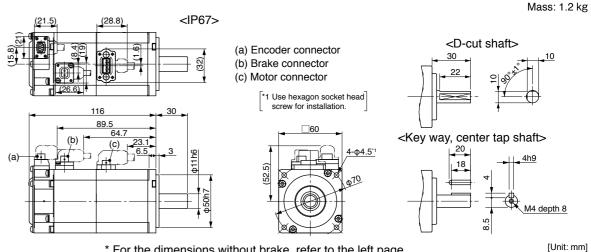
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

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

				AC100 V		
Matawasadal		IP65		-	-	
Motor model *1		IP67		MSME041G1□	MSME041S1	
	Model	A5I , A5 s	eries	MCD ⊘ T3120		
Applicable driver *2	No.	A5IIE, A5E series		MCD ⊘T3120E	_	
unven	Fı	ame symb	ol	C-fr	ame	
Power supply	capacit	у	(kVA)	0	.9	
Rated output			(W)	40	00	
Rated torque			(N·m)	1.	.3	
Momentary M	ax. pea	k torque	(N·m)	3.8		
Rated current		(A	(rms))	4.6		
Max. current (A(o-p))			19.5			
Regenerative I	orake	Without o	option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4	282	No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	6000		
Moment of ine	ertia	Without I	brake	0.26		
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
F	Resolutio	n per single	e turn	1048576	131072	

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

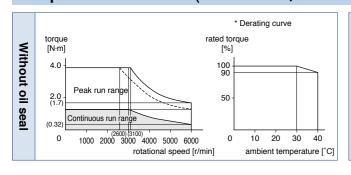
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

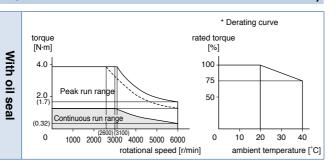
Permissible load (For details, refer to P.183)

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

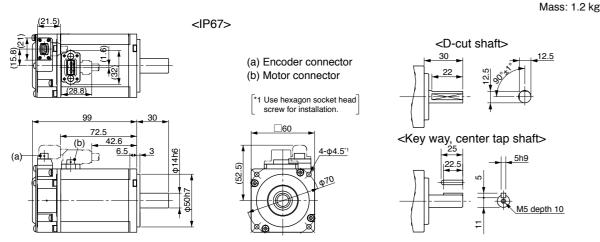
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





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



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

[Unit: mm]

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

Specifications

			AC200 V		
Mataumaad	-1	IP65		-	-
Motor mod	el *1	IP67		MSME042G1□	MSME042S1
	Model	A5II, A5 series		MBD ⊘ T2510	
Applicable driver	*2 No.	A5IIE, A5E series		MBD ⊘T2510E	-
unvei	Fr	ame sym	bol	B-fra	ame
Power supp	oly capacit	y	(kVA)	0	.9
Rated outp	ut		(W)	40	00
Rated torqu	ıe		(N·m)	1.	.3
Momentary	Max. peal	k torque	(N·m)	3.8	
Rated current (A(rms))			2.4		
Max. curre	nt	((A(o-p))	10).2
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tir	mes/min) Note)1	DV0P4283		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed		(r/min)	6000	
Moment of	inertia	Without	brake	0.26	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

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

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

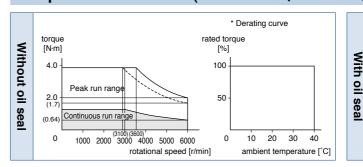
,
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

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

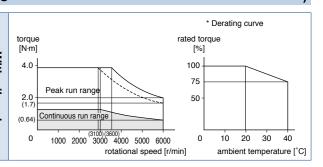
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
documbry	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

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

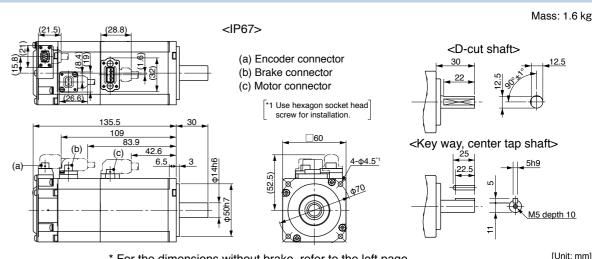
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<Cautions>



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



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

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

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			AC200 V		
Matanasadal		IP65		-	-
Motor model *1		IP67		MSME082G1□	MSME082S1
	Model	A5II, A5 series		MCD ⊘T3520	
Applicable driver *2	No.	A5IIE, A5E series		MCD ♦T3520E	_
unver	Fr	ame sym	bol	C-fr	ame
Power supply	capacit	y	(kVA)	1.	.3
Rated output			(W)	75	50
Rated torque			(N·m)	2	.4
Momentary Ma	ax. peal	k torque	(N·m)	7.1	
Rated current		(A(rms))	4.1	
Max. current (A(o-p))			17.4		
Regenerative brake frequency (times/min) Note)1 DV0P4283		option	No limit Note)2		
		DV0P4283		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	6000	
Moment of ine	rtia	Without	brake	0.87	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	le turn	1048576	131072

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

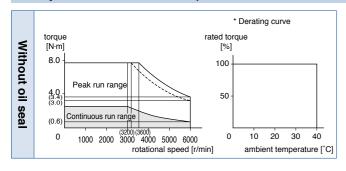
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

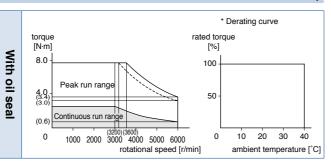
Permissible load (For details, refer to P.183)

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

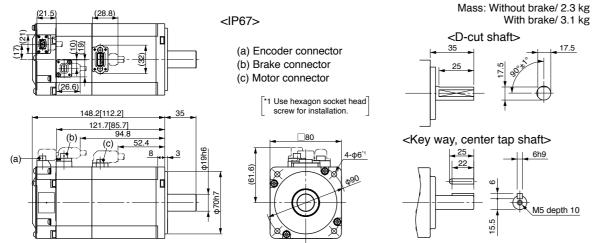
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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





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



* Figures in [] represent the dimensions without brake.

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[Unit: mm]

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

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

Specifications

				AC2	00 V
Matar mada		IP65		MSME102GC□	MSME102SC□
Motor model	*	IP67		MSME102G1□	MSME102S1
	Model	Model A5II, A5 series		MDD<	T5540
Applicable driver *	No.	A5IIE, A5E series		MDD ⊘T5540E	_
diivei	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.8
Rated outpu	ıt		(W)	10	00
Rated torqu	е		(N·m)	3.	18
Momentary	Max. peal	k torque	(N·m)	9.55	
Rated curre	nt	(A(rms))	6.6	
Max. current (A(o-p))			2	8	
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (tim	es/min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without brake		2.03	
of rotor (×10 ⁻⁴ kg·m ²) With b		orake	2.35		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072

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

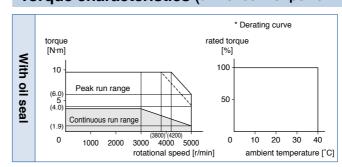
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

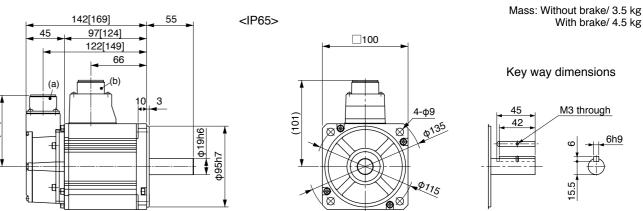
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

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

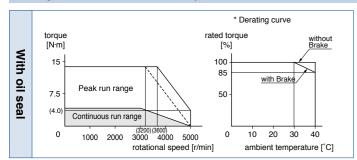
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

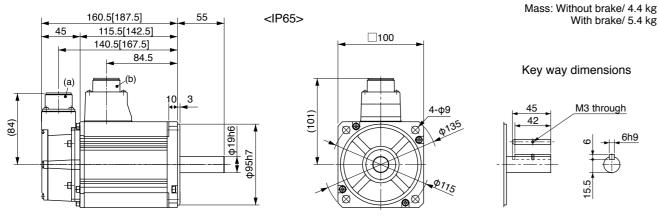
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

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

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

Specifications

			AC2	00 V	
N 4 - 4 - · · · · · · · · · · · · · · · · · ·		IP65		MSME202GC□	MSME202SC
Motor mode *	•	IP67		MSME202G1□	MSME202S1
A	Model	Model A5II, A5 series		MED ◇T7364	
Applicable driver *	No.	A5IIE, A	5E series	MED ⊘T7364E	_
unven	Fr	ame sym	bol	E-fra	ame
Power supp	ly capacit	у	(kVA)	3	.3
Rated outpu	ıt		(W)	20	00
Rated torqu	е		(N·m)	6.:	37
Momentary	Max. peal	k torque	(N·m)	19.1	
Rated curre	nt	(A(rms))	11.3	
Max. current (A(o-p))		4	8		
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0P4285		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	5000	
Moment of i	nertia	Without	brake	3.68	
of rotor (×10 ⁻⁴ kg·m ²)		With 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		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072

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

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

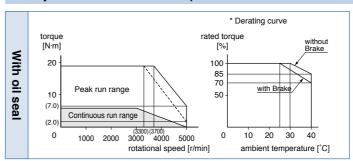
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

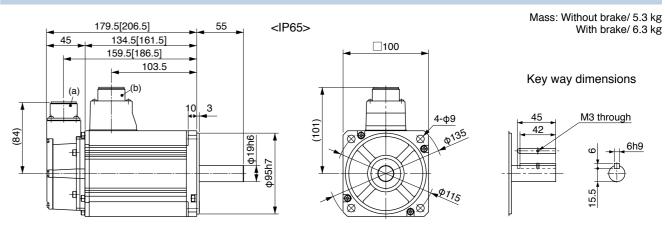
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
-		Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC2	00 V
Matanasadal		IP65	MSME302GC□	MSME302SC□
Motor model		IP67	MSME302G1□	MSME302S1
A munica a la la	Model	A5II, A5 series	MFD \diamondsuit TA390	
Applicable *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	9.	55
Momentary Ma	ax. peal	k torque (N·m)	28.6	
Rated current		(A(rms))	18.1	
Max. current		(A(o-p))	77	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without brake	6.50	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

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

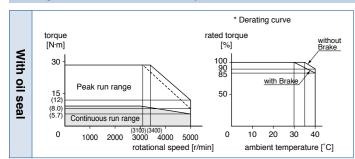
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

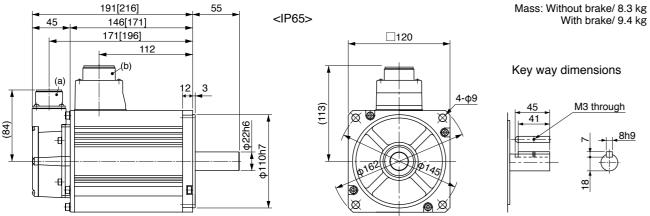
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

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



Dimensions

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



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

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[Unit: mm]

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

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

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

Specifications

			AC2	00 V	
		IP65		MSME402GC□	MSME402SC
Motor mode	:1	IP67		MSME402G1□	MSME402S1
	Model	Model A5II, A5 serie		MFD♦	TB3A2
Applicable driver *	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
unver	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacity	y	(kVA)	6.	0
Rated outpu	ıt		(W)	40	00
Rated torqu	е		(N·m)	12	7
Momentary	Max. peal	k torque	(N·m)	38.2	
Rated curre	nt	(.	A(rms))	19.6	
Max. curren	t	((A(o-p))	8	3
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	4500	
Moment of i	nertia	Without brake		12.9	
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Not		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per			le turn	1048576	131072

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

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

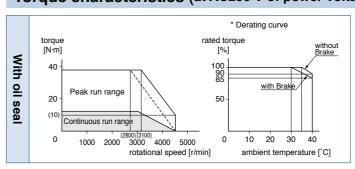
,	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

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

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

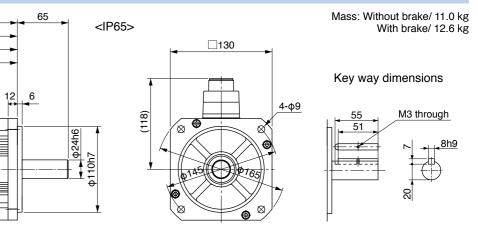


209[237]

189[217]

164[192]

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



(a) Encoder connector

(84)

Dimensions

45

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

[Unit: mm]

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

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nformation

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

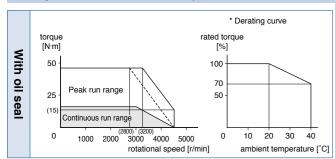
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

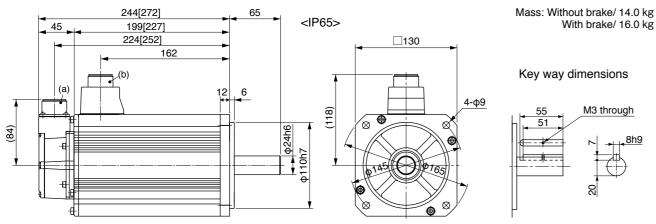
- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 200 V MDME 1.0 kW [Middle inertia, Middle capacity]

Specifications

			AC2	00 V	
Matanaaala		IP65		MDME102GC	MDME102SC
Motor mode *	:1	IP67		MDME102G1□	MDME102S1
A	Model	A5 I I, A5	series	MDD<	T3530
Applicable driver *	No.	A5IIE, A	5E series	MDD ⊘T3530E	-
unven	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.8
Rated outpu	ut		(W)	10	00
Rated torqu	е		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated curre	nt	(A(rms))	5.7	
Max. current (A(o-p))			24		
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (tim	es/min) Note)1	DV0P4284		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	4.60	
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072

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

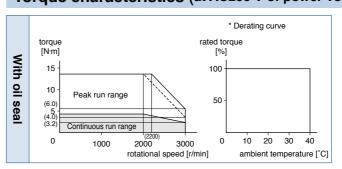
1	,
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

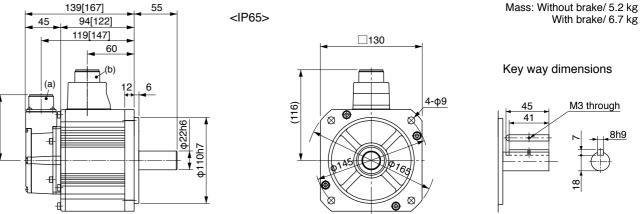
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



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



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

[Unit: mm]

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

With brake/ 6.7 kg

Key way dimensions

			AC200 V		
		MDME152GC	MDME152SC		
Motor model *1		IP67		MDME152G1	MDME152S1
	Model	A5II, A5 series		MDD<	T5540
Applicable driver *2	No.	A5IIE, A5E series		MDD ♦ T5540E	-
unver	Fr	ame sym	bol	D-fr	ame
Power supply capacity (kVA)			2	.3	
Rated output			(W)	15	00
Rated torque			(N·m)	7.16	
Momentary Ma	ax. peal	k torque	(N·m)	21.5	
Rated current		(A(rms))	9.4	
Max. current		((A(o-p))	40	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/r	min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	6.70	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	n per sing	le turn	1048576	131072

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

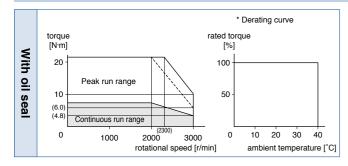
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

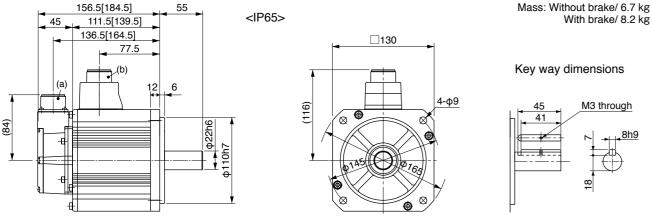
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

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[Unit: mm]

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

Specifications

				AC2	00 V
M-4		IP65		MDME202GC	MDME202SC
Motor mode	ÐI ⊭1	IP67		MDME202G1□	MDME202S1
	Model	A5II, A5	series	MED<	T7364
Applicable driver	No.	A5IE, A	5E series	MED ⊘T7364E	_
unven	F	rame sym	bol	E-fra	ame
Power supp	oly capaci	ty	(kVA)	3	.3
Rated outp	ut		(W)	20	00
Rated torqu	ie		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	ent	(A(rms))	11.5	
Max. current (A(o-p))			4	9	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)	DV0P4285		No limit Note)2	
Rated rotat	ional spec	ed	(r/min)	2000	
Max. rotation	nal speed	t	(r/min)	3000	
Moment of	inertia	Without	brake	8.72	
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note		Note)5	20-bit Incremental	17-bit Absolute	
		on per sing	le turn	1048576	131072

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

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

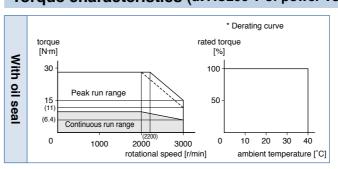
(20 not doo time to: Draining the motor in motorin)					
Static friction torque (N·m)	13.7 or more				
Engaging time (ms)	100 or less				
Releasing time (ms) Note)4	50 or less				
Exciting current (DC) (A)	0.79±10 %				
Releasing voltage (DC) (V)	2 or more				
Exciting voltage (DC) (V)	24±2.4				

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

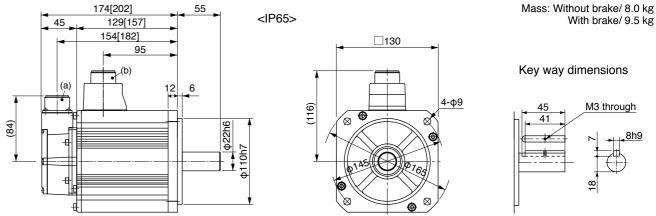
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



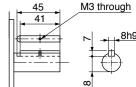
Dimensions (For IP67 motor, refer to P.138.)



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

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

With brake/ 9.5 kg



[Unit: mm]

A5 Family

			AC200 V	
Matanasadal		IP65	MDME302GC□	MDME302SC□
Motor model *1		IP67	MDME302G1□	MDME302S1
Amaliaalala	Model	A5II, A5 series	MFD♦	TA390
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_
unvei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	.3
Momentary Ma	ax. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	17.4	
Max. current	Max. current (A(o-p))		74	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/n	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	12.9	
of rotor (×10 ⁻⁴ kg·m²) With brake		With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
Re	esolutio	n per single turn	1048576	131072

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

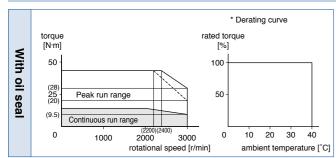
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

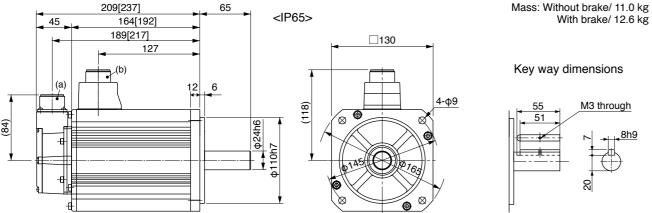
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

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

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

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

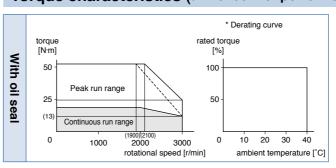
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4
•

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

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

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

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



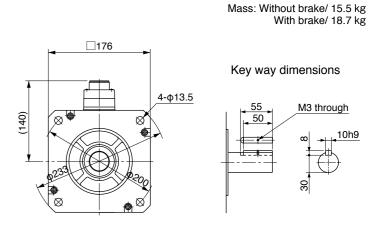
Dimensions

178[207]

133[162]

158[187]

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



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

[Unit: mm]

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

<IP65>

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			AC2	00 V	
		IP65		MDME502GC	MDME502SC
Motor model *1		IP67		MDME502G1□	MDME502S1
A 11 11	Model	A5II, A5 series		MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5E series		MFD ⊘TB3A2E	-
unver	Fr	ame syml	bol	F-fra	ame
Power supply	capacit	y	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	23.9	
Momentary Max. peak torque (N·m)			71.6		
Rated current		(/	A(rms))	25.9	
Max. current		(A(o-p))	110	
Regenerative b	rake	Without	option	120	
frequency (times/r	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	48.0	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
R	esolutio	n per sing	le turn	1048576	131072

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

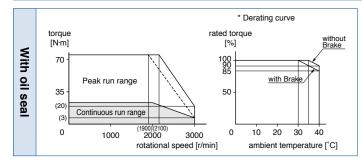
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

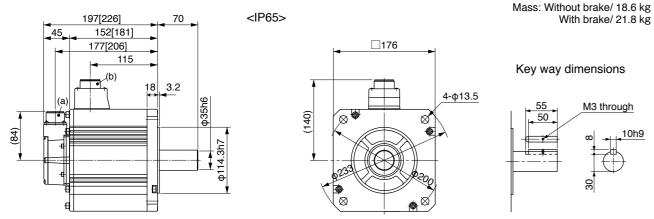
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
M -4		IP65		-	-
Motor mode	ÐI ⊧1	IP67		MDME752G1□	MDME752S1
	Model	A5II, A5	series	MGD♦	TC3B4
Applicable driver	No.	A5IIE, A	5E series	-	-
unven	Fi	ame sym	bol	G-fr	ame
Power supp	oly capacit	у	(kVA)	1	1
Rated outpo	ut		(W)	75	00
Rated torqu	ie		(N·m)	47	'.8
Momentary	Max. pea	k torque	(N·m)	119	
Rated curre	ent	(A(rms))	44.0	
Max. currer	nt	((A(o-p))	16	35
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0P4285×3		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	1()1
of rotor (×1	0 ⁻⁴ kg·m ²)	With b	rake	1()7
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolutio		n per sing	le turn	1048576	131072

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

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

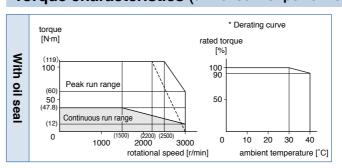
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

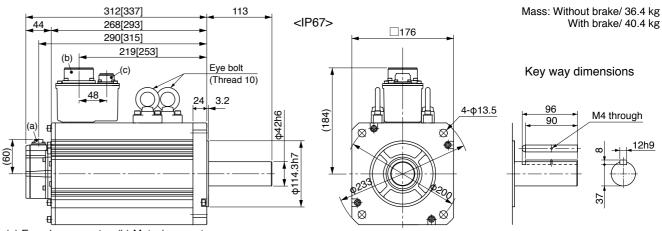
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

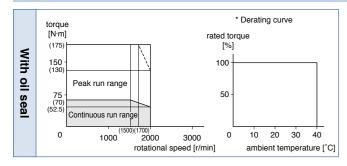
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

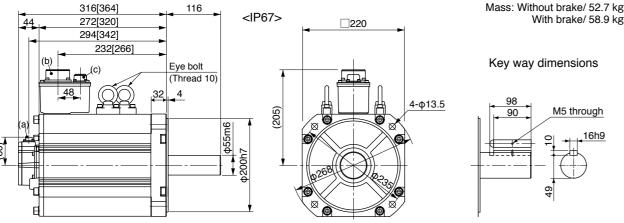
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

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

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



Dimensions



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

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[Unit: mm]

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

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

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

Specifications

			AC2	00 V	
Matau maa dal		IP65		-	-
Motor model		IP67		MDMEC52G1□	MDMEC52S1
A I' I. I .	Model	A5 I I, A5	series	MHD	TC3B4
Applicable driver *2	No.	A5IIE, A	5E series	-	-
unven	Fr	ame sym	bol	H-fr	ame
Power supply	capacit	y	(kVA)	2	2
Rated output			(W)	150	000
Rated torque			(N·m)	95	5.5
Momentary N	1ax. peal	k torque	(N·m)	224	
Rated curren	t	(A(rms))	66.1	
Max. current (A(o-p))			23	236	
Regenerative	brake	Without	option	No limit Note)2	
frequency (times	s/min) Note)1	DV0PM20058		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	1500	
Max. rotation	al speed		(r/min)	2000	
Moment of in	ertia	Without	brake	302	
of rotor (×10	⁴ kg·m²)	With brake		311	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
F	Resolution per single turn			1048576	131072

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

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

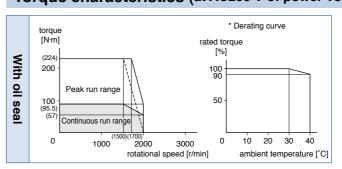
or more
0 or less
0 or less
08±10 %
or more
24±2.4

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

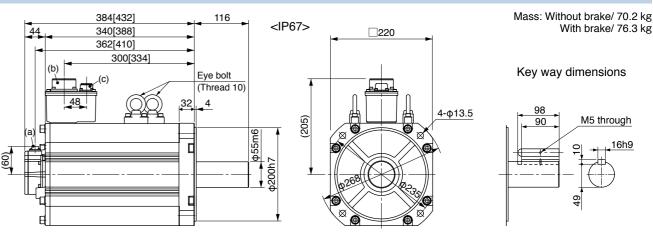
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
docombry	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



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

[Unit: mm]

				AC2	00 V
Matanasadal		IP65		-	-
Motor model *1		IP67		MFME152G1□	MFME152S1
A U la la	Model	A5II, A5	series	MDD<	T5540
Applicable driver *2	No.	A5IIE, A	5E series	MDD ♦ T5540E	_
unver	Fr	ame sym	ıbol	D-fr	ame
Power supply	capacit	у	(kVA)	2	.3
Rated output			(W)	15	00
Rated torque			(N·m)	7.	16
Momentary Max. peak torque (N·m)			21.5		
Rated current (A(rms))			7.5		
Max. current (A(o-p))			32		
Regenerative brake Without option		100			
frequency (times/min) Note)1 DV0P4284		4284	No limit Note)2		
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	t brake	18.2	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

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

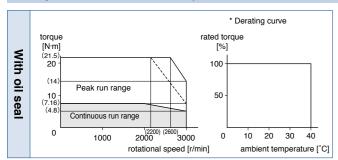
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

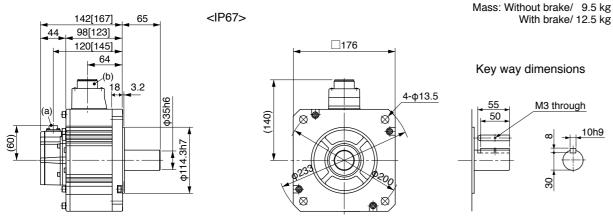
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



Dimensions



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

[Unit: mm]

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

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

Motor Specifications

Specifications

			AC2	00 V	
M -4		IP65		-	-
Motor mode	el ⊧1	IP67		MFME252G1□	MFME252S1
Annlinable	Model	A5II, A5	series	MED<	T7364
Applicable driver *	No.	A5IIE, A	5E series	MED ⊘T7364E	_
unvoi	F	rame sym	bol	E-fra	ame
Power supp	oly capaci	ty	(kVA)	3	.8
Rated outpo	ut		(W)	25	00
Rated torqu	ie		(N·m)	11	.9
Momentary	Max. pea	k torque	(N·m)	30.4	
Rated curre	ent	(A(rms))	13.4	
Max. current (A(o-p))			57		
Regenerativ	e brake	Without	option	75	
frequency (tim	nes/min) Note)	DV0P4285		No limit Note)2	
Rated rotati	ional spec	ed	(r/min)	2000	
Max. rotation	nal speed	t	(r/min)	3000	
Moment of	inertia	Without	t brake	35.8	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	45.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution	n per sind	ıle turn	1048576	131072

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

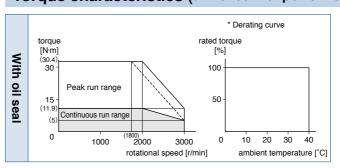
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

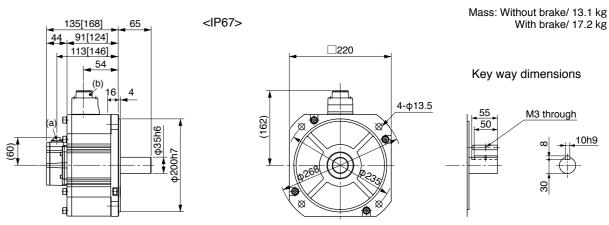
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

[Unit: mm]

			AC2	00 V		
Matanasadal		IP65	-	-		
Motor model *1		IP67	MFME452G1□	MFME452S1		
	Model	A5II, A5 series	MFD♦	TB3A2		
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TB3A2E	_		
unver	Fr	ame symbol	F-fra	ame		
Power supply	capacit	y (kVA)	6.	.8		
Rated output		(W)	45	00		
Rated torque		(N·m)	21	.5		
Momentary Max. peak torque (N·m)			54.9			
Rated current (A(rms))			24.7			
Max. current (A(o-p))			10)5		
Regenerative b	rake	Without option	67			
frequency (times/i	min) Note)1	DV0P4285×2	375			
Rated rotation	al spee	d (r/min)	2000			
Max. rotationa	l speed	(r/min)	3000			
Moment of ine	rtia	Without brake	63.1			
of rotor ($\times 10^{-4}$	kg·m²)	With brake	70.9			
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
R	Resolution per single turn			131072		

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

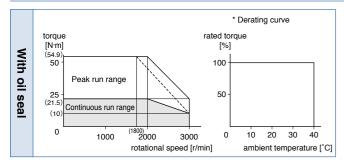
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

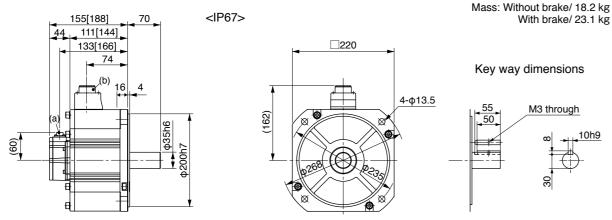
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

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

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



Dimensions



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

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[Unit: mm]

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

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

Motor Specifications

A5 Family

Specifications

				AC2	00 V
		IP65		MGME092GC□	MGME092SC
Motor model *1		IP67		MGME092G1	MGME092S1
A 1: 11	Model	A5II, A5	series	MDD<	T5540
Applicable driver *2	No.	A5IIE, A	5E series	MDD \diamondsuit T5540E	-
unven	Fi	rame sym	bol	D-fr	ame
Power supply	y capacit	у	(kVA)	1.	.8
Rated output	:		(W)	90	00
Rated torque			(N·m)	8.	59
Momentary N	Лах. реа	k torque	(N·m)	19	0.3
Rated current (A(rms))		7.6			
Max. current (A(o-p))		2	4		
Regenerative	brake	Without	t option No limit Note)2		t Note)2
frequency (time		DV0P4284		No limit Note)2	
Rated rotational speed (r/min)		1000			
Max. rotation	al speed		(r/min)	2000	
Moment of in	ertia	Without	brake	6.70	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	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		
Resolution per single turn		le turn	1048576	131072	

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

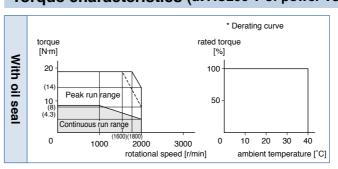
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

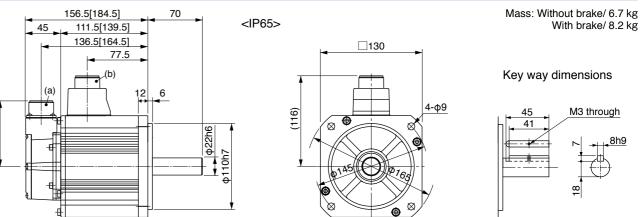
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC2	00 V	
Mataumandal	IP65		MGME202GC□	MGME202SC□	
Motor model *1		IP67	MGME202G1□	MGME202S1	
Ammliaabla	Model	A5II, A5 series	MFD ⊘TA390		
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TA390E	-	
unver	Fr	ame symbol	F-fr	ame	
Power supply	capacit	y (kVA)	3	.8	
Rated output		(W)	20	00	
Rated torque		(N·m)	19	19.1	
Momentary Ma	Momentary Max. peak torque (N·m)		47.7		
Rated current (A(rms))		17.0			
Max. current (A(o-p))		60			
Regenerative brake Without option		No lim	t Note)2		
frequency (times/min) Note)1 DV0P4285×2		DV0P4285×2	No limit Note)2		
Rated rotation	Rated rotational speed (r/min)		1000		
Max. rotationa	l speed	(r/min)	2000		
Moment of ine	rtia	Without brake	30.3		
of rotor ($\times 10^{-4}$	of rotor (×10 ⁻⁴ kg·m²) With brake		35.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	Resolution per single turn			131072	

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

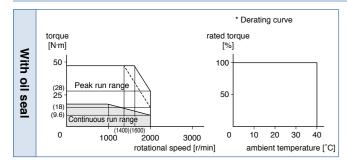
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

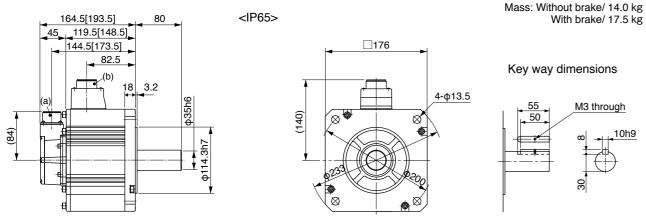
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver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

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



Dimensions

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



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

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[Unit: mm]

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

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

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

Specifications

				AC2	00 V
		IP65		MGME302GC□	MGME302SC
Motor mode	el *1	IP67		MGME302G1□	MGME302S1
	Model	A5Ⅱ, A5	series	MFD ⊘TB3A 2	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-
ulivei	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	у	(kVA)	4.	.5
Rated outp	ut		(W)	30	00
Rated torqu	ıe		(N·m)	28	3.7
Momentary	Max. pea	k torque	(N·m)	71.7	
Rated current (A(rms))			22.6		
Max. current (A(o-p))		8	0		
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tir	mes/min) Note)1	DV0P4	DV0P4285×2 No limit Note)2		t Note)2
Rated rotat	ional spee	d	(r/min)	1000	
Max. rotation	onal speed	l	(r/min)	2000	
Moment of	inertia	Without	brake	48.4	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	53.7	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sina	le turn	1048576	131072

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

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

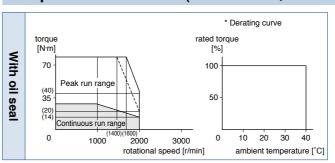
,
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

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

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

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



210.5[239.5]

165.5[194.5]

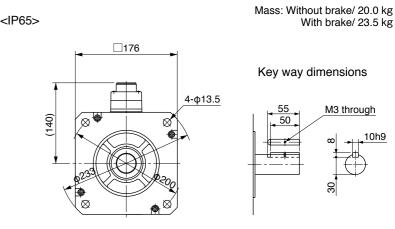
128.5

3.2

190.5[219.5]

Dimensions

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



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

[Unit: mm]

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

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

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

1

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

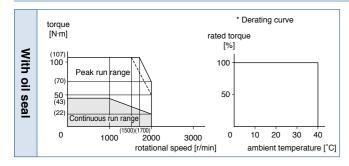
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

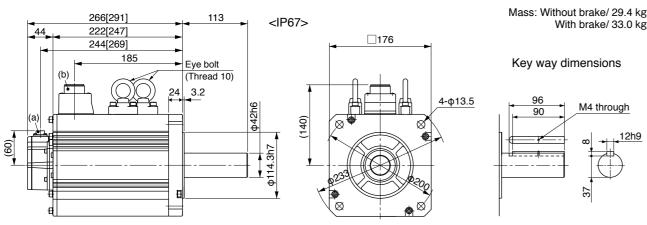
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

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[Unit: mm]

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

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

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

Specifications

				AC2	00 V	
		IP65		-	-	
Motor mod	*1		IP67		MGME602G1□	MGME602S1
A P 11		Model	A5 I I, A5	series	MGD◇	TC3B4
Applicable driver	*2	No.	A5IIE, A5	E series	_	_
un voi		Fr	ame sym	bol	G-fr	ame
Power sup	ply (capacity	y	(kVA)	9	.0
Rated outp	out			(W)	60	00
Rated torq	ue			(N·m)	57	'.3
Momentary	у Ма	ax. peal	k torque	(N·m)	143	
Rated curr	ent		(,	A(rms))	38.8	
Max. curre	nt		((A(o-p))	14	19
Regenerati	ve b	rake	Without	option	No limi	t Note)2
frequency (ti	imes/n	nin) Note)1	DV0P4285×4		No limit Note)2	
Rated rota	tion	al spee	d	(r/min)	1000	
Max. rotati	ona	speed		(r/min)	2000	
Moment of	ine	rtia	Without	brake	101	
of rotor (×1	0-4	kg·m²)	With b	rake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

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

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

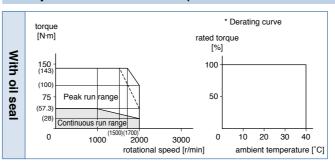
,
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

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

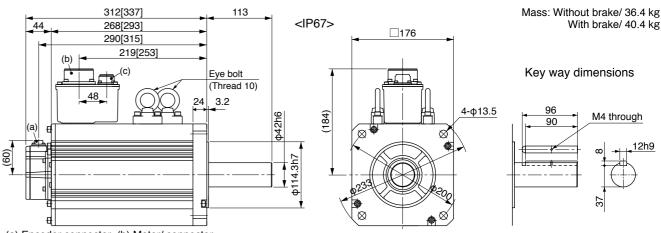
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1764
	Thrust load A, B-direction (N)	588

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

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



Dimensions



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

[Unit: mm]

				AC2	00 V
		IP65		MHME102GC	MHME102SC
Motor model *1		IP67		MHME102G1□	MHME102S1
A U la la	Model	A5II, A5 series		MDD ⇔ T3530	
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T3530E	_
anver	Fr	ame sym	bol	D-fr	ame
Power supply	capacit	y	(kVA)	1.	.8
Rated output			(W)	10	00
Rated torque			(N·m)	4.77	
Momentary Ma	ax. peal	k torque	(N·m)	14.3	
Rated current		(A(rms))	5.7	
Max. current (A(o-p))			24		
Regenerative b	rake	Without	option	83	
frequency (times/r	nin) Note)1	DV0P	4284	No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	t brake	24.7	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
Re	esolutio	n per sing	le turn	1048576	131072

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

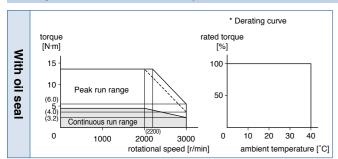
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

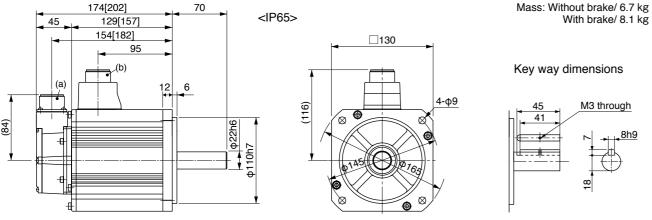
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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



Dimensions

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



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

[Unit: mm]

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

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

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

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

Motor Specifications

A5 Family

Specifications

				AC2	00 V
Motor mad		IP65		MHME152GC	MHME152SC
Motor mode	}I ⊧1	IP67		MHME152G1	MHME152S1
A L' l- l -	Model	A5II, A5	series	MDD<	T5540
Applicable driver	No.	A5IIE, A	5E series	MDD ⊘T5540E	-
unvoi	Fi	rame sym	bol	D-fr	ame
Power supp	ly capacit	у	(kVA)	2	.3
Rated outpo	ut		(W)	15	00
Rated torqu	ie		(N·m)	7.	16
Momentary	Max. pea	k torque	(N·m)	21.5	
Rated curre	ent	(A(rms))	9.4	
Max. currer	nt		(A(o-p))	4	0
Regenerativ	e brake	Without option		22	
frequency (tim	nes/min) Note)1	DV0P4284		130	
Rated rotati	onal spee	d	(r/min)	2000	
Max. rotation	nal speed	l	(r/min)	3000	
Moment of	inertia	Without	brake	37.1	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

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

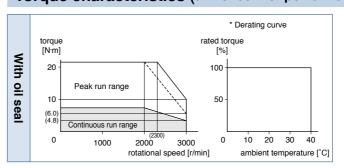
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

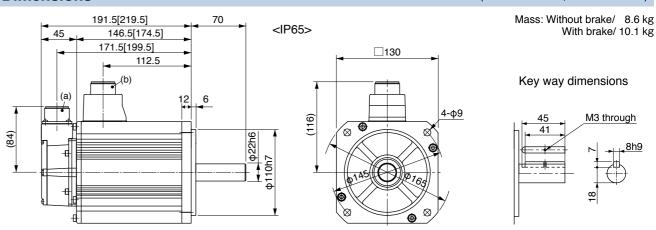
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
-		Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

				00 V
		MHME202GC□	MHME202SC	
Motor model *1		IP67	MHME202G1□	MHME202S1
Amaliaabla	Model	A5II, A5 series	MED<	T7364
Applicable driver *2	No.	A5IIE, A5E series	MED ⊘T7364E	_
anver	Fr	ame symbol	E-fr	ame
Power supply	capacit	y (kVA)	3	.3
Rated output		(W)	20	00
Rated torque		(N·m)	9.	55
Momentary Ma	ax. peal	k torque (N·m)	28.6	
Rated current		(A(rms))	11.1	
Max. current (A(o-p))		47		
Regenerative brake Without option		Without option	45	
frequency (times/r	min) Note)1	DV0P4285	14	12
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	57.8	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

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

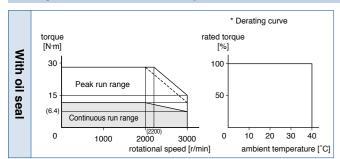
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

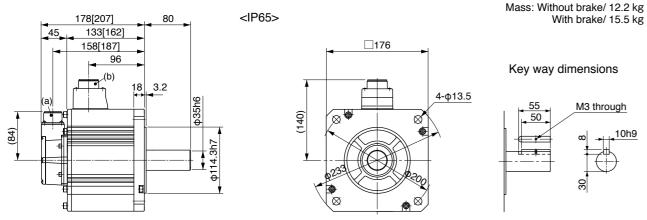
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

					AC2	00 V
Matanasadal		IP65		MHME302GC□	MHME302SC	
Motor mode	₽I *1		IP67		MHME302G1□	MHME302S1
A I' l. l .		Model	A5 I I, A5	series	MFD◇	TA390
Applicable driver	*2	No.	A5IIE, A	5E series	MFD ⊘TA390E	-
unven		Fr	ame sym	bol	F-fra	ame
Power supp	oly (capacit	у	(kVA)	4.	.5
Rated outp	ut			(W)	30	00
Rated torqu	ıe			(N·m)	14	.3
Momentary	Ма	ax. peal	k torque	(N·m)	43.0	
Rated curre	ent		(A(rms))	16.0	
Max. currer	nt			(A(o-p))	6	8
Regenerativ	/e b	rake	Without	option	19	
frequency (tin	nes/n	nin) Note)1	DV0P4285×2		142	
Rated rotat	iona	al spee	d	(r/min)	20	00
Max. rotation	ona	speed		(r/min)	3000	
Moment of	ine	rtia	Without	brake	90).5
of rotor (×1	0-4	kg·m²)	With b	orake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per si			n per sino	le turn	1048576	131072

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

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

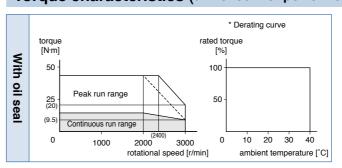
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

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

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



3.2

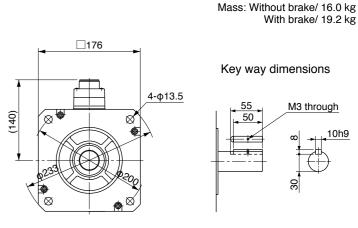
Dimensions

197[226]

177[206]

152[181]

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



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

[Unit: mm]

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

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

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

<IP65>

			AC2	00 V	
IP				MHME402GC	MHME402SC
Motor model		IP67		MHME402G1	MHME402S1
A Un a la la	Model	Model A5II, A5 series		MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
unver	Fr	ame sym	ıbol	F-fra	ame
Power supply	capacit	y	(kVA)	6.	.0
Rated output			(W)	40	00
Rated torque			(N·m)	19).1
Momentary M	ax. peal	k torque	(N·m)	57.3	
Rated current		((A(rms))	21.0	
Max. current (A(o-p))			(A(o-p))	8	9
Regenerative	orake	Without option		17	
frequency (times	min) Note)1	DV0P4	285×2	12	25
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotationa	al speed		(r/min)	3000	
Moment of ine	ertia	Without	t brake	112	
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

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

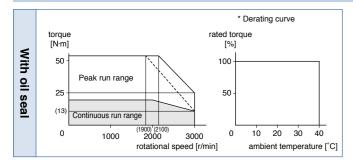
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

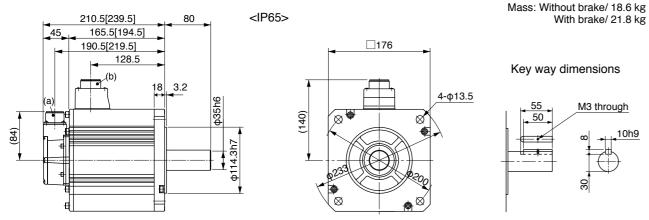
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC2	00 V
		IP65		MHME502GC	MHME502SC
Motor mode	el :1	IP67		MHME502G1□	MHME502S1
	Mode	A5II, A5	series	MFD♦	TB3A2
Applicable driver *	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-
unven	F	rame sym	ibol	F-fra	ame
Power supp	ly capaci	ty	(kVA)	7.	.5
Rated outpu	ut		(W)	50	00
Rated torqu	ie		(N·m)	23	3.9
Momentary	Max. pea	ak torque	(N·m)	71.6	
Rated curre	ent	((A(rms))	25.9	
Max. current (A(o-p))			11	10	
Regenerativ	e brake	Without	option	1	0
frequency (tim		DV0P4285×2		76	
Rated rotati	onal spe	ed	(r/min)	2000	
Max. rotatio	nal spee	d	(r/min)	3000	
Moment of i	inertia	Without	t brake	162	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	16	64
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn				1048576	131072

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

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

A5 Family

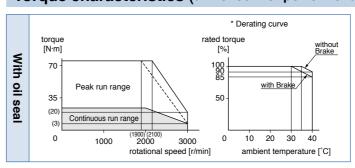
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

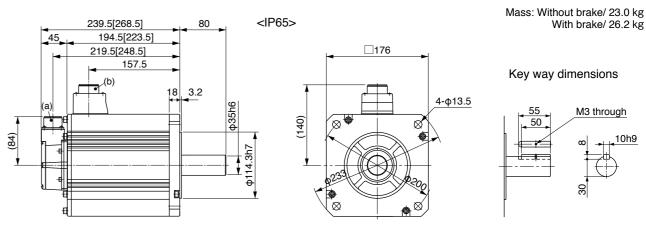
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

				AC2	00 V
Matanasadal		IP65		-	-
Motor model *1		IP67		MHME752G1□	MHME752S1□
	Model	A5II, A5	series	MGD♦	TC3B4
Applicable driver *2	No.	A5IIE, A	5E series	_	_
divei	Fr	ame sym	bol	G-fr	ame
Power supply	capacit	y	(kVA)	1	1
Rated output			(W)	75	00
Rated torque			(N·m)	47.8	
Momentary Ma	ax. peal	k torque	(N·m)	119	
Rated current		(A(rms))	44.0	
Max. current (A(o-p))			16	35	
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0P4285×4		No limit Note)2	
Rated rotation	al spee	d	(r/min)	1500	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	273	
of rotor (×10 ⁻⁴ kg·m²) With brake			orake	279	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per sing	le turn	1048576	131072

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

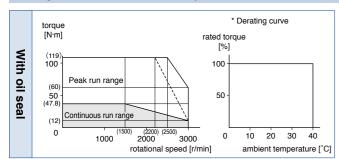
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

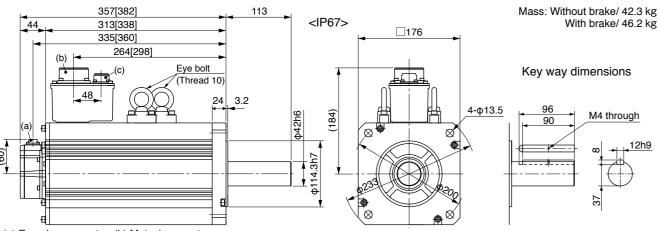
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

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

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

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

Motor Specificat

Specifications

			AC4	00 V		
		IP65		MSME084GC□	MSME084SC	
Motor mode	el ⊧1	IP67		MSME084G1□	MSME084S1	
	Mode	A5II, A5	series	MDD<	T2412	
Applicable driver	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-	
unver	F	rame sym	bol	D-fr	ame	
Power supp	oly capaci	ty	(kVA)	1.	.6	
Rated outpo	ut		(W)	75	50	
Rated torqu	ie		(N·m)	2.:	39	
Momentary	Max. pea	ak torque	(N·m)	7.	7.16	
Rated current (A(rms))			2.4			
Max. currer	nt		(A(o-p))	1	0	
Regenerativ	e brake	Without	option	No limit Note)2		
frequency (tin	nes/min) Note	DV0PM	120048	No limit Note)2		
Rated rotat	ional spe	ed	(r/min)	3000		
Max. rotation	nal spee	d	(r/min)	5000		
Moment of	inertia	Without	brake	1.61		
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	1.93		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn		le turn	1048576	131072		

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

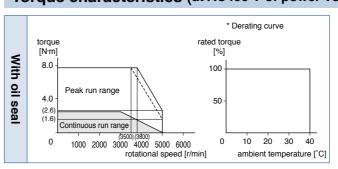
2.5 or more
50 or less
15 or less
0.70±10 %
2 or more
24±2.4

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

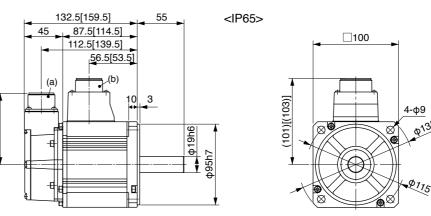
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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

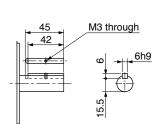


Dimensions (For IP67 motor, refer to P.137.)



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

Key way dimensions



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

[Unit: mm]

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

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

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

E Se

Inform

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

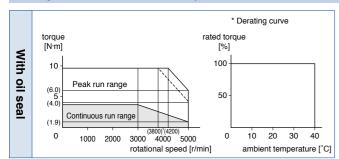
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

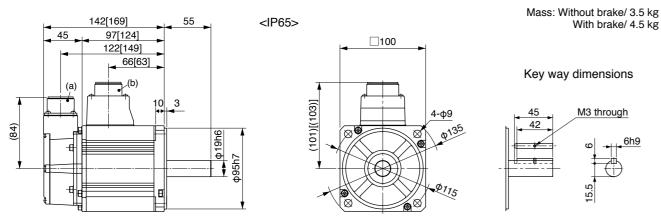
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3
 in number of applicable driver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

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



Dimensions

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



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

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[Unit: mm]

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

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

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

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

Specifications

			AC4	00 V	
		IP65		MSME154GC	MSME154SC
Motor model *1		IP67		MSME154G1□	MSME154S1
A 1: 11	Model	A5II, A5	series	MDD<	T3420
Applicable 42	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	Fi	ame sym	bol	D-fr	ame
Power supply	capacit	у	(kVA)	2	.3
Rated output			(W)	15	00
Rated torque			(N·m)	4.	77
Momentary M	ax. pea	k torque	(N·m)	14.3	
Rated current		(A(rms))	4.2	
Max. current		((A(o-p))	1	8
Regenerative	orake	Without	option No limit Note)2		t Note)2
frequency (times	min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	5000	
Moment of ine	ertia	Without brake		2.84	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	3.	17
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		1048576	131072		

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

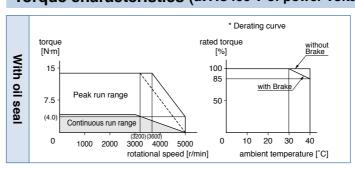
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

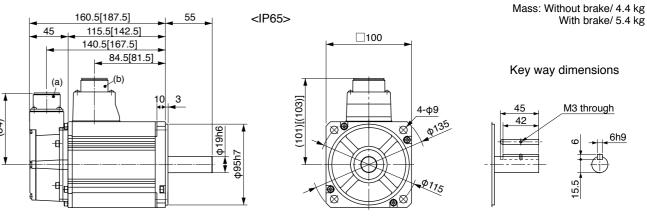
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC400 V	
		IP65	MSME204GC□	MSME204SC□
Motor model		IP67	MSME204G1□	MSME204S1
A II I. I .	Model	A5II, A5 series	MED ⇔ T4430	
Applicable driver *2	No.	A5IIE, A5E series	MED ⊘T4430E	-
unven	Fı	ame symbol	E-fra	ame
Power supply	capacit	y (kVA)	3	.3
Rated output		(W)	20	00
Rated torque		(N·m)	6.:	37
Momentary M	lax. pea	k torque (N·m)	19.1	
Rated current	:	(A(rms))	5.7	
Max. current		(A(o-p))	24	
Regenerative	brake	Without option	No limit Note)2	
frequency (times	/min) Note)1	DV0PM20049	No limit Note)2	
Rated rotation	nal spee	d (r/min)	3000	
Max. rotation	al speed	(r/min)	5000	
Moment of inc	ertia	Without brake	3.68	
of rotor (×10 ⁻⁴ kg·m²) With brake		With 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	
Resolution per single turn			1048576	131072

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

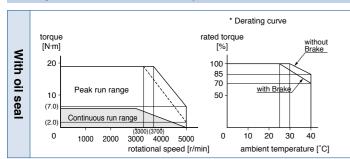
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

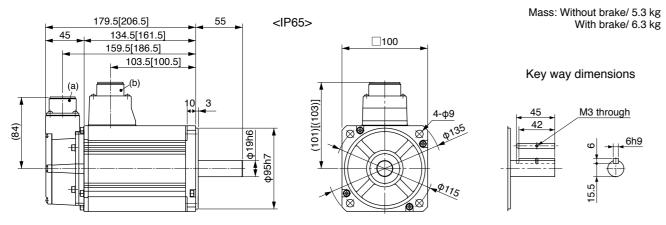
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. 400 V MSME 3.0 kW [Low inertia, Middle capacity]

Motor Specifications

Specifications

				AC4	00 V
		IP65		MSME304GC□	MSME304SC
Motor mode	9I *1	IP67		MSME304G1□	MSME304S1
	Model	A5 I , A5	series	MFD◇	T5440
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	-
unver	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	ty	(kVA)	4.	.5
Rated outp	ut		(W)	30	00
Rated torqu	ıe		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	ent	(A(rms))	9.2	
Max. currer	nt	((A(o-p))	39	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)	DV0PM2	0049×2	No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed	i	(r/min)	5000	
Moment of	inertia	Without	brake	6.50	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	6.85	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		1048576	131072		

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

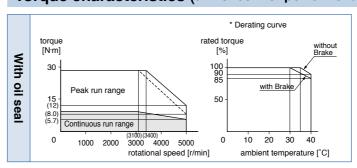
,	,
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

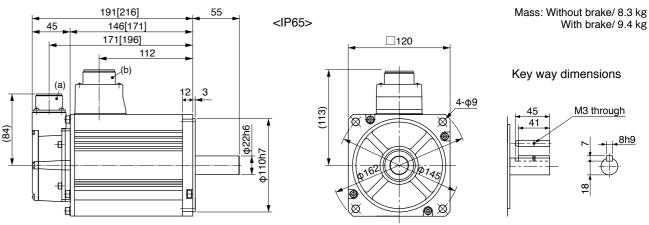
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

			AC4	00 V	
		MSME404GC	MSME404SC		
Motor model		IP67		MSME404G1□	MSME404S1
A II I- I -	Model	A5II, A5 s	series	MFD◇	TA464
Applicable *2	No.	A5IIE, A5	E series	MFD \diamondsuit TA464E	_
unven	Fi	ame symb	ool	F-fra	ame
Power supply	capacit	y	(kVA)	6	.8
Rated output			(W)	40	00
Rated torque			(N·m)	12	2.7
Momentary M	lax. pea	k torque	(N·m)	38.2	
Rated curren	t	(A	A(rms))	9.9	
Max. current (A(o-p))		42			
Regenerative	brake	Without	option	No limit Note)2	
frequency (times	/min) Note)1	DV0PM20	0049×2	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	4500	
Moment of in	ertia	Without	brake	12.9	
of rotor (×10	4 kg·m²)	With b	rake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
F	Resolution per single turn		1048576	131072	

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

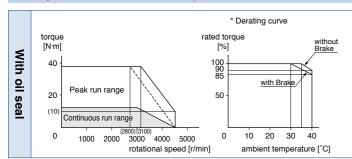
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

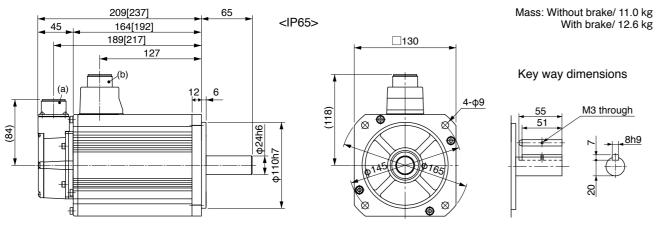
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

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

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

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

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

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

Specifications

			AC4	00 V	
Makananadal		IP65	MSME504GC□	MSME504SC□	
Motor model *1		IP67	MSME504G1□	MSME504S1□	
Amaliaabla	Model	A5II, A5 series	MFD◇	TA464	
Applicable driver *2	No.	A5IE, A5E series	MFD \diamondsuit TA464E	-	
unver	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	7.	.5	
Rated output		(W)	50	00	
Rated torque		(N·m)	15	15.9	
Momentary Ma	ax. peal	k torque (N·m)	47.7		
Rated current		(A(rms))	12.0		
Max. current		(A(o-p))	5	1	
Regenerative brake Without option		Without option	35	57	
frequency (times/r	min) Note)1	DV0PM20049×2	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	4500		
Moment of ine	rtia	Without brake	17.4		
of rotor (×10 ⁻⁴	kg·m²)	With brake	18.6		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encode	Rotary encoder specifications Note)5			17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

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

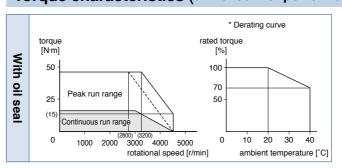
,	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

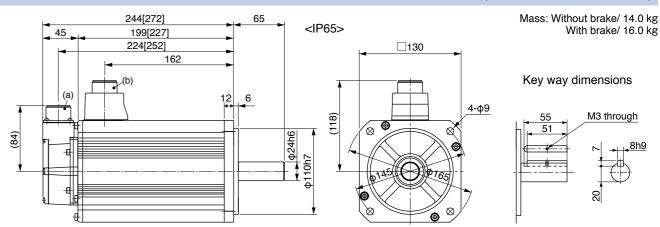
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



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



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

[Unit: mm]

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

Inform

			AC400 V		
IP65		IP65	MDME044GC	MDME044SC	
Motor model *1		IP67	MDME044G1□	MDME044S1	
Amaliaalala	Model	A5II, A5 series	MDD<	T2407	
Applicable *2	No.	A5IE, A5E series	MDD \diamondsuit T2407E	_	
unver	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	0	.9	
Rated output		(W)	40	00	
Rated torque		(N·m)	1.	1.91	
Momentary Ma	ax. peal	torque (N·m)	5.73		
Rated current		(A(rms))	1.2		
Max. current		(A(o-p))	4	.9	
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/n	nin) Note)1	DV0PM20048	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	1.61		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	1.93		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn		1048576	131072		

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

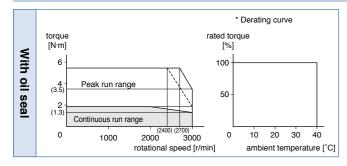
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

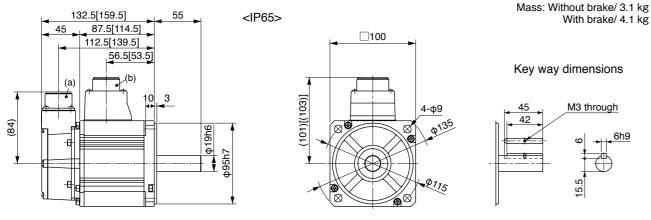
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

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



Dimensions

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



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

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[Unit: mm]

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

Specifications

				AC4	00 V
Matawasada		IP65		MDME064GC	MDME064SC
Motor mode	EI ⊧1	IP67		MDME064G1□	MDME064S1
	Model	A5II, A5	series	MDD<	T2407
Applicable driver *	No.	A5IIE, A5E series		MDD ⊘T2407E	_
ulivei	F	rame sym	bol	D-fr	ame
Power supp	oly capacit	У	(kVA)	1.	.2
Rated outpo	ut		(W)	60	00
Rated torqu	ie		(N·m)	2.	86
Momentary	Max. pea	k torque	(N·m)	8.59	
Rated curre	ent	(A(rms))	1.5	
Max. currer	nt		(A(o-p))	6	.5
Regenerativ	e brake	Without option		No limi	t Note)2
frequency (tim	nes/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotati	ional spee	d	(r/min)	2000	
Max. rotation	nal speed	I	(r/min)	3000	
Moment of	inertia	Without brake		2.03	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072

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

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

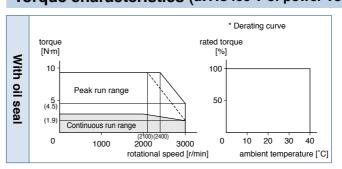
	1 0	,
;	Static friction torque (N·m)	2.5 or more
ı	Engaging time (ms)	50 or less
ı	Releasing time (ms) Note)4	15 or less
ı	Exciting current (DC) (A)	0.70±10 %
П	Releasing voltage (DC) (V)	2 or more
I	Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

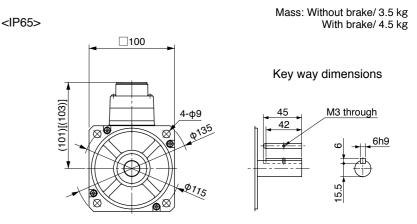
142[169]

97[124]

66[63]

122[149]

(For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC400 V		
IP65		MDME104GC	MDME104SC		
Motor model		IP67	MDME104G1□	MDME104S1	
Annliaghla	Model	A5II, A5 series	MDD<	T2412	
Applicable *2	No.	A5IIE, A5E series	MDD ⊘T2412E	_	
anver	Fr	ame symbol	D-fr	ame	
Power supply	capacit	y (kVA)	1.	.8	
Rated output		(W)	10	00	
Rated torque		(N·m)	4.	77	
Momentary M	ax. peal	k torque (N·m)	14.3		
Rated current		(A(rms))	2.8		
Max. current		(A(o-p))	1	2	
Regenerative b	rake	Without option	No limi	t Note)2	
frequency (times/	min) Note)1	DV0PM20048	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	4.60		
of rotor (×10 ⁻⁴	kg·m²)	With brake	5.90		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

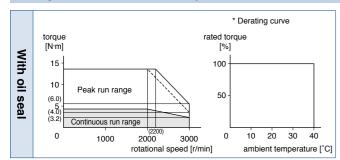
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



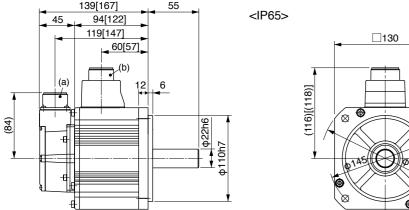
Dimensions

(For IP67 motor, refer to P.138.)

Mass: Without brake/ 5.2 kg

With brake/ 6.7 kg

[Unit: mm]



Key way 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.

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400 V MDME 1.5 kW [Middle inertia, Middle capacity]

Specifications

					AC4	00 V
		IP65		MDME154GC	MDME154SC	
Motor mode	₽I *1		IP67		MDME154G1□	MDME154S1
A 1: 1- 1 -		Model	A5 I I, A5	series	MDD<	T3420
Applicable driver	*2	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unvoi		Fr	ame sym	bol	D-fr	ame
Power supp	oly c	capacity	y	(kVA)	2	.3
Rated outp	ut			(W)	15	00
Rated torqu	ıe			(N·m)	7.	16
Momentary	Ма	x. peal	k torque	(N·m)	21.5	
Rated curre	ent		(A(rms))	4.7	
Max. currer	nt			(A(o-p))	20	
Regenerativ	/e bi	rake	Without option		No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0PM20048		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without brake		6.70	
of rotor (×1	0 ⁻⁴ l	kg·m²)	With brake		7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3		tia Note)3	10 times or less			
Rotary enco	ode	r speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single			le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

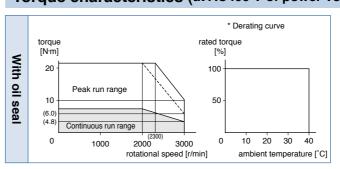
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



156.5[184.5]

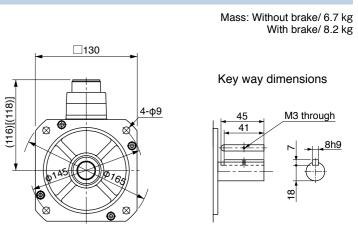
111.5[139.5]

77.5[74.5]

136.5[164.5]

Dimensions

(For IP67 motor, refer to P.138.)



(a) Encoder connector

(a)

- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

<IP65>

 Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

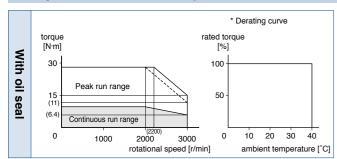
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

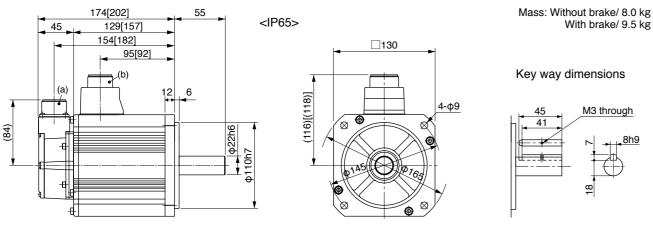
- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.138.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC400 V		
M-1		IP65		MDME304GC	MDME304SC
Motor mode	•	IP67		MDME304G1	MDME304S1
Annlinable	Model	A5 I I, A5	series	MFD◇	T5440
Applicable driver *	No.	A5IIE, A5E series		MFD \diamondsuit T5440E	_
divoi	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	4	.5
Rated outpu	ıt		(W)	30	00
Rated torqu	е		(N·m)	14	.3
Momentary	Max. peal	k torque	(N·m)	43.0	
Rated curre	nt	(A(rms))	8.7	
Max. curren	t		(A(o-p))	3	7
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (tim	es/min) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without brake		12.9	
of rotor (×10) ⁻⁴ kg·m²)	With 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		
	Resolutio	n per sing	le turn	1048576	131072

400 V MDME 3.0 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

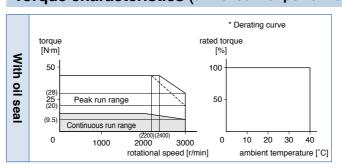
,	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

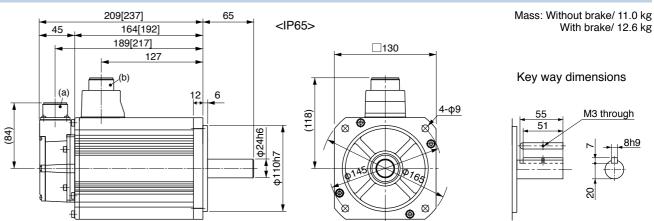
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.139.)



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

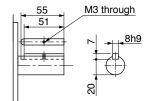
116

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

With brake/ 12.6 kg

Key way dimensions



A5 Family

			AC400 V	
		IP65	MDME404GC	MDME404SC
Motor model *1	IP67		MDME404G1□	MDME404S1
	Model	A5II, A5 series	MFD<	TA464
Applicable *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
divei	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	6	.8
Rated output		(W)	40	00
Rated torque		(N·m)	19).1
Momentary Ma	ax. peal	k torque (N·m)	57.3	
Rated current		(A(rms))	10.6	
Max. current		(A(o-p))	45	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/	min) Note)1	DV0PM20049×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	37.6	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	42.9	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

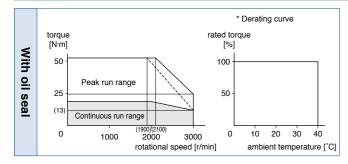
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
Thrust load B-direction (N)		980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

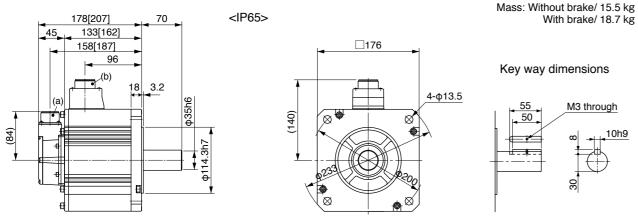
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

400 V MDME 5.0 kW [Middle inertia, Middle capacity]

Specifications

					AC4	00 V	
		IP65		MDME504GC	MDME504SC		
Motor mode	ÐI ∗1		IP67		MDME504G1□	MDME504S1	
A II l. l .	ı	Model	A5 I I, A5	series	MFD◇	TA464	
Applicable driver	*2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-	
unven		Fr	ame sym	bol	F-fra	ame	
Power supp	oly c	apacity	y	(kVA)	7.	.5	
Rated outpo	ut			(W)	50	00	
Rated torqu	ıe			(N·m)	23	3.9	
Momentary	Max	k. peal	k torque	(N·m)	71	.6	
Rated curre	ent		(A(rms))	13.0		
Max. currer	nt		((A(o-p))	5	55	
Regenerativ	e bra	ake	Without	option	otion 120		
frequency (tin	nes/mi	n) Note)1	DV0PM20049×2		No limit Note)2		
Rated rotat	rotational speed (r/min)			(r/min)	20	00	
Max. rotation	nal	al speed (r/min)			30	00	
Moment of	inert	ia	Without	brake	48.0		
of rotor (×1	0 ⁻⁴ k	g·m²)	With b	rake	53.3		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less					
Rotary enco	oder	speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single turn			le turn	1048576	131072		

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

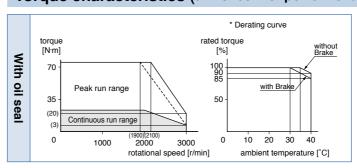
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

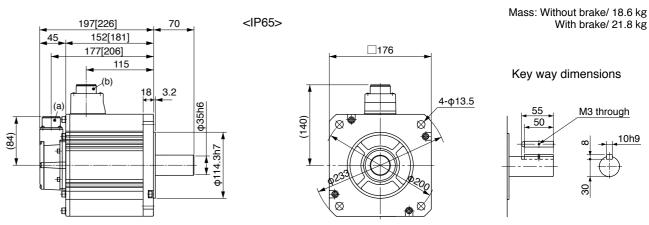
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

-

			AC4	00 V
IP65			-	-
Motor model *1		IP67	MDME754G1□	MDME754S1
A	Model	A5II, A5 series	MGD♦	TB4A2
Applicable driver *2	No.	A5IIE, A5E series	-	-
unver	Fr	ame symbol	G-fr	ame
Power supply	capacit	y (kVA)	1	1
Rated output		(W)	75	00
Rated torque		(N·m)	47	'.8
Momentary Ma	ax. peal	k torque (N·m)	119	
Rated current		(A(rms))	22	
Max. current		(A(o-p))	83	
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0PM20049×3	No limit Note)2	
Rated rotation	al spee	d (r/min)	1500	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	101	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

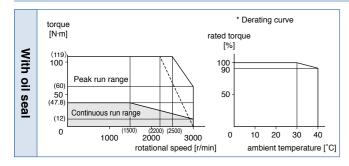
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

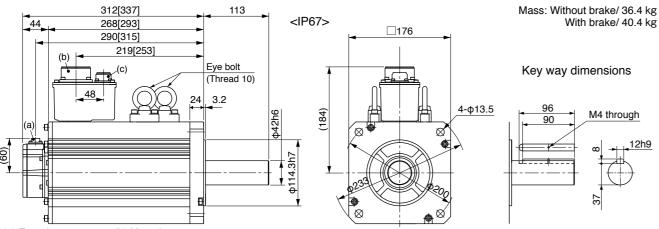
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3
 in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
Matauaaaalal		IP65		-	-
Motor model		IP67		MDMEC14G1	MDMEC14S1
A 1: 1- 1 -	Model	A5 I I, A5	series	MHD♦	TB4A2
Applicable driver *2	No.	A5IIE, A	5E series	-	_
divei	Fr	ame sym	bol	H-fr	ame
Power suppl	y capacit	y	(kVA)	1	7
Rated output	t		(W)	110	000
Rated torque)		(N·m)	7	0
Momentary I	Max. peal	k torque	(N·m)	175	
Rated currer	nt	(A(rms))	27.1	
Max. current	:		(A(o-p))	10)1
Regenerative	brake	Without	option	No limit Note)2	
frequency (time	es/min) Note)1	DV0PM	120059	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	2000	
Moment of ir	nertia	Without	brake	212	
of rotor (×10	⁻⁴ kg·m²)	With b	orake	220	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per single turn			1048576	131072

400 V MDME 11.0 kW [Middle inertia, Middle capacity]

Brake specifications (For details, refer to P.183)
 This brake will be released when it is energized. Do not use this for braking the motor in motion.

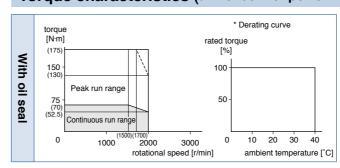
,	,
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

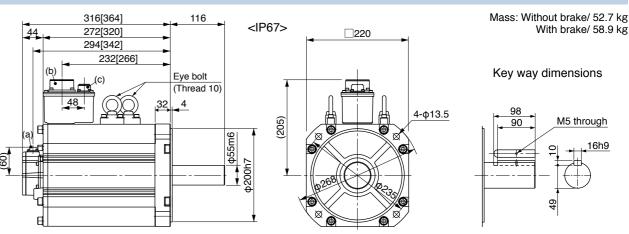
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During operation	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Intorm

				AC4	00 V
	IP65		_	-	
Motor model *1		IP67		MDMEC54G1	MDMEC54S1
A Ii I. I .	Model A5II, A5 series		MHD♦	TB4A2	
Applicable *2	No.	A5IIE, A	5E series	_	-
divei	Fr	ame sym	ıbol	H-fr	ame
Power supply	capacit	y	(kVA)	2	2
Rated output			(W)	150	000
Rated torque			(N·m)	95	i.5
Momentary Ma	ax. peal	k torque	(N·m)	224	
Rated current (A(rms))			33.1		
Max. current (A(o-p))			118		
Regenerative brake With		Without	option	No limit Note)2	
frequency (times/	imes/min) Note)1 DV0PM20059		No limit Note)2		
Rated rotation	al spee	d	(r/min)	1500	
Max. rotationa	l speed		(r/min)	2000	
Moment of ine	rtia	rtia Without brake		302	
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m²) With brake			211	
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	
R	Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

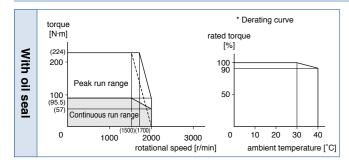
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

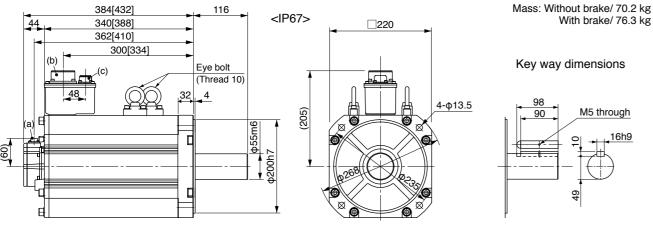
During assembly During operation	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
	Radial load P-direction (N)	2254
	Thrust load A, B-direction (N)	686

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.47.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V		
M -4		IP65		-	-	
Motor mode	:1	IP67		MFME154G1□	MFME154S1	
A I' l. I .	Model	A5 I I, A5	series	MDD<	T3420	
Applicable driver *	No.	A5IIE, A	5E series	MDD ⊘T3420E	_	
unver	Fr	ame sym	bol	D-fr	D-frame	
Power supp	ly capacity	y	(kVA)	2	.4	
Rated outpu	ıt		(W)	15	00	
Rated torqu	е		(N·m)	7.	16	
Momentary	Max. peal	k torque	(N·m)	21.5		
Rated curre	nt	(A(rms))	3.8		
Max. current (A(o-p))			1	6		
Regenerative	e brake	Without	option	100		
frequency (tim	es/min) Note)1	DV0PM20048		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	nertia	Without	brake	18.2		
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	23.5		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

400 V MFME 1.5 kW Middle inertia, Middle capacity

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

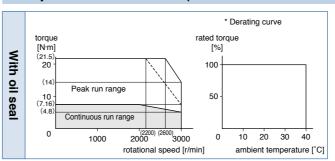
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

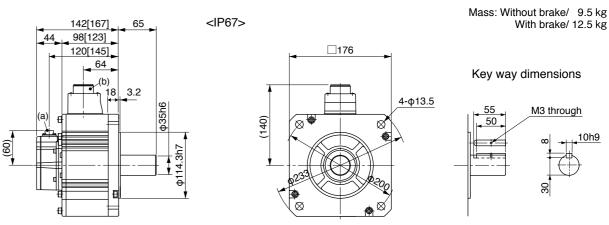
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

[Unit: mm]

			AC4	00 V	
IP65		-	-		
Motor model *1		IP67	MFME254G1□	MFME254S1	
Amaliaalala	Model	A5II, A5 series	MED<	T4430	
Applicable *2	No.	A5IE, A5E series	MED⇔T4430E	_	
divei	Fr	ame symbol	E-fra	ame	
Power supply	capacit	y (kVA)	3	.9	
Rated output		(W)	25	00	
Rated torque		(N·m)	11	11.9	
Momentary Ma	ax. peal	k torque (N·m)	30.4		
Rated current (A(rms))		6.7			
Max. current (A(o-p))		29			
Regenerative brake without option frequency (times/min) Note)1 DV0PM20049		7	75		
		DV0PM20049	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	35.8		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	45.2		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

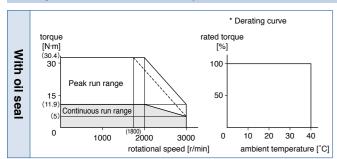
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

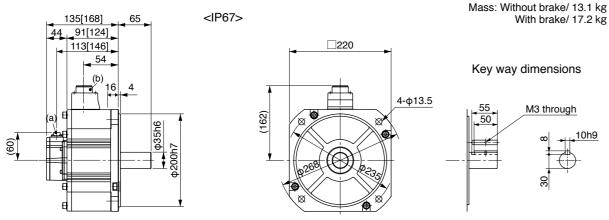
During assembly During operation	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

ile illertia, middle capacity	Motor Chapitia
type	Motor Specification

Specifications

				AC400 V		
		IP65		-	-	
Motor mod	*1	IP67		MFME454G1□	MFME454S1	
A I' l. I .	Mod	del A5II, A5	series	MFD◇	TA464	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-	
unven		Frame sym	nbol	F-fra	ame	
Power sup	ply capa	city	(kVA)	6	.9	
Rated outp	ut		(W)	45	00	
Rated torqu	ue		(N·m)	21	.5	
Momentary	/ Мах. р	eak torque	(N·m)	54.9		
Rated curre	ent	((A(rms))	12.4		
Max. curre	nt		(A(o-p))	53		
Regenerativ	ve brake	Without	t option	6	7	
frequency (tir			20049×2	375		
Rated rotat	tional sp	eed	(r/min)	2000		
Max. rotation	onal spe	ed	(r/min)	3000		
Moment of	inertia	Withou	t brake	63.1		
of rotor (x1	0 ⁻⁴ kg·n	1 ²) With I	brake	70.9		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			ale turn	1048576	131072	

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

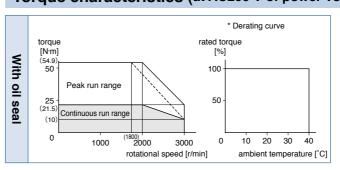
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

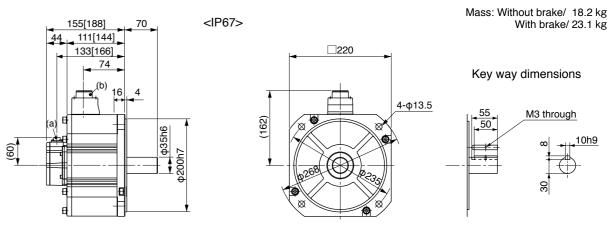
	Radial load P-direction (N)	1862
During assembly	Thrust load A-direction (N)	686
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

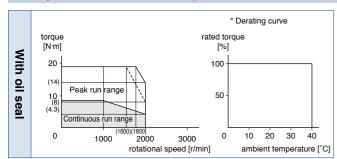
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

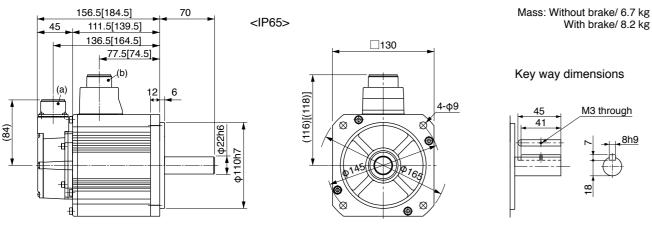
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
M		IP65		MGME204GC□	MGME204SC
Motor mode	:1	IP67		MGME204G1□	MGME204S1
A	Model	A5II, A5 series		MFD◇	T5440
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	_
unven	Fi	rame sym	bol	F-fra	ame
Power supp	ly capacit	у	(kVA)	3	.8
Rated outpu	ut		(W)	20	00
Rated torqu	е		(N·m)	19).1
Momentary	Max. pea	k torque	(N·m)	47.7	
Rated curre	nt	(A(rms))	8.5	
Max. curren	nt	((A(o-p))	3	0
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tim	nes/min) Note)1	DV0PM20049×2		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	inertia	Without brake		30.3	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		35.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

400 V MGME 2.0 kW [Middle inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

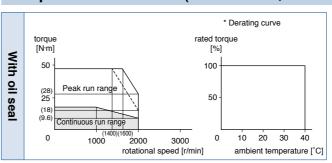
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

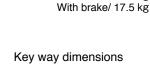
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

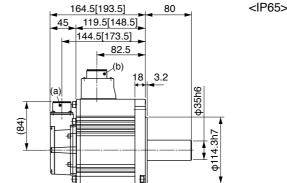


Dimensions

(For IP67 motor, refer to P.139.)



Mass: Without brake/ 14.0 kg



□176

M3 through 50

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

			AC4	00 V
			MGME304GC□	MGME304SC□
Motor model		IP67	MGME304G1□	MGME304S1
A mustic a late	Model	A5II, A5 series	MFD◇	TA464
Applicable *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
unver	Fı	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	28	3.7
Momentary Ma	ax. pea	k torque (N·m)	71.7	
Rated current		(A(rms))	11.3	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	No limit Note)2	
		DV0PM20049×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	48.4	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	53.7	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized. Do not use this for braking the motor in motion.

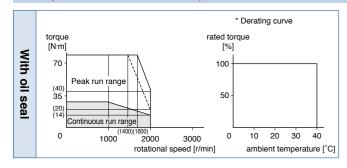
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

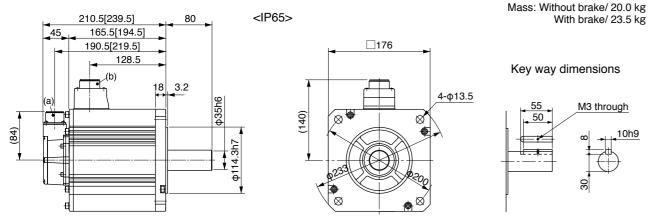
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.139.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions>
Reduce the moment of inertia ratio if high speed response operation is required.
Dimensions are subject to change without notice. Contact us or a dealer for the latest information.
Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC400 V		
Matawasada		IP65		-	-	
Motor model	·	IP67		MGME454G1□	MGME454S1	
Analiaahla	Model	A5II, A5 series		MFD \diamondsuit TA464		
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_	
diivei	Fr	ame sym	bol	F-fra	ame	
Power suppl	y capacit	y	(kVA)	7.	.5	
Rated outpu	t		(W)	45	00	
Rated torque	e		(N·m)	43	3.0	
Momentary I	Max. peal	k torque	(N·m)	107		
Rated currer	nt	(A(rms))	14.8		
Max. current (A(o-p))			5	5		
Regenerative		Without	•	No limi	t Note)2	
frequency (time	es/min) Note)1	DV0PM20049×2		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	1000		
Max. rotation	nal speed		(r/min)	2000		
Moment of ir	nertia	Without brake		79.1		
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With b	rake	84.4		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolutio	n per sing	le turn	1048576	131072	

Brake specifications (For details, refer to P.183)
 This brake will be released when it is energized. Do not use this for braking the motor in motion.

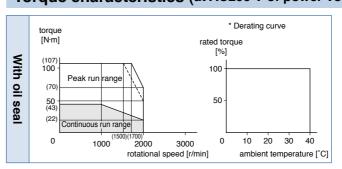
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

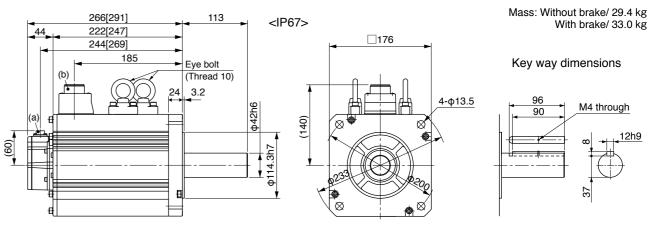
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1470
	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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 Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

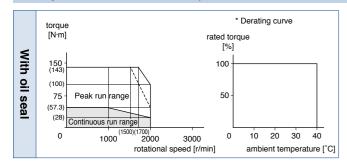
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

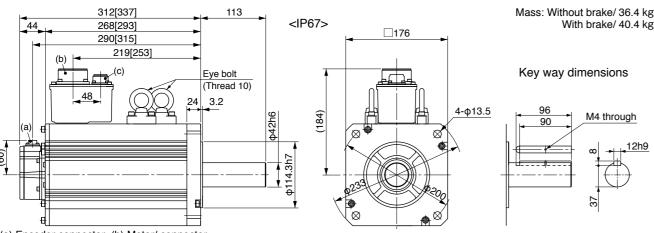
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588

- For details of Note 1 to Note 5, refer to P.182, P.183.
- Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
M-4		IP65		MHME104GC	MHME104SC
Motor mode	9I ⊧1	IP67		MHME104G1□	MHME104S1
	Model	A5II, A5	series	MDD<	T2412
Applicable driver	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-
unven	Fi	rame sym	bol	D-fr	ame
Power supp	oly capacit	у	(kVA)	1.	.8
Rated outp	ut		(W)	10	00
Rated torqu	ıe		(N·m)	4.	77
Momentary	Max. pea	k torque	(N·m)	14.3	
Rated curre	ent	(A(rms))	2.9	
Max. current (A(o-p))			1	2	
Regenerativ	e brake	Without	option	83	
frequency (tin	nes/min) Note)1	DV0PM	OPM20048 No limit Note)		t Note)2
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of	inertia	Without	brake	24.7	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		Note)5	20-bit Incremental	17-bit Absolute	
		n per sing	le turn	1048576	131072

400 V MHME 1.0 kW [High inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

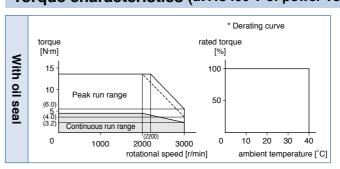
(20 not use time for pranting the motor in motion)				
4.9 or more				
80 or less				
70 or less				
0.59±10 %				
2 or more				
24±2.4				

• Permissible load (For details, refer to P.183)

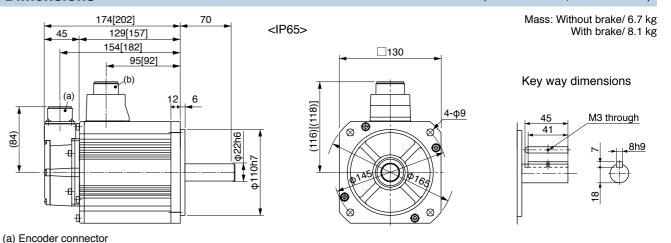
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions (For IP67 motor, refer to P.140.)



(b) Motor/Brake connector * Figures in [] represent the dimensions with brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

[Unit: mm]

			AC4	00 V
Motor model	IP65		MHME154GC	MHME154SC
*1		IP67	MHME154G1	MHME154S1
A !! - -	Model	A5II, A5 series	MDD ⊘T3420	
Applicable driver *2	No.	A5IE, A5E series	MDD \diamondsuit T3420E	_
unvei	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	2	.3
Rated output		(W)	15	00
Rated torque		(N·m)	7.	16
Momentary M	ax. peal	k torque (N·m)	21.5	
Rated current (A(rms))			4.7	
Max. current (A(o-p))			20	
Regenerative brake Without option			2	2
frequency (times/min) Note)1 DV0PM20048		130		
Rated rotation	Rated rotational speed (r/min)		2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	37.1	
of rotor (×10 ⁻⁴	kg·m²)	With brake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

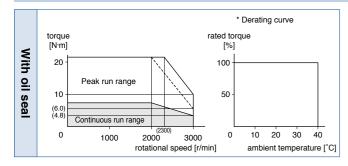
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

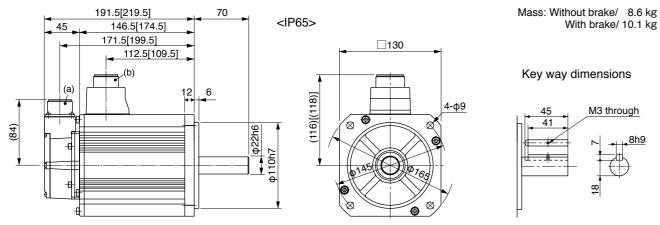
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V	
		IP65		MHME204GC	MHME204SC
Motor mode	⊝l ⊧1	IP67		MHME204G1	MHME204S1
	Model	A5II, A5	series	MED<	T4430
Applicable driver	No.	A5IIE, A	5E series	MED ⊘T4430E	-
unven	F	rame sym	bol	E-fra	ame
Power supp	oly capacit	у	(kVA)	3	.3
Rated outp	ut		(W)	20	00
Rated torqu	ie		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	ent	(A(rms))	5.5	
Max. current (A(o-p))			2	4	
Regenerativ	e brake	Without	option	4	5
frequency (tin	nes/min) Note)1	DV0PM	20048	142	
Rated rotat	ional spee	d	(r/min)	2000	
Max. rotation	nal speed	l	(r/min)	3000	
Moment of	inertia	Without	brake	57.8	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	59.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sina	le turn	1048576	131072

400 V MHME 2.0 kW [High inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

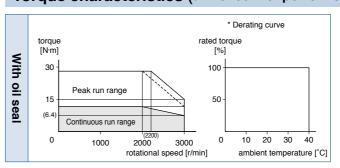
(20 not doc and for graining are motor in measure)				
Static friction torque (N·m)	24.5 or more			
Engaging time (ms)	80 or less			
Releasing time (ms) Note)4	25 or less			
Exciting current (DC) (A)	1.3±10 %			
Releasing voltage (DC) (V)	2 or more			
Exciting voltage (DC) (V)	24±2.4			

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



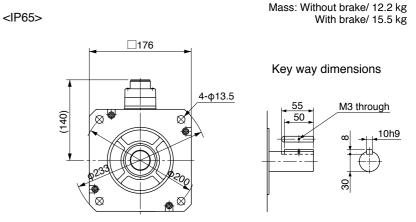
Dimensions

178[207]

133[162]

158[187]

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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			AC4	00 V	
Motor model			MHME304GC	MHME304SC	
*1		IP67		MHME304G1□	MHME304S1
Annliachla	Model	A5 I I, A5 s	series	MFD◇	T5440
Applicable driver *2	No.	A5IIE, A5	E series	MFD \diamondsuit T5440E	-
divei	Fı	ame symb	ool	F-fra	ame
Power supply	capacit	y	(kVA)	4	.5
Rated output			(W)	30	00
Rated torque			(N·m)	14	l.3
Momentary Ma	ax. pea	k torque	(N·m)	43.0	
Rated current		(A	A(rms))	8.0	
Max. current		(/	A(o-p))	3	4
Regenerative b	rake	Without	option	19	
frequency (times/r		DV0PM20	0049×2	142	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	90.5	
of rotor ($\times 10^{-4}$	kg·m²)	With bi	rake	92.1	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
Resolution per single turn			e turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

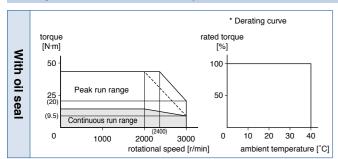
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

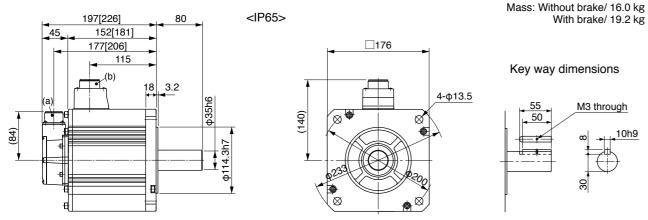
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

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[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

				AC4	00 V
		IP65		MHME404GC	MHME404SC
Motor mode *	•	IP67		MHME404G1□	MHME404S1
A I' l. l .	Model	A5II, A5 series		MFD◇	TA464
Applicable driver **	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unven	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	6	.8
Rated outpu	ıt		(W)	40	00
Rated torque	е		(N·m)	19).1
Momentary	Max. peal	k torque	(N·m)	57.3	
Rated current (A(rms))			10.5		
Max. current (A(o-p))			4	5	
Regenerative	e brake	Without	option	17	
frequency (time	es/min) Note)1	DV0PM2	0049×2	125	
Rated rotation	onal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without	brake	112	
of rotor (×10 ⁻⁴ kg·m²) With brake			rake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			1048576	131072	

400 V MHME 4.0 kW [High inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

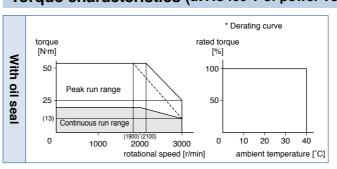
5 or more
0 or less
5 or less
.3±10 %
or more
24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



3.2

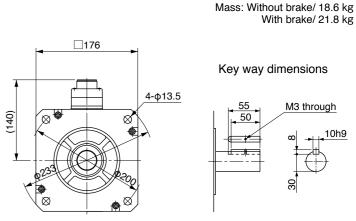
210.5[239.5]

190.5[219.5]

165.5[194.5]

Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

<IP65>

[Unit: mm]

				00 V
Mataumandal		IP65	MHME504GC	MHME504SC
Motor model *1		IP67	MHME504G1	MHME504S1
Annliaghla	Model	A5II, A5 series	MFD ◇TA464	
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
divei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	7.	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23	3.9
Momentary Ma	ax. peal	k torque (N·m)	71.6	
Rated current		(A(rms))	13.0	
Max. current		(A(o-p))	5	5
Regenerative b	rake	Without option	1	0
frequency (times/r	min) Note)1	DV0PM20049×2	76	
Rated rotation	al spee	d (r/min)	20	00
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	162	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	164	
Recommender ratio of the loa			5 times or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

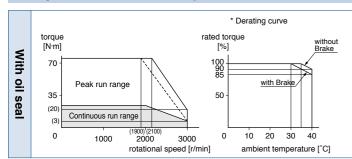
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

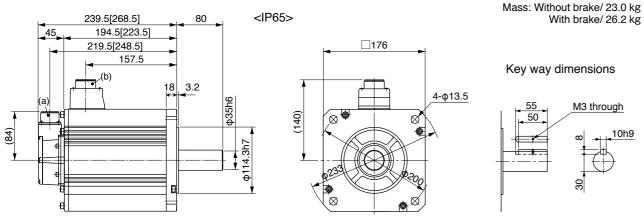
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions

(For IP67 motor, refer to P.140.)



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Specifications

			AC4	00 V		
		IP65		-	-	
Motor mode	:1	IP67		MHME754G1	MHME754S1	
A I' l. l .	Model	A5II, A5 series		MGD ⊘TB4A2		
Applicable driver *	No.	A5IIE, A5E series		-	-	
unver	Fr	ame sym	bol	G-fr	G-frame	
Power supp	ly capacit	y	(kVA)	9	.0	
Rated outpu	ut		(W)	75	00	
Rated torqu	е		(N·m)	47	'.8	
Momentary	Max. peal	k torque	(N·m)	119		
Rated curre	nt	(A(rms))	22.0		
Max. current (A(o-p))			8	3		
Regenerativ		Without	-	No limit Note)2		
frequency (tim	nes/min) Note)1	DV0PM2	0049×3	No limit Note)2		
Rated rotati	onal spee	d	(r/min)	1500		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	inertia	Without	brake	273		
of rotor (×10 ⁻⁴ kg·m²) With brake			rake	279		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			1048576	131072		

400 V MHME 7.5 kW [High inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

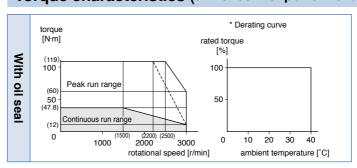
58.8 or more
150 or less
50 or less
1.4±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

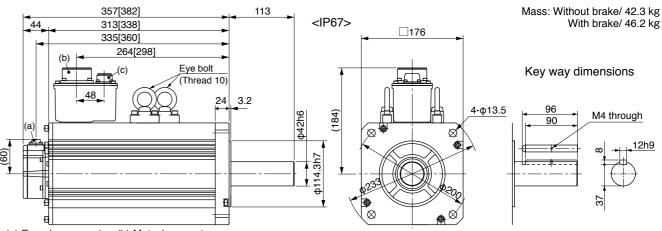
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.46.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

Torque characteristics (at AC400 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



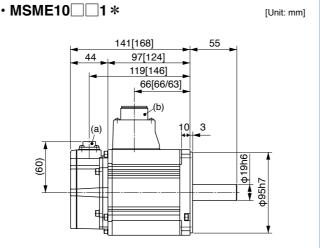
- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

A5 Family

• MSME084 1 * [Unit: mm] 131.5[158.5] 87.5[114.5] 109.5[136.5] 56.5[53.5]

- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

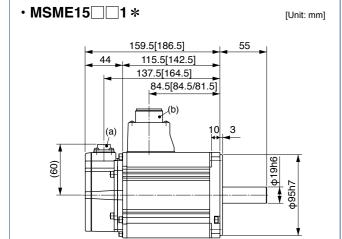


IP67 motor (MSME 200 V/ 400 V type)

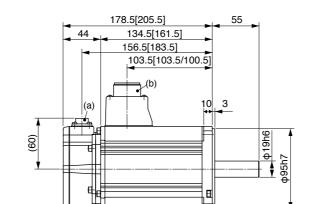
MSME20□□1*

- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

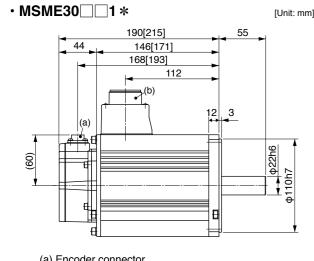
[Unit: mm]



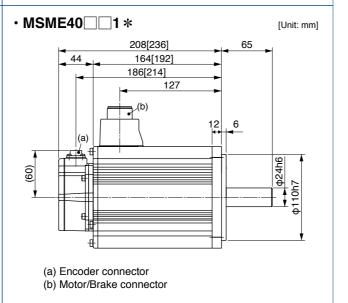
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

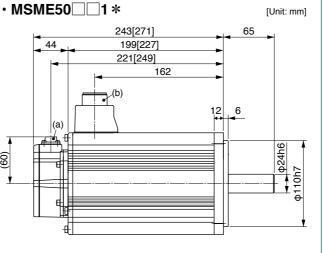


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

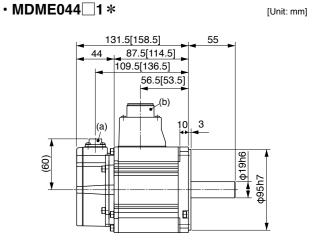


* Figures in [] represent the dimensions with brake.

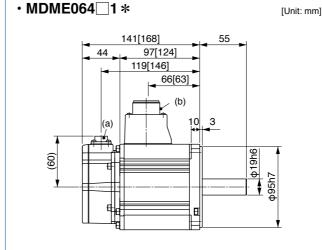
* For motor specifications, refer to IP65 motor page.



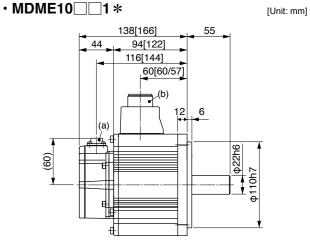
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



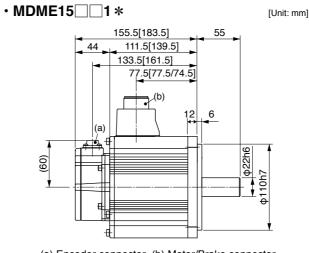
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



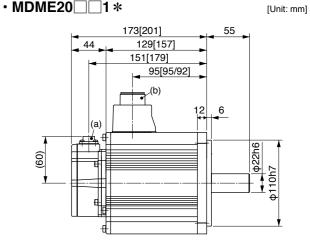
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



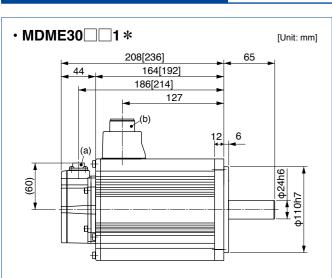
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [],left figure is for 200 V and right figure is for 400 V.



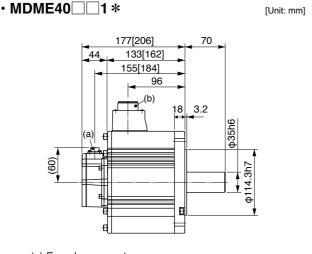
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

^{*} For motor specifications, refer to IP65 motor page.

[Unit: mm]



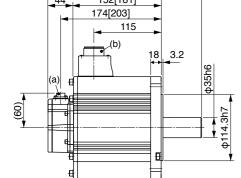
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



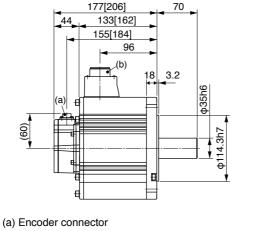
IP67 motor (MDME 200 V/ 400 V type) MGME 200 V/ 400 V type)

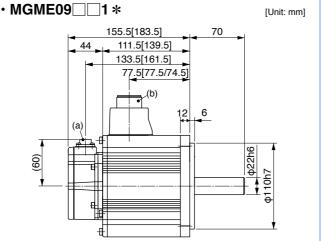
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

MDME50□□1 * [Unit: mm] 196[225] 152[181] 174[203] 115



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake

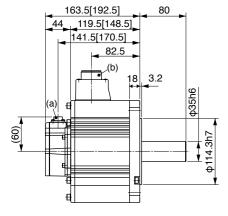




- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

[Unit: mm]

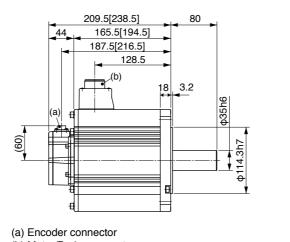
MGME20□□1 *



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

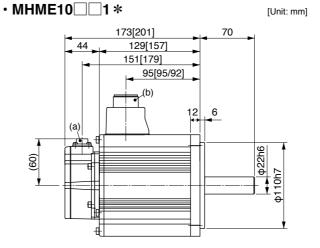
MGME30□□1 *

[Unit: mm]



- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

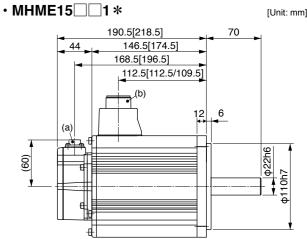
* For motor specifications, refer to IP65 motor page.



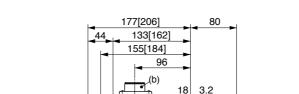
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

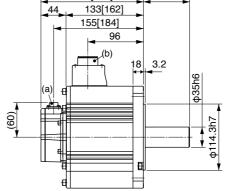
[Unit: mm]

[Unit: mm]



- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.



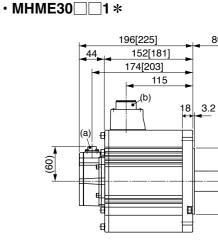


(a) Encoder connector

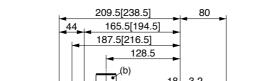
MHME40 □ □ 1 *

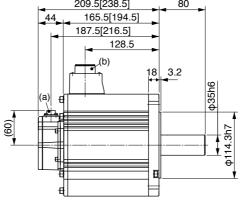
MHME20□□1*

- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

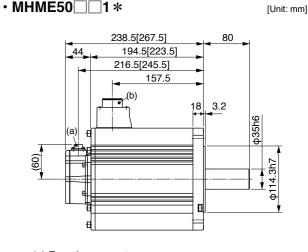


- (a) Encoder connector
 - (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.





- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

^{*} For motor specifications, refer to IP65 motor page

Motor Types with Gear Reducer

MSME

100 W to 750 W

Model Designation/ The Combination of the Driver and the Motor Motors with Gear Reducer

Motor rated output

02

04

08

2

Pulse counts

20-bit

Symbol Specifications

Voltage specifications

Symbol Rated output

100 W

200 W

400 W

750 W

100 V

200 V

Resolution

1048576

131072

Wire

5

7

* For combination of elements of model number, refer to Index.

Model Designation

MSMD

MSME

MHMD

Symbol

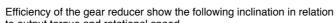
MSMD MHMD

Type and Specifications

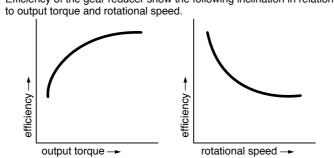
100 W to 750 W

Reduction	uction Motor output (W)				
ratio	100	200	400	750	reducer
1/5	•	•	•	•	
1/9	•	•	•	•	For high
1/15	•	•	•	•	precision
1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.



200 W to 750 W



Specifications of Motor with Gear Reducer

Items		Specifications	
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer	
	Composition of gear	Planetary gear	
	Gear efficiency	65 % to 85 %	
0	Lubrication	Grease lubrication	
Gear reducer	Rotational direction at output shaft	Same direction as the motor output shaft	
	Mounting method	Flange mounting	
	Permissible moment of inertia of the load (conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor	
	Protective structure	IP44 (at gear reducer)	
Environment -	Ambient temperature	0 °C to 40 °C (free from condensation)	
	Ambient humidity	85 %RH (free from condensation) or less	
	Vibration resistance	49 m/s ² or less (at motor frame)	
	Impact resistance	98 m/s² or less	

Motor types with gear reducer

Symbol	Reduction ratio	Motor output (W)				Type of
		100	200	400	750	réducer
1N	1/5	•	•	•	•	
2N	1/9	•	•	•	•	For high precision
3N	1/15	•	•	•	•	
4N	1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.

Motor structure

Key way without with Key way without with	Symbol	Shaft	Holding	ing brake	
3 • • • • • • • • • • • • • • • • • • •	Syllibol	Key way	without	with	
4 •	3	•	•		
	4	•		•	

Format

Rotary encoder specifications

M S M

Type

Low inertia

100 W to 750 W

Low inertia

100 W to 750 W

High inertia

200 W to 750 W

The Combination of the Driver and the Motor with gear reducer

	100	V	200 V		
Motor output	Part No. of motor	Single phase, 100 V	Part No. of motor	Single/3-phase, 200 V	
•	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver	
100 W	MSME011□□□N	MADHT1107 MADKT1107	MSME012□□□N MSMD012□□□N	MADHT1505 MADKT1505	
100 vv	MSMD011□□□N	MADHT1107E MADKT1107E		MADHT1505E MADKT1505E	
200 W	MSME021	MBDHT2110 MBDKT2110	MSME022 N MSMD022 N MHMD022 N	MADHT1507 MADKT1507	
200 W	MSMD021 N MHMD021 N	MBDHT2110E MBDKT2110E		MADHT1507E MADKT1507E	
400 W	MSME041	MCDHT3120 MCDKT3120	MSME042 N	MBDHT2510 MBDKT2510	
	MSMD041	MCDHT3120E MCDKT3120E	MSMD042	MBDHT2510E MBDKT2510E	
750 W	_	_	MSME082 N MSMD082 N MHMD082 N	MCDHT3520 MCDKT3520	
				MCDHT3520E MCDKT3520E	

 $^{^{\}star}$ Motor specifications enter to $\square\square\square$ of the motor model number. Refer to "Model designation".

Incremental Absolute 17-bit * S: can be used in incremental.

Torque Characteristics of Motor

Table of Motor Specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque	(motor + conv to moto	of inertia reducer/ erted or shaft)		uss w/ brake	Permissible radial load	Permissible thrust load
		(w)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J(×10 ⁻⁴		(k		(N)	(N)
	MSME01 1N	(11)	1/5	75	600	1200	1.18	3.72	0.091	0.094	1.0	1.2	490	245
	MSME01 DD 2N		1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
	MSME01 3N	100	1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
	MSME01	_	1/25	80	120	240	6.27	19.0	0.0885	0.0915	2.15	2.35	1670	833
	MSME02 IN		1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
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 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
W0-	MSME04		1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia	MSME04 DDD 2N		1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
rtia	MSME04 CC 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 1N		1/5	672	600	1200	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSME082 2N		1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 3N	750	1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01		1/5	75	600	1000	1.18	3.72	0.091	0.094	1.02	1.23	490	245
	MSMD01 2N		1/9	80	333	555	2.25	6.86	0.0853	0.0883	1.02	1.23	588	294
	MSMD01 3N	100	1/15	80	200	333	3.72	11.4	0.086	0.089	1.17	1.38	784	392
	MSMD01		1/25	80	120	200	6.27	19.0	0.0885	0.0915	2.17	2.38	1670	833
	MSMD02 1N		1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
2	MSMD02 CC 2N	200	1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02 3N		1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
	MSMD02	_	1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low inerti	MSMD04		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
ine	MSMD04 CC 2N		1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
rtia	MSMD04 🗆 🗆 3N	400	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04	-	1/25	332	120	200	26.4	79.2	0.56	0.58	4.4	4.9	2060	1030
	MSMD082		1/5	672	600	900	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSMD082 2N		1/9	635	333	500	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSMD082	750	1/15	635	200	300	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSMD082		1/25	635	120	180	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02		1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02 DD 2N	-	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
3	MHMD02	-	1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
	MHMD04 🗆 🗆 2N		1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
ligh	MHMD04 🗆 🗆 3N	400	1/15	332	200	333	15.8	47.5	0.97	1.0	3.5	3.9	1470	735
High inertia	MHMD04 🗆 🗆 4N		1/25	332	120	200	26.4	79.2	0.97	1.0	4.6	5.0	2060	1030
rtia	MHMD082		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
	MHMD082	-	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
	MHMD082	750	1/15	635	200	300	30.4	91.2	2.21	2.31	6.3	7.1	1760	882
	MHMD082	-	1/25	635	120	180	50.7	152	2.16	2.26	6.3	7.1	2650	1320
			1/23	ບວວ	120	100	JU./	192	2.10	2.20	0.3	1.1	2000	1320

Table of Motor Specifications

Supply oltage o driver	Reduction motor output	1/5	1/9	1/15	1/25		
Guivei	100 W	MSME011 1N torque [N·m] 4.0 Peak run range Continuous run range 0 500 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 un 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]		
100 V	200 W	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, Continuos run range 0 400 800 rotational speed [r/min]	MSME021 3N torque [N·m] 20 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME021 4N torque [N-m] 40 Peak run tange 20 Continuous run range 0 100 200 rotational speed [//min]		
	400 W	MSME041 1N torque [N·m] 20 Peak rur range Continuous run range 0 500 1000 rotational speed [r/min]	MSME041 2N torque [N-m] 40 Peak run range 0 400 800 rotational speed [r/min]	MSME041 3N torque [N-m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME041 4N torque [N·m] 80 Peak rur range 40 Continuous un tange 0 100 200 rotational speed [r/min]		
200 V	100 W	MSME012 1N torque [N-m] 4.0 Peak run range 2.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSME012 2N torque [N·m] 8.0 Peak rur range 4.0 Continuous run range 0 400 800 rotational speed [r/min]	MSME012 3N torque [N-m] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME012 4N torque [N·m] 20 Peak rur range 10 Continuous run range 10 100 200 rotational speed [r/min]		
	200 W	MSME022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run tange 0 500 1000 rotational speed [r/min]	MSME022 2N torque [N·m] 16.0 Peak run tange Continuous run range 0 400 rotational speed [r/min]	MSME022 3N torque [N-m] 20 Peak rur range 10 Continuous run range 0 200 400 rotational speed [r/min]	MSME022 4N torque [N·m] 40 Peak run range 20 Continuous tun range 0 100 2200 rotational speed [r/min]		
	400 W	MSME042 1N torque [N·m] 20 Peak rur range Continuous run range 0 500 1000 rotational speed [r/min]	MSME042 2N torque [N-m] 40 Peak run range Continuos 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 run range 40 Continuous run range 0 100 200 rotational speed [r/min]		
	750 W	MSME082 1N torque [N·m] 40 Peak run range Continuous run range	MSME082 2N torque [N·m] 80 Peak rur range Continuous run range	MSME082 3N torque [N-m] 120 Peak run lange Continuous lun range	MSME082 4N torque [N·m] 160 Peak run range		

MSMD series (100 W to 750 W)

Supply voltage to driver	Reduction motor output	1/5	1/9	1/15	1/25
	100 W	MSMD011 1N torque [N·m] 4.0 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MSMD011 2N torque [N-m] 8.0 Peak run range 0 400 800 rotational speed [r/min]	MSMD011 3N torque [N-m] 16.0 Peak run tange Continuous run range 0 200 400 rotational speed [r/min]	MSMD011 4N torque [N·m] 20 Peak rur range 10 Continuous run range 0 100 200 rotational speed [r/min]
100 V	200 W	MSMD021 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSMD021 2N torque [N·m] 16.0 Peak run tange Continuous run tange 0 800 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 [//min]
	400 W	MSMD041 1N torque [N·m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MSMD041 2N torque [N·m] 40 Peak run range Continuous run jange 0 400 800 rotational speed [r/min]	MSMD041 3N torque [N·m] 60 30 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 0 100 200 rotational speed [r/min]
	100 W	MSMD012 1N torque [N·m] 4.0 Peak run range 2.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSMD012 2N torque [N-m] 8.0 Peak run range 4.0 Continuous 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 rur range 10 Continuous run range 0 100 200 rotational speed [r/min]
200 V	200 W	MSMD022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSMD022 2N torque [N·m] 16.0 Peak run tange Continuous run jange 0 400 800 rotational speed [r/min]	MSMD022 3N torque [N·m] 20 Peak run tange 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]
	400 W	MSMD042 1N torque [N·m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MSMD042 2N torque [N·m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSMD042 3N torque [N-m] 60 Peak run range Continuous 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]
	750 W	MSMD082 1N torque [N-m] 40 Peak run range Continuous run range	MSMD082 2N torque [N·m] 80 Peak 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MSMD082 3N torque [N-m] 120 Peak run range Continuous run range	MSMD082 4N torque [N-m] 160 Peak run range Continuous run range

Dotted line represents the torque at 10 % less supply voltage.

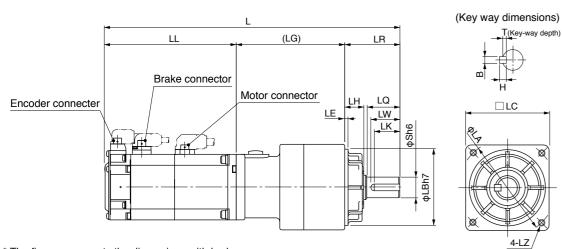
MHM	D series	(200 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
100 V	200 W	MHMD021 1N torque [N·m] 8.0 Peak run range 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N·m] 16.0 Peak run fange Continuous run fange 0 400 800 rotational speed [r/min]	MHMD021 3N torque [N-m] 20 Peak run range Contiruous run range 0 200 400 rotational speed [r/min]	MHMD021 4N torque [N-m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
100 V	400 W	MHMD041 1N torque [N-m] 20 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD041 2N torque [N·m] 40 Peak Continuous run range 0 400 800 rotational speed [r/min]	MHMD041 3N torque [N-m] 60 Peak run range Contiruous run range 0 200 400 rotational speed [r/min]	MHMD041 4N torque [N·m] 80 Peak run range Continuous run range 0 200 rotational speed [r/min]
	200 W	MHMD022 1N torque [N·m] 8.0 Peak rur range 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MHMD022 2N torque [N·m] 16.0 8.0 Peak run tange Continuous run jange 0 400 800 rotational speed [r/min]	MHMD022 3N torque [N-m] 20 Peak run tange Continuous run range 0 200 400 rotational speed [r/min]	MHMD022 4N torque [N·m] 40 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
200 V	400 W	MHMD042 1N torque [N·m] 20 Peak run range 0 500 1000 rotational speed [r/min]	MHMD042 2N torque [N-m] 40 PBalk run range Continuous run yange 0 400 800 rotational speed [r/min]	MHMD042 3N torque [N·m] 60 Peak run range Continuous run range 200 400 rotational speed [r/min]	MHMD042 4N torque [N·m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MHMD082 1N torque [N·m] 40 Peak run range Continuous run range 0 500 1000 rotational speed [r/min]	MHMD082 2N torque [N·m] 80 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MHMD082 3N torque [N·m] 120 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD082 4N torque [N·m] 160 Peak run range Continuous run range 0 100 200 rotational speed [r/min]

Dotted line represents the torque at 10 % less supply voltage.

Dimensions of Motor

MSME series

[Unit: mm]



* The figure represents the dimensions with brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т
MSME01		1/5	191.5	92													
		1/5	221.5	122										67.5			
MSME01		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.5		4×4×16	2.5
WISIVILOTZIV	100	179	221.5	122	52		32	30	00	12	10	12	10			424210	2.5
MSME01	100	1/15	202	92										78			
MONEOT		1710	232	122										70			
MSME01 4N		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5
MOMEOT		20	264	122	50	30	70	70	50	10	17	20	20	<i>52</i>		ONONEE	0.0
MSME02 1N		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5
MOMEOZ		170	220.5	116	02	20	32	30		12	10	12		72.0		144410	2.0
MSME02 2N		1/9	219	79.5										89.5	3		
memzezz.v	200	170	255.5	116										00.0			
MSME02		1/15	229.5	79.5													
			266	116										100			3.5
MSME02 U 4N		1/25	229.5	79.5								M6				6×6×22	
			266	116	50	30	78	70	90	19	17	Depth 20	26	89.5	_		
MSME04□□□1N		1/5	238.5	99													
			275 238.5	135.5 99													
MSME04□□□2N		1/9	238.5	135.5													
	400		249	99													
MSME04□□□3N		1/15	285.5	135.5										100			
			264	99								M8					
MSME04□□□4N		1/25	300.5	135.5	61	40	98	90	115	24	18	Depth	35	104	5	8×7×30	4
			255.7	112.2								20 M6					
MSME082□□1N		1/5	291.7	148.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5
			270.7	112.2								20					
MSME082□□2N		1/9	306.7	148.2										97.5			
	750		283.2	112.2								M8					4
MSME082□□3N		1/15	319.2	148.2	61	40	98	90	115	115 24	24 18		35		5	8×7×30	
			283.2	112.2										110			
MSME082□□4N		1/25	319.2	148.2													

Upper column: without brake Lower column: with brake

MSMD series

(LG) LR Encoder connecter (AMP) Motor connector (AMP) Brake connector (AMP)

* The figure represents the dimensions without brake.

(Key way diffierisions)
T(Key-way depth)
□LC
4-LZ

MSMD01□□□1N	(W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т			
		1/5	191.5	92																
MONIDOTTIV		175	221.5	122										67.5						
MSMD01		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.0		4×4×16	2.5			
	100	-	221.5	122								12					2.5			
MSMD01□□□3N		1/15	202	92										78						
			232	122								M6								
MSMD01□□□4N		1/25	234	92	50	30	78	70	90	19	17	Depth	26	92		6×6×22	3.5			
			264	122								20 M5								
MSMD02□□□1N		1/5	184	79.5 116	32	20	52	50	60	12	10	Depth	18	72.5		4×4×16	2.5			
			220.5 219	79.5								12								
MSMD02□□□2N		1/9	255.5											89.5	3					
	200		229.5	79.5																
MSMD02□□□3N	1/15	1/15	266	116																
						229.5	79.5										100			
MSMD02 = 4N		1/25	266	116								M6			-	6×6×22				
MOMBOACCAN		4/5	238.5	99	50	30	78	70	90	19	17	Depth 20	26	89.5			3.5			
MSMD04		1/5	275	135.5																
MSMD04□□□2N		1/9	238.5	99																
WISWIDU4ZN	400	179	275	135.5																
MSMD04□□□3N	400	1/15	249	99										100						
			285.5	135.5																
MSMD04		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	112.2										97.5						
	750		307.7	149.2								M8					4			
MSMD082□□3N		1/15	283.2 320.2	112.2 149.2	61	40	98	90	115	24	14 18	Depth	35		5	8×7×30				
			283.2	112.2			00	30	70 115	24		20		110		J 0X/X30				
MSMD082□□4N		1/25	320.2	149.2																

Upper column: without brake Lower column: with brake

[Unit: mm]

MHMD series

Encoder connecter (AMP)

Brake connector (AMP)

Brake connector (AMP)

* The figure represents the dimensions without brake.

(Key way dimensions)

(Key way dimensions)

(Key way dimensions)

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т	
	, ,		203.5	99								M5						
MHMD021N		1/5	240	135.5	32	20	52	50	60	12	10	Depth 12	18	72.5		4×4×16	2.5	
		4 /0	238.5	99					0 90					00.5				
MHMD02 = 2N	200	1/9	275	135.5										89.5				
MHMD02 3N	200	1/15	249	99														
WITHINDUZSIN		1/13	285.5	135.5				70						100				
MHMD02		1/25	249	99						90 19	17			100	3			
WII IWIDOZ		1/25	285.5	135.5	50	30	78					M6 Depth 20	26			6×6×22	3.5	
MHMD04		1/5	258	118.5		30										ONONEL	0.0	
			294.5	155										89.5				
MHMD04□□□2N			1/9	258	118.5													
	400		294.5	155														
MHMD04□□□3N		1/15	268.5	118.5										100				
			305	155								M8						
MHMD04□□□4N		1/25	283.5	118.5	61	40	98	90	115	24	18	Depth	35	104	5	8×7×30	4	
			320	155								20						
MHMD082□□1N		1/5	270.7	127.2	50	30	78	70	90	19	17	M6 Depth	26	93.5	3	6×6×22	3.5	
			307.7	164.2								20						
MHMD082□□2N		1/9	285.7	127.2										97.5				
	750		322.7	164.2														
MHMD082□□3N		1/15	298.2	127.2	61	40	98	90	115	24	18	M8 Depth	35		5	8×7×30	4	
			335.2	164.2	01	40	98	98	90 115	110 2	24	10	20		110		5 8×/×30	4
MHMD082□□4N		1/25	298.2	127.2														
MHMD082□□4N		335.2	164.2															

Upper column: without brake

Lower column: with brake

MEMO

Model Designation

Features

- Line-up IP65 motor: 200 W to 5.0 kW
- Max speed: 5000 r/min (MSMJ, MHMJ)
- · Low inertia (MSME) to High inertia (MHME)
- 20-bit incremental encoder (1048576 pulse)
- 17-bit absolute encoder (131072 pulse).

[Please note]

Motors displayed at P.151 to P.181 are Special Order Product. Please contact us for more information.

Motor Lineup



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W) Rated speed: 3000 r/min Rated output: 200 W to 750 W

Enclosure : IP65



High inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W) Rated speed: 3000 r/min

Rated output: 200 W to 750 W Enclosure : IP65



Low inertia

Max. speed : 5000 r/min

: 4500 r/min (from 4.0 kW)

Rated speed: 3000 r/min Rated output: 1.0 kW to 5.0 kW

Enclosure : IP65

Middle capacity



Middle inertia

Max. speed : 3000 r/min Rated speed: 2000 r/min

Rated output: IP65 1.0 kW to 5.0 kW

Enclosure : IP65



MGMF (Low speed/ High torque type)

High inertia Max. speed : 2000 r/min Rated speed: 1000 r/min

Rated output: IP65 0.9 kW to 3.0 kW

Enclosure : IP65



MHME High inertia

Max. speed : 3000 r/min Rated speed: 2000 r/min

<Cautions> Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Rated output: IP65 1.0 kW to 5.0 kW Enclosure : IP65

Special Order Product

200 W to 750 W.....

1.0 kW to 5.0 kW P.158

MDME (200 V)

1.0 kW to 5.0 kW P.164

MGME (200 V)

0.9 kW to 3.0 kW P.170

MHMJ (200 V)

1.0 kW to 5.0 kW P.176

Motor Contents

MSMJ (200 V)

MSME (200 V)

200 W to 750 W P.173

MHME (200 V)

* For combination of elements of model number, refer to Index.

Servo Motor

Symbol

MSMJ

MSMF

MDMF

MGMF

MHMJ

Special specifications MSMJ, MHMJ Type **Special specifications** Low inertia (200 W to 750 W) MSME, MDME, MGME, MHME Low inertia (1.0 kW to 5.0 kW) M: Special Order Product Middle inertia (1.0 kW to 5.0 kW) High inertia (0.9 kW to 3.0 kW) **Motor specifications** High inertia (200 W to 750 W) MSMJ, MHMJ

Motor rated output

MHME High inertia (1.0 kW to 5.0 kW)

Symbol	Rated output
02	200 W
04	400 W
08	750 W
09	0.9 kW
10	1.0 kW
15	1.5 kW
20	2.0 kW
30	3.0 kW
40	4.0 kW
50	5.0 kW

2: 200 V

Voltage specifications

M S M E 5 0 2 G C C M *

Rotary encoder specifications

	от прост			
Symbol	Format	Pulse counts	Resolution	Wires
G	Incremental	20-bit	1048576	5
S	Absolute	17-bit	131072	7

^{*} S: can be used in incremental.

<Cautions>

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Symbol	Round	Key-way, center tap	without	with	without	with
Α	•		•		•	
В	•			•	•	
С	•		•			•
D	•			•		•
S		•	•		•	
Т		•		•	•	
U		•	•			•
V		•		•		•

Holding brake

Oil seal

MSME, MDME, MGME, MHME

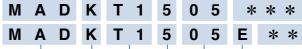
Sh	aft	Holding	g brake	Oil seal		
Round	Key-way	without	with	without	with	
•		•			•	
•			•		•	
	•	•			•	
	•		•		•	
		Shaft Round Key-way	Round Key-way without	Round Key-way without with	Round Key-way without with without	

Design order

•	
Symbol	Specifications
С	IP65 motor (MSME, MDME, MGME, MHME)
1	IP65 motor (MSMJ, MHMJ)

Servo Driver

Speed, Position, Torque, Full-closed type Position control type



Special specifications

- Only position control

Frame symbol * Symbol Frame

Symbol	riaille
MAD	Frame A
MBD	Frame B
MCD	Frame C
MDD	Frame D
MED	Frame E
MFD	Frame F

ciics		
ymbol	Velocity, Position, Torque, Full-Closed type	Position control type
K	A5 II series	A5 I E series

Supply voltage specifications

Symbol	Specifications
3	3-phase, 200 V
5	Single/3-phase, 200 V

Power device Max. current rating Symbol Current rating

Cyllibol	Ourient rating
T1	10 A
T2	15 A
T3	30 A
T5	50 A
T7	75 A
TA	100 A
TB	150 A

Current detector current rating Symbol Specifications

Special specifications

07	7.5 A
10	10 A
20	20 A
30	30 A
40	40 A
64	64 A
90	90 A
A2	120 A

A5 Family Special Order Product 0.2 kW to 5.0 kW

Table of Part Numbers and Options:

			Motor	•			Driver		Power			Opt	ional parts					
		_		5	Rating/	A5II series Part No.	A5IIE series Part No.		capacity	Encode	r Cable	Мо	tor Cable	Brake Cable	External	Reactor	Noise Filter	
M	otor series	Power supply	Output (W)	Part No. Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type)	(Position control type) Note) 2	Frame	rated load (kVA)	20-bit Incremental Note) 3	17-bit Absolute Note) 2,3,7	withou Brake Note) (Brake	Note) 3	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase	
	MSMJ		200	MSMJ022 □ 1 *	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5							DV0P227 DV0P220	DV0P4170	
	(Leadwire) type		400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	MFECA 0**0EAM	MFECA 0**0EAE		MFMCA **0EED	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM20042	
	3000 r/min	Single phase/	750	MSMJ082	157	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042	
Low		3-phase 200 V	1000	MSME102 □ C * M	158	MDDKT5540	MDDKT5540E		Approx. 1.8							DV0P228 DV0P222		
w inertia			1500	MSME152 □ C * M	159	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3	_		MFMC 0**2EC			DV0P4284	DV0PM20047 DV0P222	DV0P4220	
<u>v</u> .	MSME 3000 r/min		2000	MSME202 □ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3					_	DV0P4285 Note) 5	DV0P222 DV0P223	DV0PM20043	
	3000 17111111	3-phase	3000	MSME302 □ C * M	161	MFDKTA390	MFDKTA390E		Approx. 4.5						,	DV0P224		
		200 V	4000	MSME402 □ C * M	162	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMC 0**3EC			DV0P4285 ×2 in parallel	DV0P225	DV0P3410	
			5000	MSME502 □ C * M	163	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5	-		0 020	0 0101		AZ III paralioi	Note) 6		
		Single phase/	1000	MDME102 □ C * M	164	MDDKT3530	MDDKT3530E		Approx. 1.8	-					D. John John	DV0P228 DV0P222	D. /oD /ooo	
Middle		3-phase 200 V	1500	MDME152 □ C * M	165	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMC 0**2EC			DV0P4284	DV0PM20047 DV0P222	DV0P4220	
<u> </u>	MDME		2000	MDME202 □ C * M	166	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	-					DV0P4285 Note) 5	DV0P223	DV0PM20043	
inertia	2000 r/min		3000	MDME302 □ C * M	167	MFDKTA390	MFDKTA390E		Approx. 4.5	-					11010) 0	DV0P224		
		3-phase 200 V	4000	MDME402 □ C * M	168	MFDKTB3A2	MFDKTB3A2E	F-frame	F-frame Appro	Approx. 6	-		MFMC 0**3EC		_	DV0P4285 ×2 in parallel	DV0P225	DV0P3410
			5000	MDME502 □ C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5			0 323	0 0.0.			Note) 6		
	MGME Low speed/\ High torque	Single phase/ 3-phase 200 V	900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E	D-frame	Approx. 1.8			MFMC 0**2EC			DV0P4284	DV0P228 DV0P221	DV0P4220	
	type	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	Е.	Approx. 3.8			MFMC	A MFMCA		DV0P4285	DV0P223	D\/0D0440	
	1000 r/min	200 V	3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 4.5			0**3EC	T 0**3FCT		×2 in parallel	DV0P224	DV0P3410	
	MHMJ		200	MHMJ022	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MEEON	MEEOA		451404	MEMOR		DV0P227 DV0P220	DV0P4170	
	(Leadwire) type	Cinalo	400	MHMJ042 □ 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0.9 0**0EAM	MFECA 0**0EAE		MFMCA **0EED	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM20042	
High in	3000 r/min	Single phase/	750	MHMJ082	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM20042	
inertia		3-phase 200 V	1000	MHME102 □ C * M	176	MDDKT3530	MDDKT3530E		Approx. 1.8			MFMC	D MFMCA		D. / D. / D. /	DV0P228 DV0P222	D. /oD /ooo	
			1500	MHME152 □ C * M	177	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3			0**2EC			DV0P4284	DV0PM20047	DV0P4220	
	MHME		2000	MHME202 □ C * M	178	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMC 0**2EC			DV0P4285 Note) 5	DV0P222 DV0P223	DV0PM20043	
	2000 r/min		3000	MHME302 □ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5	0 0E9D	U UESE	0 200	5 0 21 OL		140.07.0	DV0P224		
		3-phase 200 V	4000	MHME402 □ C * M		MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 6			MFMC 0**3EC			DV0P4285 ×2 in parallel	DV0P225	DV0P3410	
			5000	MHME502 \square C * M	181	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5							Note) 6		

Note) 1 Rotary encoder specifications: ☐ Motor specification: * (refer to P.152)

Note) 7 Please note that a battery is not supplied together with 17 absolute encoder cable (with battery box).

Please buy the battery part number "DV0P2990" separately.

	Title		Part No.	Pa		
Interface Cable			DV0P4360			
			DV0P4120			
			DV0P4121	ł		
ntarface Convo	roion Cobl	•	DV0P4121 DV0P4130			
nterface Conve	rsion Cabi	е		197		
			DV0P4131			
			DV0P4132	L		
Connector Kit	A-frame to	Single row type	DV0PM20032			
Supply Input Connection	D-frame	Double row type	DV0PM20033	2		
	E-frame		DV0PM20044			
Connector Kit	A-frame t	to D-frame	DV0PM20034			
for Motor Connection	E-frame		DV0PM20046	_		
Connector Kit for Regenerative Resistor	E-frame		DV0PM20045	2		
			DV0P4290	2		
			DV0P4310	T.		
Connector Kit fo	r		DV0P4320	2		
Motor/Encoder (า	DV0P4330	t		
			DV0P4340	2		
			DV0F4340 DV0P4380	202		
	DC40E E	2000	DV0P4380 DV0PM20024	4		
	RS485, F	15232		١.		
	Safety		DV0PM20025	1		
Connector Kit	Interface		DV0P4350	L		
	External S	Scale	DV0PM20026			
	Encoder		DV0PM20010	19		
	Analog M	onitor Signal	DV0PM20031			
Battery For Abso	olute Enco	der	DV0P2990	Ι,		
Battery Box Not	te) 7		DV0P4430	2		
-	A-frame		DV0PM20027	T		
Mounting	B-frame		DV0PM20028	1		
Bracket	C-frame		DV0PM20029	20		
	D-frame		DV0PM20030	ł		
	D-lialile			H		
	5	5	MFECA0**0EAD	188		
	without B	attery Box	MFECA0**0EAM	H		
Encoder Cable			MFECA0**0ESD	1		
	with Batte	ery Box	MFECA0**0EAE	ŀ		
	Note) 7		MFECA0**0ESE	1		
			MFMCA0**0EED	1		
	with a t D	roko	MFMCD0**2ECD			
Matar Osti	without B	orake	MFMCE0**2ECD	1		
Motor Cable			MFMCA0**3ECT			
			MFMCA0**2FCD	1		
	with Brak	e	MFMCA0**3FCT	-		
Brake Cable			MFMCB0**0GET	1		
uno ouble	A-frame		WODO OULT	ľ		
			DV0D4000			
External	B-frame		DV0P4283			
Regenerative	C-frame			2		
Resistor	D-frame		DV0P4284	ľ		
	E-frame		DV0P4285			
	F-frame			L		
Reactor	DV0P223), DV0P221, 3, DV0P224, 7, DV0P228,		2		
	DV0P417	70, DV0PM2	0042	2		
		20, DV0PM2	0043	L		
Noise Filter	D1/0D04	10		2		
Noise Filter	DV0P341			1.7		
	Single ph	nase	DV0P4190	,		
Noise Filter Surge Absorber		iase	DV0P4190 DV0P1450	2		

<Cautions> Please avoid the motor, or equipment containing the motor

Note) 2 Because A5IE series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

Note) 3 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m), (Example. 3 m: MFECA0030EAM)

Note) 4 When you use a 17-bit absolute encoder as an incremental encoder, please use the encoder cable MFECA0**0EAD.

Note) 5 Other combinations exist, and refer to P.210 for details.

Note) 6 Reactor should be prepared by the user.

Cautions Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

			AC2	00 V	
Motor model		IP65	MSMJ022G1□	MSMJ022S1□	
*1		IP67	_	_	
Ammliaalala	Model	A5I series	MADK	T1507	
Applicable driver *2	No.	A5IE series	MADKT1507E	_	
unvoi	Fr	ame symbol	A-fra	ame	
Power supply	capacit	y (kVA)	0.	.5	
Rated output		(W)	20	00	
Rated torque		(N·m)	0.0	64	
Momentary M	ax. peal	k torque (N·m)	1.91		
Rated current		(A(rms))	1.6		
Max. current		(A(o-p))	6.9		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	0.14		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.16		
Recommende ratio of the loa			30 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

• Permissible load (For details, refer to P.183)

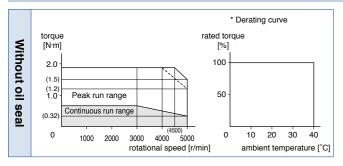
During assembly During	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
	Thrust load B-direction (N)	196
	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

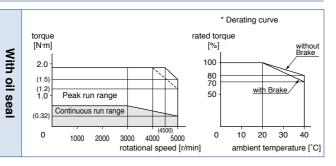
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MSMJ 200 W [Low inertia, Small capacity]

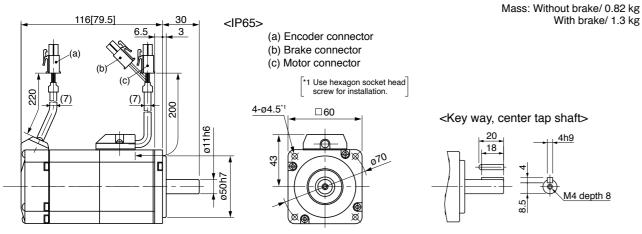
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Special Order Product

Specifications

				AC200 V			
Matamaaalal		IP65		MSMJ042G1□	MSMJ042S1□		
Motor mod	*1		IP67		-	-	
		Model	A5II series	S	MBDK	T2510	
Applicable driver	*2	No.	A5IIE series		MBDKT2510E	-	
unven		Fr	ame sym	bol	B-fra	ame	
Power sup	ply	capacity	y	(kVA)	0	.9	
Rated outp	out			(W)	40	00	
Rated torq	ue			(N·m)	1.	.3	
Momentary	у Ма	ax. peal	k torque	(N·m)	3	3.8	
Rated curr	ent		(.	A(rms))	2.6		
Max. curre	nt		((A(o-p))	11.0		
Regenerati	ve b	rake	Without	option	No limi	t Note)2	
frequency (ti	imes/n	nin) Note)1	DV0P4283		No limit Note)2		
Rated rotal	tion	al spee	d	(r/min)	3000		
Max. rotati	ona	l speed		(r/min)	5000		
Moment of	ine	rtia	Without brake		0.26		
of rotor (×1	0-4	kg·m²)	With brake		0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less				
Rotary end	ode	r speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per si			le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

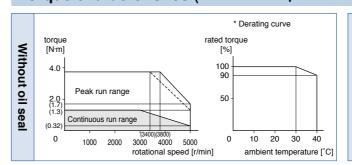
	•
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

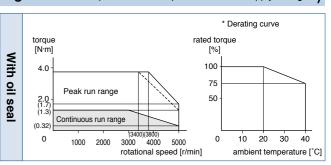
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
accombiy	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

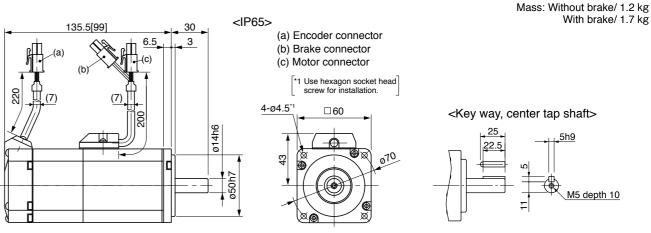
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MSMJ 750 W [Low inertia, Small capacity]

Please contact us for more information.

Specifications

			AC2	00 V	
IP65			MSMJ082G1□	MSMJ082S1□	
Motor model *1		IP67	_	-	
A	Model	A5II series	MCDK	T3520	
Applicable *2	No.	A5IIE series	MCDKT3520E	-	
unver	Fı	ame symbol	C-fr	ame	
Power supply	capacit	y (kVA)	1	.3	
Rated output		(W)	75	50	
Rated torque		(N·m)	2	.4	
Momentary M	ax. pea	k torque (N·m)	7.1		
Rated current		(A(rms))	4.0		
Max. current		(A(o-p))	17.0		
Regenerative b	rake	Without option	No limi	t Note)2	
frequency (times/	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	4500		
Moment of ine	rtia	Without brake	0.87		
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.97		
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encode	Rotary encoder specifications Note)5			17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

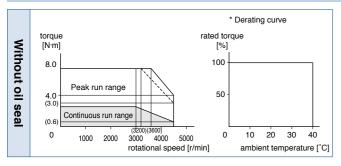
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

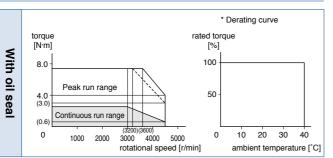
• Permissible load (For details, refer to P.183)

	During assembly	Radial load P-direction (N)	686
		Thrust load A-direction (N)	294
۳		Thrust load B-direction (N)	392
D	During operation	Radial load P-direction (N)	392
0		Thrust load A, B-direction (N)	147

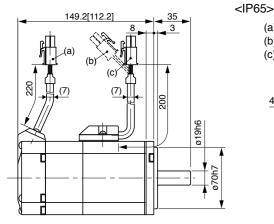
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



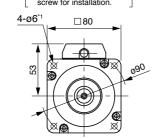


Dimensions



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector
- 1 Use hexagon socket head



<Key way, center tap shaft>

Mass: Without brake/ 2.3 kg

With brake/ 3.1 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Special Order Product

200 V MSME 1.0 kW [Low inertia, Middle capacity]

A5 Family

Motor Specifications Please contact us for more information

Specifications

				AC200 V		
Mataumandal		IP65		MSME102GC□M	MSME102SC□M	
Motor mode	€I ∗1		IP67		-	-
		Model	A5II series	s	MDDK	T5540
Applicable driver	*2	No.	A5IIE ser	ies	MDDKT5540E	_
unvoi		Fr	ame sym	bol	D-fr	ame
Power supp	oly c	apacit	y	(kVA)	1	.8
Rated outp	ut			(W)	10	00
Rated torqu	ıe			(N·m)	3.	18
Momentary	Ма	x. peal	torque	(N·m)	9.55	
Rated curre	ent		(A(rms))	6.6	
Max. currer	nt		((A(o-p))	28	
Regenerativ	e br	ake	Without option		No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0P4284		No limit Note)2	
Rated rotat	iona	l spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	5000	
Moment of	iner	tia	Without brake		2.03	
of rotor (×1	0 ⁻⁴ k	(g·m²)	With brake		2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less			
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
Resolutio			n per sina	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

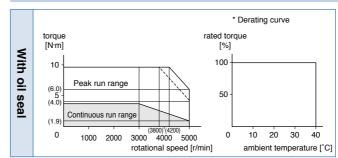
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

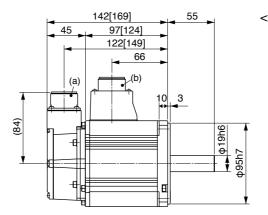
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
doscinory	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



<IP65> **100**

With brake/ 4.5 kg Key way dimensions

Mass: Without brake/ 3.5 kg

(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

				AC2	AC200 V	
IP65				MSME152GC□M	MSME152SC□M	
Motor model *1		IP67		-	_	
A Un a la la	Model	A5II series	:	MDDK	T5540	
Applicable driver *2	No.	A5IIE series		MDDKT5540E	-	
unven	Fr	ame symb	ool	D-fr	ame	
Power supply	capacit	y	(kVA)	2	.3	
Rated output			(W)	15	00	
Rated torque			(N·m)	4.	77	
Momentary M	ax. peal	k torque	(N·m)	14.3		
Rated current		(/	A(rms))	8.2		
Max. current		(.	A(o-p))	35		
Regenerative I	orake	Without	option	No limi	t Note)2	
frequency (times	min) Note)1	DV0P4	1284	No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotationa	al speed		(r/min)	5000		
Moment of ine	ertia	Without	brake	2.84		
of rotor (×10 ⁻²	kg·m²)	With b	rake	3.17		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
F	Resolutio	n per singl	e turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

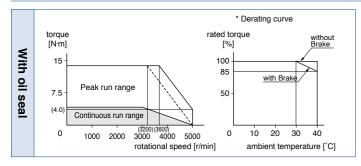
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

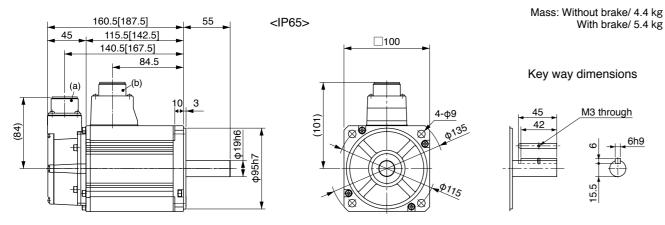
200 V MSME 1.5 kW [Low inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Special Order Product

Please contact us for more information

Specifications

				AC200 V		
		IP65		MSME202GC□M	MSME202SC	
Motor mod	*1		IP67		-	-
A I' l. l .	М	odel	A5II series	S	MEDKT7364	
Applicable driver	*2 N	0.	A5IIE ser	ies	MEDKT7364E	-
unver		Fr	ame sym	bol	E-fr	ame
Power sup	ply cap	oacit	y	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ue			(N·m)	6.:	37
Momentary	/ Max.	peal	k torque	(N·m)	19.1	
Rated curre	ent		(.	A(rms))	11.3	
Max. curre	nt		((A(o-p))	48	
Regenerativ	ve brak	е	Without	option	No limit Note)2	
frequency (ti			DV0P4285 No limit		t Note)2	
Rated rotat	tional	spee	d	(r/min)	3000	
Max. rotation	onal s	peed		(r/min)	5000	
Moment of	inertia	ì	Without	brake	3.68	
of rotor (x1	0 ⁻⁴ kg	·m²)	With b	rake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times or less				
Rotary enc	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution pe		n per sina	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

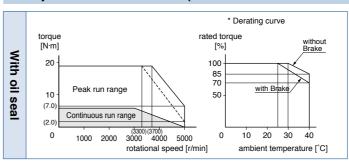
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

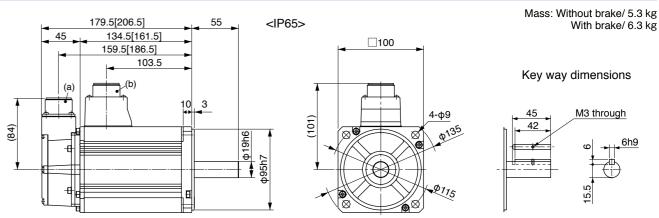
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During	Radial load P-direction (N)	490
	operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Motor Specifications

200 V MSME 3.0 kW [Low inertia, Middle capacity]

Please contact us for more information.

Specifications

			AC2	00 V
Motor model		IP65	MSME302GC□M	MSME302SC□M
*1		IP67	-	-
A 15 1-1	Model	A5I series	MFDKTA390	
Applicable driver *2	No.	A5IIE series	MFDKTA390E	_
divei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	9.	55
Momentary Ma	ax. peal	k torque (N·m)	28.6	
Rated current	Rated current (A(rms))		18.1	
Max. current (A(o-p))		77		
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/r	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	5000	
Moment of ine	rtia	Without brake	6.50	
of rotor (×10 ⁻⁴	kg·m²)	With brake	7.85	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

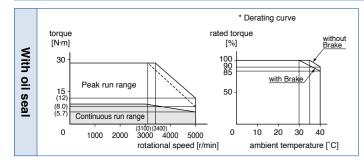
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

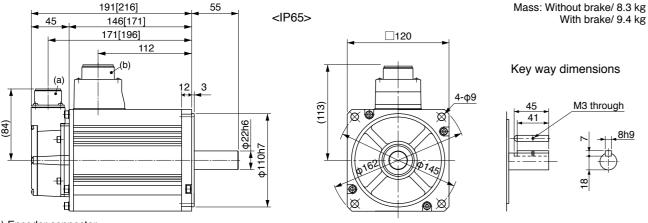
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

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Special Order Product

A5 Family

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V	
		IP65		MSME402GC□M	MSME402SC⊡I
Motor mode	:1	IP67		-	-
A	Model	odel A5II series		MFDK	TB3A2
Applicable driver *	No.	A5IIE ser	ies	MFDKTB3A2E	_
unvoi	Fr	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	6	.0
Rated outpu	ut		(W)	40	00
Rated torqu	е		(N·m)	12	2.7
Momentary	Max. peal	k torque	(N·m)	38.2	
Rated curre	nt	(A(rms))	19.6	
Max. current (A(o-p))			8	3	
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotati	onal spee	d	(r/min)	3000	
Max. rotatio	nal speed		(r/min)	4500	
Moment of i	inertia	Without brake		12.9	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per sing		le turn	1048576	131072	

200 V MSME 4.0 kW [Low inertia, Middle capacity]

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

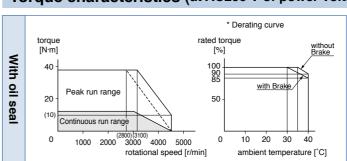
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

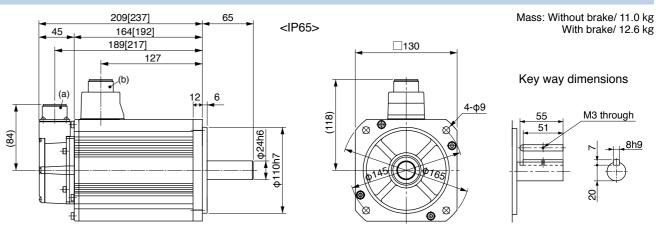
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
document	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Please contact us for more information

Specifications

			AC2	00 V
M-4		IP65	MSME502GC□M	MSME502SC□M
Motor model *1		IP67	-	-
A li l- l	Model	A5II series	MFDKTB3A2	
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	_
anver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	7.	.5
Rated output		(W)	50	00
Rated torque		(N·m)	15	5.9
Momentary Ma	ax. peal	k torque (N·m)	47.7	
Rated current (A(rms))		24.0		
Max. current		(A(o-p))	102	
Regenerative b	rake	Without option	357	
frequency (times/	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	17.4	
of rotor (×10 ⁻⁴	kg·m²)	With brake	18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

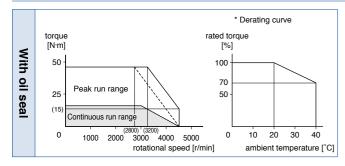
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

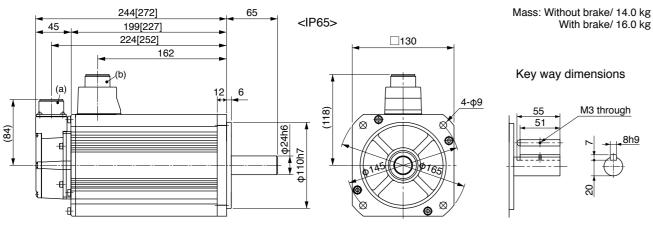
200 V MSME 5.0 kW [Low inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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200 V MDME 1.0 kW [Middle inertia, Middle capacity]

Specifications

				AC2	00 V	
		IP65		MDME102GC□M	MDME102SC M	
Motor mod	€I *1		IP67		-	-
Annlinable		Model	A5II series	5	MDDK	T3530
Applicable driver	*2	No.	A5IIE seri	es	MDDKT3530E	-
anvoi		Fr	ame syml	bol	D-fr	ame
Power supp	ply o	capacity	y	(kVA)	1.	.8
Rated outp	ut			(W)	10	00
Rated torqu	ue			(N·m)	4.	77
Momentary	/ Ma	x. peal	torque	(N·m)	14.3	
Rated current (A(rms))			5.7			
Max. current (A(o-p))			24			
Regenerativ	ve b	rake	Without	option	No limit Note)2	
frequency (tir	mes/m	nin) Note)1	DV0P4284		No limit Note)2	
Rated rotat	tiona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	ine	rtia	Without	brake	4.60	
of rotor (×1	0-4	kg·m²)	With b	rake	5.90	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
Resolution per single turn			le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

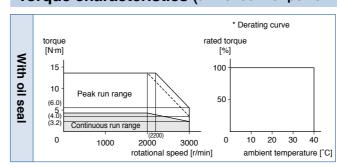
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

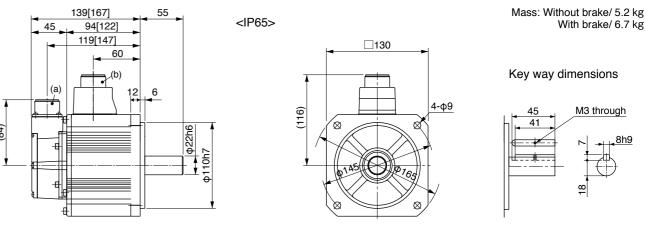
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

			AC200 V		
			MDME152GC□M	MDME152SC□M	
Motor model *1		IP67	-	-	
Amaliaalala	Model	A5I series	MDDKT5540		
Applicable driver *2	No.	A5IIE series	MDDKT5540E	_	
anvoi	Fr	ame symbol	D-fra	ame	
Power supply	capacit	y (kVA)	2.	.3	
Rated output		(W)	15	00	
Rated torque		(N·m)	7.	16	
Momentary Ma	ax. peal	k torque (N·m)	21.5		
Rated current		(A(rms))	9.4		
Max. current		(A(o-p))	40		
Regenerative b	rake	Without option	No limi	No limit Note)2	
frequency (times/r	nin) Note)1	DV0P4284	No limit Note)2		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	6.70		
of rotor (×10 ⁻⁴	kg·m²)	With brake	7.99		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	r speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

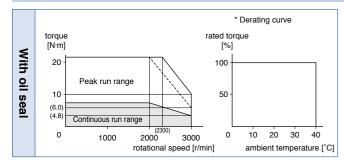
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

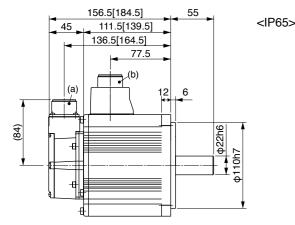
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



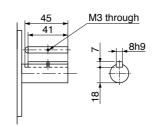
Dimensions



□130 (116)

Mass: Without brake/ 6.7 kg With brake/ 8.2 kg

Key way dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

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Specifications

			AC2	00 V		
		IP65		MDME202GC□M	MDME202SC N	
Motor mode	θΙ ∗1		IP67		-	-
A I' l. l .		Model	A5II serie	S	MEDK	T7364
Applicable driver	*2	No.	A5IIE ser	ies	MEDKT7364E	_
anvoi		Fr	ame sym	bol	E-fra	ame
Power supp	oly (capacity	y	(kVA)	3	.3
Rated outp	ut			(W)	20	00
Rated torqu	ıe			(N·m)	9.	55
Momentary	Ма	x. peal	k torque	(N·m)	28.6	
Rated curre	ent		(A(rms))	11.5	
Max. currer	nt		((A(o-p))	49	
Regenerativ	/e b	rake	Without option		No limit Note)2	
frequency (tin	nes/n	nin) Note)1	DV0P4285		No limit Note)2	
Rated rotat	iona	al spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	ine	rtia	Without	brake	8.72	
of rotor (×1	0-4	kg·m²)	With b	rake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encoder specifications No.		Note)5	20-bit Incremental	17-bit Absolute		
		n per sing	le turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

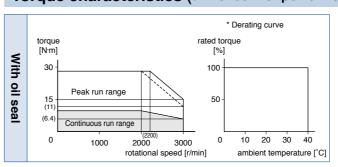
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

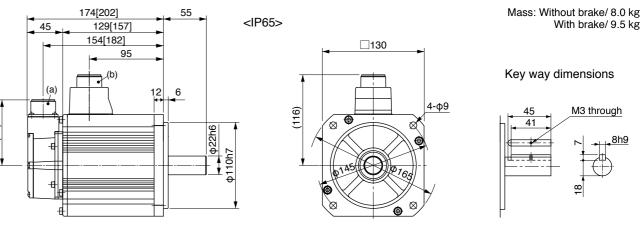
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

With brake/ 9.5 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Motor Specifications

Specifications

			AC200 V	
		IP65	MDME302GC□M	MDME302SC□M
Motor model *1		IP67	_	-
A !! !- ! -	Model	A5II series	MFDK	TA390
Applicable driver *2	No.	A5IE series	MFDKTA390E	-
anver	Fr	ame symbol	F-fra	ame
Power supply	capacity	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	.3
Momentary Ma	ax. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	17.4	
Max. current		(A(o-p))	74	
Regenerative b	rake	Without option	No limi	t Note)2
frequency (times/i	min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	12.9	
of rotor (×10 ⁻⁴	kg·m²)	With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

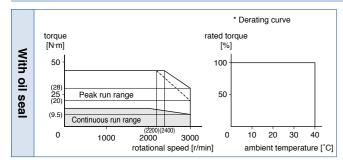
1	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

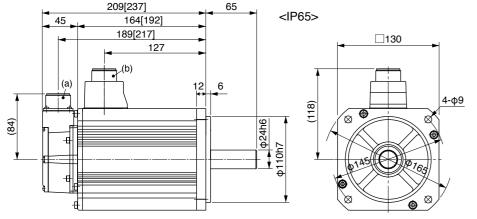
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

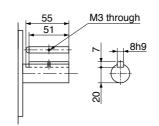


Dimensions



Mass: Without brake/ 11.0 kg With brake/ 12.6 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Special Order Product

Please contact us for more information

Specifications

					AC2	00 V
Motor model		IP65		MDME402GC□M	MDME402SC□N	
	*1		IP67		-	-
		Model	A5II serie	S	MFDK	TB3A2
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	_
unven		Fr	ame sym	bol	F-fra	ame
Power supp	oly c	apacit	y	(kVA)	6	.0
Rated outp	ut			(W)	40	00
Rated torqu	ıe			(N·m)	19).1
Momentary	Ма	x. peal	torque	(N·m)	57.3	
Rated curre	ent		(A(rms))	21.0	
Max. current (A(o-p))			89			
Regenerativ	e br	ake	Without	option	No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0P4	DV0P4285×2 No limit Note		it Note)2
Rated rotat	iona	l spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without	brake	37.6	
of rotor (×1	0 ⁻⁴ ł	(g·m²)	With b	orake	38.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute		
Resolutio			n per sino	le turn	1048576	131072

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.\ Do not use this for braking the motor in motion.

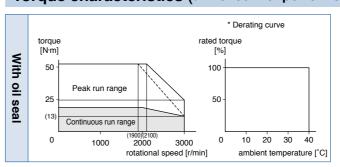
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

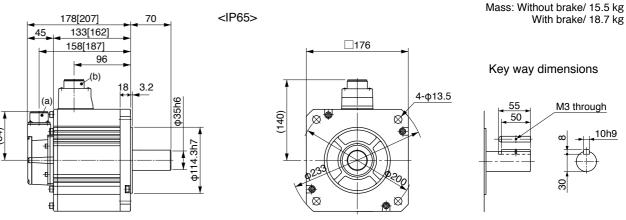
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Special Order Product

200 V MGME 0.9 kW [Middle inertia, Middle capacity]

A5 Family

Motor Specifications

Please contact us for more information

Specifications

			AC2	00 V
		IP65	P65 MDME502GC M MDME50	
Motor model *1		IP67	_	_
A U a a la la	Model	A5II series	MFDK	TB3A2
Applicable driver *2	No.	A5IE series	MFDKTB3A2E	-
unven	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	7	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23	3.9
Momentary M	lax. peal	k torque (N·m)	71.6	
Rated current	:	(A(rms))	25.9	
Max. current		(A(o-p))	110	
Regenerative	brake	Without option	120	
frequency (times	/min) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	nal spee	d (r/min)	2000	
Max. rotationa	al speed	(r/min)	3000	
Moment of ine	ertia	Without brake	48.0	
of rotor (×10 ⁻⁴	¹ kg·m²)	With brake	48.8	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encod	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
F	Resolutio	n per single turn	1048576	131072

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized.)
 Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

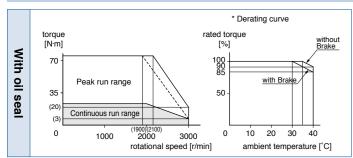
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

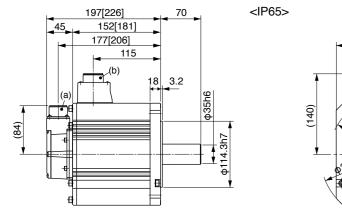
200 V MDME 5.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



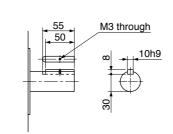
Dimensions



Mass: Without brake/ 18.6 kg With brake/ 21.8 kg

4-φ13.5

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm] (b)

Cautions> Reduce the moment of inertia ratio if high speed response operation is required.
Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Specifications

				AC2	00 V	
Mataumandal		IP65		MGME092GC□M	MGME092SC□M	
Motor mode	∌I ⊧1		IP67		_	_
A I' l. l .		Model	A5II serie	s	MDDK	T5540
Applicable driver	⊧2	No.	A5IIE ser	ies	MDDKT5540E	_
anvoi		Fr	ame sym	bol	D-fr	ame
Power supp	oly c	apacity	/	(kVA)	1	.8
Rated outp	ut			(W)	90	00
Rated torqu	ıe			(N·m)	8.	59
Momentary	Ма	x. peal	torque	(N·m)	19.3	
Rated curre	ent		(A(rms))	7.6	
Max. current (A(o-p))			2	24		
Regenerativ	e br	ake	Without	option	No lim	it Note)2
frequency (tin	nes/m	in) Note)1	DV0P4284		No limit Note)2	
Rated rotat	iona	l spee	d	(r/min)	1000	
Max. rotation	nal	speed		(r/min)	2000	
Moment of	iner	tia	Without brake		6.70	
of rotor (×1	0 ⁻⁴ k	(g·m²)	With brake		7.99	
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			le turn	1048576	131072

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

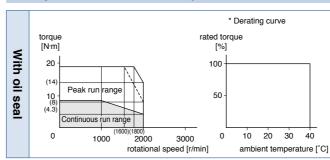
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

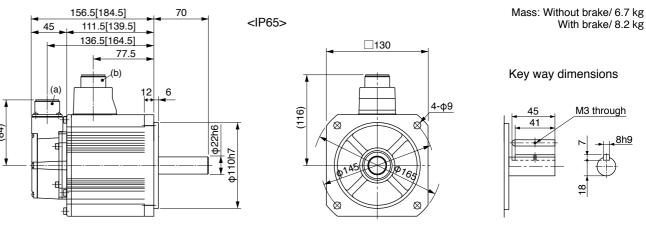
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	686
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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E Series

Information

Specifications

оросиис.		9		
			AC2	00 V
Motor model		IP65	MGME202GC□M	MGME202SC□M
*1		IP67	-	-
Amalianda	Model	A5II series	MFDK	TA390
Applicable driver *2	No.	A5IIE series	MFDKTA390E	-
unver	Fı	rame symbol	F-fra	ame
Power supply	capacit	y (kVA)	3	.8
Rated output		(W)	20	00
Rated torque		(N·m)	19.1	
Momentary Ma	ax. pea	k torque (N·m)	47.7	
Rated current	Rated current (A(rms))		17.0	
Max. current	urrent (A(o-p))		60	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	30.3	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	31.4	
Recommender ratio of the loa			10 times or less	
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute

1048576

• Brake specifications (For details, refer to P.183) /This brake will be released when it is energized.) Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

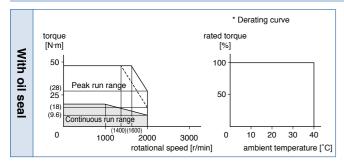
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

200 V MGME 2.0 kW [Middle inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

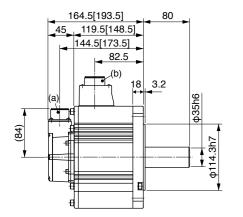
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

131072



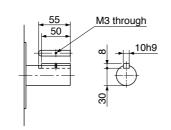
Resolution per single turn

Dimensions



<IP65> 4-φ13.5 Mass: Without brake/ 14.0 kg With brake/ 17.5 kg

Key way dimensions



(a) Encoder connector

<Cautions>

- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Special Order Product

Specifications

			AC2	00 V	
Matauaradal		IP65		MGME302GC□M	MGME302SC□N
Motor model		IP67		-	_
A	Model	Model A5II series		MFDK'	ГВЗА2
Applicable driver *2	No.	A5IIE ser	ies	MFDKTB3A2E	_
divoi	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	у	(kVA)	4.	5
Rated output			(W)	30	00
Rated torque			(N·m)	28	.7
Momentary M	lax. peal	k torque	(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 rotation	nal spee	d	(r/min)	1000	
Max. rotation	al speed		(r/min)	2000	
Moment of inc	ertia	Without brake		48.4	
of rotor (×10	4 kg·m²)	With brake		49.2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encod	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn				131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

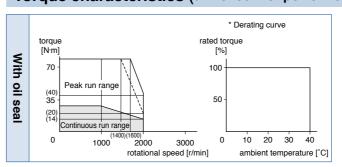
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

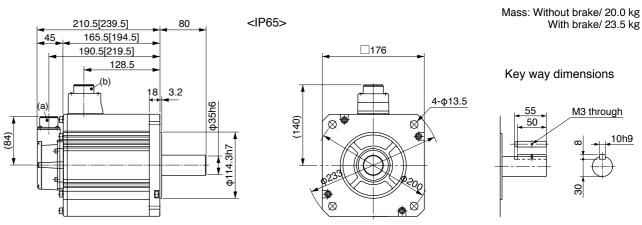
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

200 V MHMJ 400 W [High inertia, Small capacity]

Please contact us for more information

Specifications

			AC2	00 V	
		IP65	MHMJ022G1□	MHMJ022S1□	
Motor model *1		IP67	-	_	
A mmli a a la la	Model	A5I series	MADK	MADKT1507	
Applicable driver *2	No.	A5IIE series	MADKT1507E	_	
unver	Fr	ame symbol	A-fra	ame	
Power supply	capacit	y (kVA)	0	.5	
Rated output		(W)	20	00	
Rated torque		(N·m)	0.	64	
Momentary Ma	ax. peal	k torque (N·m)	1.91		
Rated current (A(rms))		1.6			
Max. current (A(o-p))		6.9			
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/	min) Note)1	DV0P4283	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	0.42		
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.45		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less			
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

Permissible load (For details, refer to P.183)

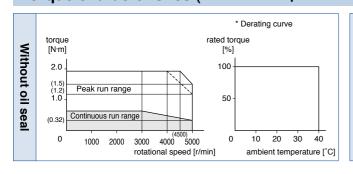
	During assembly During operation	Radial load P-direction (N)	392
		Thrust load A-direction (N)	147
		Thrust load B-direction (N)	196
		Radial load P-direction (N)	245
		Thrust load A, B-direction (N)	98

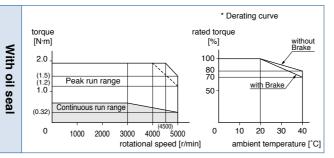
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

200 V MHMJ 200 W [High inertia, Small capacity]

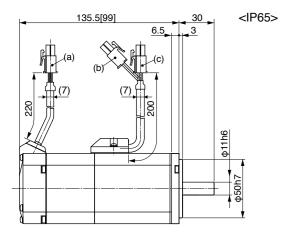
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





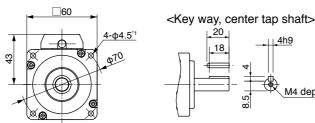
Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector



* Figures in [] represent the dimensions without brake.

[Unit: mm]

Mass: Without brake/ 0.96 kg

With brake/ 1.4 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Specifications

Special Order Product

			AC200 V		
Motor model		IP65		MHMJ042G1□	MHMJ042S1
*1		IP67		-	-
A	Model	Model A5II series		MBDK	T2510
Applicable driver *2	No.	A5IIE series		MBDKT2510E	_
diivoi	Fr	ame sym	bol	B-fra	ame
Power supply	y capacit	у	(kVA)	0.	.9
Rated output	t		(W)	40	00
Rated torque)		(N·m)	1.	.3
Momentary N	Max. peal	k torque	(N·m)	3.8	
Rated curren	nt	(A(rms))	2.6	
Max. current (A(o-p))		11.0			
Regenerative	brake	Without	option	No limi	t Note)2
frequency (time	s/min) Note)1	DV0P4283		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	5000	
Moment of in	ertia	Without brake		0.67	
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	0.70	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

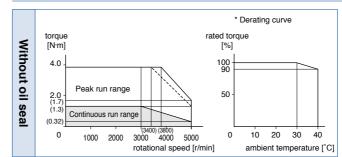
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

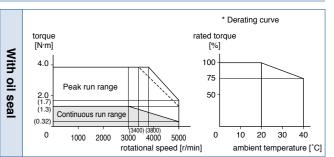
• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
docombry	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

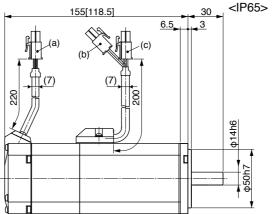
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





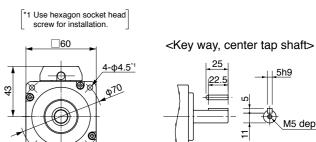
Dimensions



(a) Encoder connector

(b) Brake connector

(c) Motor connector



Mass: Without brake/ 1.4 kg

With brake/ 1.8 kg

* Figures in [] represent the dimensions without brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

			AC2	00 V	
IP65			MHMJ082G1□	MHMJ082S1	
Motor model		IP67		-	-
Amaliaalala	Model	A5 I series		MCDK	T3520
Applicable driver *2	No.	A5IIE series		MCDKT3520E	_
divoi	Fr	ame symb	ol	C-fr	ame
Power supply	capacit	y	(kVA)	1.	.3
Rated output			(W)	75	50
Rated torque			(N·m)	2	.4
Momentary M	ax. peal	k torque	(N·m)	7.1	
Rated current		(A	(rms))	4.0	
Max. current		(A	A(o-p))	17.0	
Regenerative I	orake	Without o	ption	No limi	t Note)2
frequency (times/	min) Note)1	DV0P4	283	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	4500	
Moment of ine	ertia	Without I	brake	1.51	
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	1.61	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less			
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
F	Resolution per single turn			1048576	131072

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

Please contact us for more information.

Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

Permissible load (For details, refer to P.183)

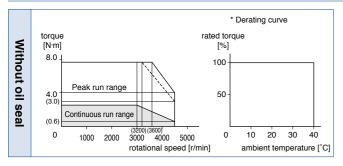
During assembly	Radial load P-direction (N)	686
	Thrust load A-direction (N)	294
documbry	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

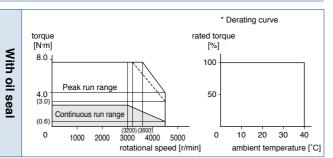
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

200 V MHMJ 750 W [High inertia, Small capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

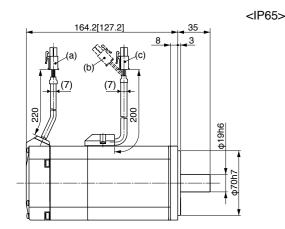
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

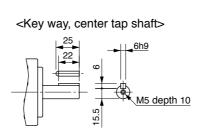
<Cautions>



(a) Encoder connector

- (b) Brake connector
- (c) Motor connector

1 Use hexagon socket head screw for installation.



Mass: Without brake/ 2.5 kg

With brake/ 3.5 kg

[Unit: mm]

* Figures in [] represent the dimensions without brake.

Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Specifications

			AC200 V				
Motor mode	, I	IP65		MHME102GC□M	MHME102SC□M		
	:1	IP67		-	-		
A 1: 1- 1 -	Model	A5II serie	s	MDDK	T3530		
Applicable driver *	No.	A5IIE ser	ies	MDDKT3530E	-		
divoi	Fi	ame sym	bol	D-fr	ame		
Power supp	ly capacit	у	(kVA)	1.	.8		
Rated outpu	ut		(W)	10	00		
Rated torqu	е		(N·m)	4.	77		
Momentary	Max. pea	k torque	(N·m)	14.3			
Rated curre	nt	(A(rms))	5.7			
Max. curren	nt		(A(o-p))	2	24		
Regenerativ	e brake	Without	option	8	83		
frequency (tim	nes/min) Note)1	DV0P4284		No limit Note)2			
Rated rotati	onal spee	d	(r/min)	2000			
Max. rotatio	nal speed		(r/min)	3000			
Moment of i	inertia	Without brake		24.7			
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		With brake		26.0			
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less				
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute				
	Resolutio	n per sing	le turn	1048576	131072		

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

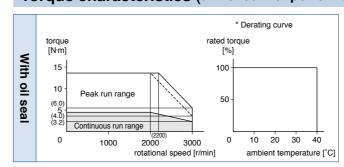
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

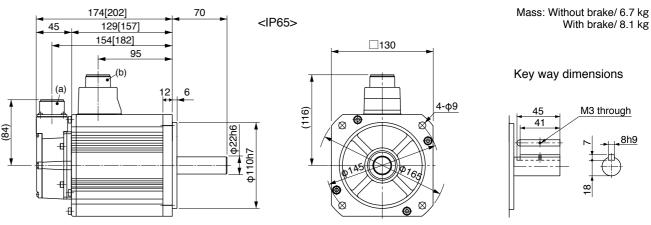
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Specifications

				AC2	00 V	
		IP65		MHME152GC□M	MHME152SC□M	
Motor model		IP67		-	-	
	Model	A5II serie	s	MDDK	CT5540	
Applicable driver *2	No.	A5IIE ser	ries	MDDKT5540E	_	
unver	Fi	ame sym	bol	D-fr	ame	
Power supply	capacit	y	(kVA)	2	.3	
Rated output			(W)	15	00	
Rated torque			(N·m)	7.	16	
Momentary M	lax. pea	k torque	(N·m)	21.5		
Rated current	t	(A(rms))	9.4		
Max. current			(A(o-p))	40		
Regenerative	brake	Without option		22		
frequency (times		DV0P4284		130		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotation	al speed		(r/min)	3000		
Moment of in	ertia	Without	t brake	37.1		
of rotor (×10	4 kg·m²)	With b	orake	38.4		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn				1048576	131072	

Brake specifications (For details, refer to P.183) (This brake will be released when it is energized.) (Do not use this for braking the motor in motion.)

Please contact us for more information.

Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

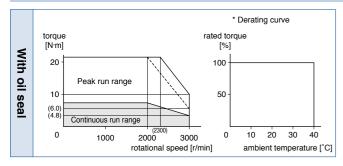
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

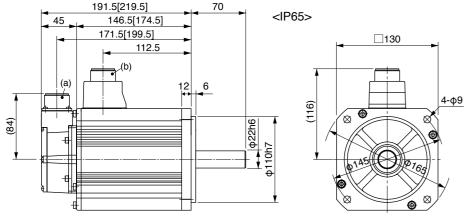
200 V MHME 1.5 kW [High inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

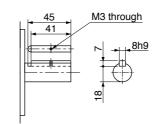


Dimensions



Mass: Without brake/ 8.6 kg With brake/ 10.1 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information. Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Special Order Product

Specifications

					AC200 V		
Motor model		IP65		MHME202GC□M	MHME202SC□M		
	*1		IP67		-	_	
A 1: 11		Model	A5II series	S	MEDK	T7364	
Applicable driver	*2	No.	A5IIE series		MEDKT7364E	_	
unvei		Fr	ame sym	bol	E-fra	ame	
Power supp	ply o	apacity	y	(kVA)	3	.3	
Rated outp	ut			(W)	20	00	
Rated torqu	ле			(N·m)	9.	55	
Momentary	и Ма	x. peal	c torque	(N·m)	28.6		
Rated curre	ent		(.	A(rms))	11.1		
Max. currer	nt		((A(o-p))	4	7	
Regenerativ	ve b	rake	Without	option	45		
frequency (tin	mes/m	in) Note)1	DV0P4285		142		
Rated rotat	iona	al spee	d	(r/min)	20	00	
Max. rotation	onal	speed		(r/min)	3000		
Moment of	iner	tia	Without brake		57.8		
of rotor (×10 $^{-4}$ kg·m 2)		kg·m²)	With brake		59.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less				
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute			
	Resolution per single turn				1048576	131072	

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

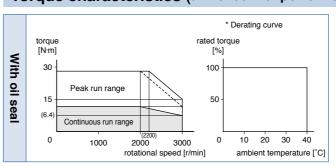
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

• Permissible load (For details, refer to P.183)

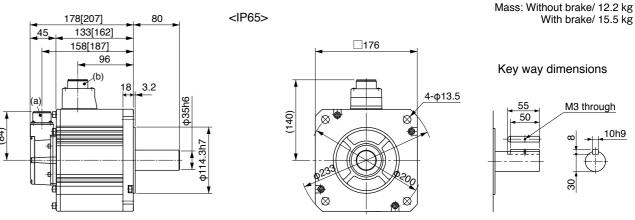
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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A5 Family

E Series

Informatio

Please contact us for more information

Specifications

			AC2	00 V
Matanasadal		IP65	MHME302GC□M	MHME302SC□M
Motor model *1		IP67	-	-
Amaliaabla	Model	A5II series	MFDKTA390	
Applicable driver *2	No.	A5IE series	MFDKTA390E	_
divei	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14.3	
Momentary Ma	ax. peal	torque (N·m)	43.0	
Rated current		(A(rms))	16.0	
Max. current	ax. current (A(o-p))		6	8
Regenerative b	rake	Without option	1	9
frequency (times/r	min) Note)1	DV0P4285×2	142	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	90.5	
of rotor (×10 ⁻⁴ kg·m²) With brake		92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	Resolution per single turn			131072

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized.)
 (Do not use this for braking the motor in motion.)

Please contact us for more information.

Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
document	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.

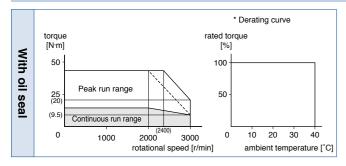
4-φ13.5

*1 Motor specifications:

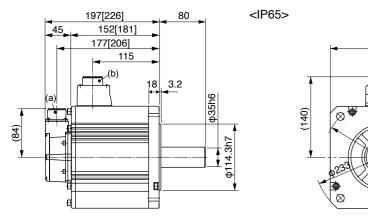
200 V MHME 3.0 kW [High inertia, Middle capacity]

*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

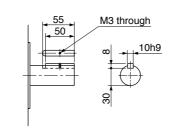


Dimensions



Mass: Without brake/ 16.0 kg With brake/ 19.2 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

Cautions> Reduce the moment of inertia ratio if high speed response operation is required.
Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

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Specifications

					AC200 V			
Mataumaad	-1	IP65			MHME402GC□M	MHME402SC□M		
Motor model			IP67		-	-		
		Model	A5II series	S	MFDK	TB3A2		
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	_		
unver		Fr	ame sym	bol	F-fr	ame		
Power sup	ply o	capacity	y	(kVA)	6	.0		
Rated outp	ut			(W)	40	00		
Rated torq	ue			(N·m)	19).1		
Momentary	/ Ma	ıx. peal	torque	(N·m)	57	7.3		
Rated curre	ent		(A(rms))	21.0			
Max. curre	nt		((A(o-p))	89			
Regenerativ	ve b	rake	Without	option	17			
frequency (ti	mes/n	nin) Note)1	DV0P4285×2		125			
Rated rotal	tiona	al spee	d	(r/min)	2000			
Max. rotation	onal	speed		(r/min)	3000			
Moment of	ine	rtia	Without	brake	112			
of rotor (×1	0-4	kg·m²)	With b	rake	114			
Recommended moment of inertia ratio of the load and the rotor Note)3					5 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute				
	Re	esolutio	n per sing	le turn	1048576	131072		

Brake specifications (For details, refer to P.183)
 (This brake will be released when it is energized. Do not use this for braking the motor in motion.

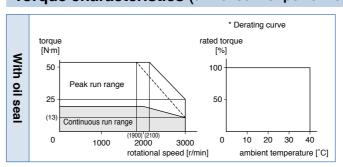
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• Permissible load (For details, refer to P.183)

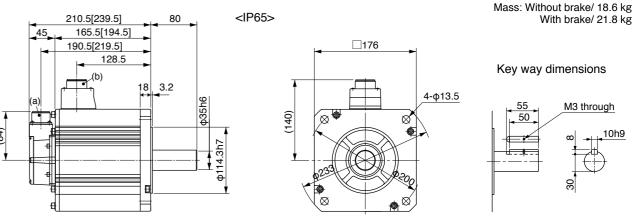
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required.

Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

Please contact us for more information.

Specifications

			AC200 V			
Motor model		IP65		MHME502GC□M	MHME502SC□M	
Motor model *1		IP67		-	-	
Applicable	Model	A5I series		MFDK	TB3A2	
Applicable driver *2	No.	A5IE series		MFDKTB3A2E	-	
divei	Fr	ame symbol		F-fra	ame	
Power supply	capacit	y (k'	/A)	7.	.5	
Rated output		(W)	50	00	
Rated torque		(N	·m)	23	3.9	
Momentary Ma	ax. peal	torque (N	·m)	71.6		
Rated current		(A(rm	ıs))	25.9		
Max. current		(A(o-	p))	110		
Regenerative b	rake	Without opti	on	10		
frequency (times/i	min) Note)1	DV0P4285>	κ2	76		
Rated rotation	al spee	d (r/m	nin)	2000		
Max. rotationa	l speed	(r/m	nin)	3000		
Moment of ine	rtia	Without bral	ке	162		
of rotor (×10 ⁻⁴	kg·m²)	With brake)	164		
Recommende ratio of the loa			5 times or less			
Rotary encode	er speci	fications No	20-bit Incremental	17-bit Absolute		
R	esolutio	n per single tu	rn	1048576	131072	

• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

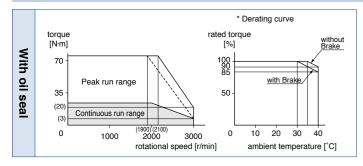
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

Permissible load (For details, refer to P.183)

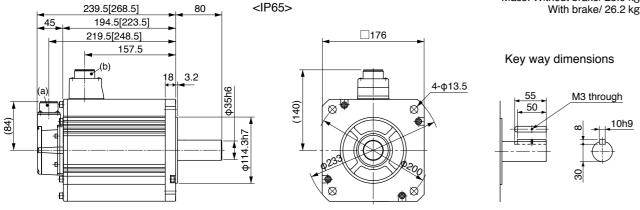
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



Dimensions



- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

Mass: Without brake/ 23.0 kg

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. Contact us or a dealer for the latest information.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan.

A5 Family

Motor Specification

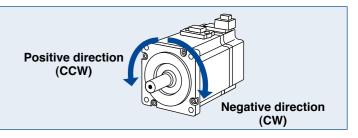
Environmental Conditions

Item		Conditions			
Ambient ter	mperature *1	0 °C to 40 °C (free from freezing)			
Ambient hu	ımidity	20 % to 85 % RH (free from condensation)			
Storage ter	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)			
		50 W to 5.0 kW : Lower than 49 m/s² (5 G) at running, 24.5 m/s² (2.5 G) at stall 6.0 kW to 15.0 kW : Lower than 24.5 m/s² (2.5 G) at running, 24.5 m/s² (2.5 G) at stall			
Impact	Motor only	Lower than 98 m/s ² (10 G)			
		MSMD, MHMD, MSMJ, MHMJ (except rotating portion of output shaft and readwire end.)			
Enclosure rating (Motor		M * ME (IP65 motor: 0.9 kW or more) (except rotating portion of output shaft and connecting pin part of the motor connector and the encoder connector)			
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)			
Alti	tude	Lower than 1000 m			

- *1 Ambient temperature to be measured at 5 cm away from the motor.
- *2 Permissible temperature for short duration such as transportation.
- *3 These motors conform to the test conditions specified in EN standards (EN60529, EN60034-5). Do not use these motors in application where water proof performance is required such as continuous wash-down operation.
- *4 This condition is applied when the connector mounting screw are tightened to the recommended tightening torque.
- *5 Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

<Note>

Initial setup of rotational direction: positive = CCW and negative = CW. Pay an extra attention.



Notes on [Motor specification] page

Note) 1. [At AC100 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC115 V (at 100 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

[At AC200 V of power voltage]

Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC230 V (at 200 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
- · When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.

A5 Family Motor Specification

[At AC400 V of power voltage]

Description

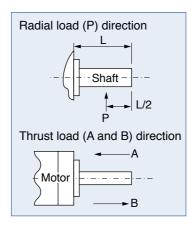
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC460 V (at 400 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/460) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
- Note) 2. If the effective torque is within the rated torque, there is no limit in generative brake.
- Note) 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
- Note) 4. Releasing time values represent the ones with DC-cutoff using a varistor.
- Note) 5. The 17-bit absolute encoder can also be used as a 17-bit incremental encoder.

Permissible Load at Output Shaft

The radial load is defined as a load applied to the output shaft in the right-angle direction. This load is generated when the gear head is coupled to the machine using a chain, belt, etc., but not when the gear head is directly connected to the coupling. As shown in the right figure, the permissible value is determined based on the load applied to the L/2 position of the output shaft. The thrust load is defined as a load applied to the output shaft in the axial direction.

Because the radial load and thrust load significantly affect the life of the bearing, take care not to allow the load during operation to exceed the permissible radial load and thrust load shown in the table below.



Built-in Holding Brake

In the applications where the motor drives the vertical axis, this brake would be used to hold and prevent the work (moving load) from falling by gravity while the power to the servo is shut off.

Use this built-in brake for "Holding" purpose only, that is to hold the stalling status. Never use this for "Brake" purpose to stop the load in motion.

Output Timing of BRK-OFF Signal

- For the brake release timing at power-on, or braking timing at Servo-OFF/Servo-Alarm while the motor is in motion, refer to the Operating Instructions (Overall).
- With the parameter, Pr4.38 (Setup of mechanical brake action while the motor is in motion), you can set up a time between when the motor enters to a free-run from energized status and when BRK-OFF signal turns off (brake will be engaged), when the Servo-OFF or alarm occurs while the motor is in motion. For details, download a copy of the instruction manual from our website.

-Notos

- 1. The lining sound of the brake (chattering and etc.) might be generated while running the motor with built-in brake, however this does not affect any functionality.
- 2. Magnetic flux might be generated through the motor shaft while the brake coil is energized (brake is open). Pay an extra attention when magnetic sensors are used nearby the motor.

· Specifications of Built-in Holding Brake

Motor series	Motor output	Static friction torque N·m	Rotor inertia × 10 ⁻⁴ kg·m²	Engaging time ms	Releasing time ms	Exciting current DC A (at cool-off)	Releasing voltage DC V Exciting voltage DC V	Permissible work (J) per one braking		Permissible angular acceleration rad/s²	
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	.9	
MSMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	1 V or more	137	44.1	30000	
	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147		
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9		
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000	
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147		
	750 W(400 V)	2.5 or more				0.7					
MSME	1.0 kW, 1.5 kW, 2.0 kW	7.8 or more	0.33	50 or less	15 or less (100)	0.81	2 V or more	392	490	10000	
	3.0 kW	11.8 or more		80 or less			24 ±2.4			10000	
	4.0 kW, 5.0 kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200		
	400 W(400 V), 600 W(400 V)	2.5 or more		50 or less	15 or less	0.7		392	490		
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000	
MDME	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less	0.79	2 V or more 24 ±2.4	1176	1500		
MDME	3.0 kW	16.2 or more		110 or less	(130)	0.9		1470	2200		
	4.0 kW, 5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3		1372	2900	5440	
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000	
	11.0 kW, 15.0 kW	100 or more	7.1	300 or less	140 or less	1.08		2000	4000	3000	
	1.5 kW	7.8 or more	4.7	80 or less	35 or less	0.83	2 V or more	1372	2900		
MFME	2.5 kW	21.6 or more	8.75	150 or less	100 or less	0.75		1470	1500	10000	
	4.5 kW	31.4 or more	0.70	100 01 1000	100 01 1000	0.70	> 24 IZ.4	1470	2200		
	0.9 kW	13.7 or more	1.35	100 or less	50 or less (130)	0.79		1176	1500	10000	
MGME	2.0 kW	24.5 or more		80 or less	25 or less (200)	1.3	2 V or more			5440	
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	24 ±2.4	1372	2900		
	4.5 kW, 6.0 kW				50 or less					5000	
MHMD	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36	1 V or more	137	44.1	00000	
MSMJ MHMJ	750 W	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	30000	
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000	
MHME	1.5 kW	13.7 or more	1.00	100 or less	50 or less (130)	0.79	2 V or more	1176	1500	10000	
	2.0 kW~5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3	24 ±2.4	1372	2900	5440	
	7.5 kW	58.8 or more		150 or less	50 or less	1.4		.5,2		5000	

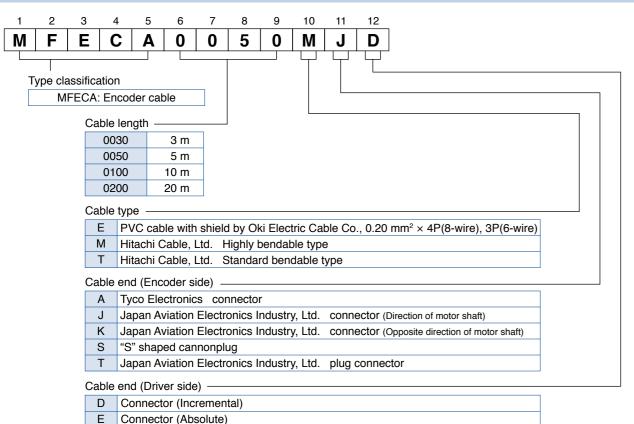
- Releasing time values represent the ones with DC-cutoff using a varistor.

 Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)
- Above values (except static friction torque, releasing voltage and excitation current) represent typical values.
- Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.
- Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

Downloaded From Oneyac.com

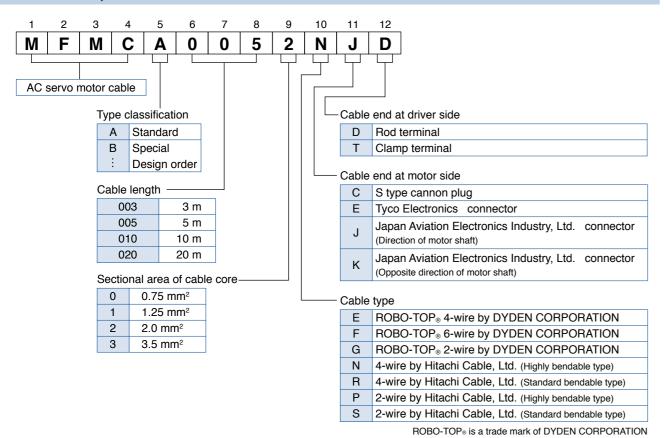
Options

Encoder Cable



Motor Cable, Brake Cable

M Connector (MSMD, MHMD)



Specifications of Motor connector

When the motors of <MSMD, MHMD, MSMJ, MHMJ> are used, they are connected as shown

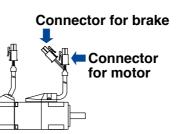
Connector: Made by Tyco Electronics (The figures below show connectors for the motor.)

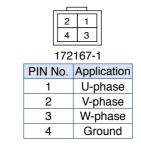
Connector for encoder

					PIN No.	Application
	3	2	1]	1	NC
	6	5	4		2	PS
172168-1 20-bit Incremental				J	3	PS
					4	E5V
20	-bit I	ncre	emer	itai	5	E0V
					6	FG(SHIELD)

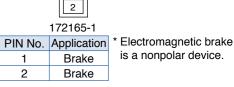
		_	,		PIN No.	Application
	3	2	1]	1	BAT+
	6	5	4		2	BAT-
	9	8	7		3	FG(SHIELD)
470400.4				J	4	PS
172169-1				_	5	PS
17-bit Absolute			₹	6	NC	
				7	E5V	
					8	E0V
ng to NC.					9	NC
_						

<Remarks> Do not connect anything to





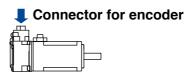
<Connector for motor>

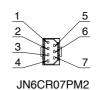


• When the motors of <MSME (50 W to 750 W (200 V))> are used, they are connected as shown

Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

* Do not remove the gasket supplied with the junction cable connector. Securely install the gasket in place. Otherwise, the degree of protection of IP67 will not be guaranteed.



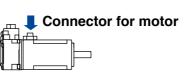


20-bit Incremental			17-bit Absolute		
PIN No.	Application		PIN No.	Application	
1	FG(SHIELD)		1	FG(SHIELD)	
2	_		2	BAT-	
3	E0V		3	E0V	
4	PS		4	PS	
5	_		5	BAT+	
6	E5V		6	E5V	
7	PS		7	PS	

<Connector for brake>

Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.





PIN No.	Application
1	U-phase
2	V-phase
3	W-phase
PE	Ground

Tightening torque of the screw (M2) 0.085 N·m to 0.095 N·m (screwed to plastic)

* Be sure to use only the screw supplied with the connector, to avoid damage.

[Motor with brake]





PIN No.	Application	
1	Brake	* Electromagnetic brake i
2	Brake	a nonpolar device.

Tightening torque of the screw (M2) 0.19 N·m to 0.21 N·m

* Be sure to use only the screw supplied with the connector, to avoid damage.

Encoder Cable

* It doesn't correspond to IP65 and IP67.

Options

A5 Family

MSMD 50 W to 750 W, MHMD 200 W to 750 W Compatible MFECA0 * * 0EAM Part No.

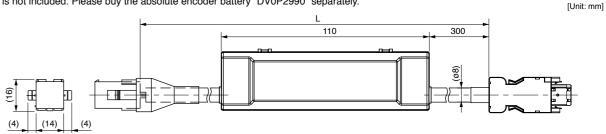
motor output MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

For 20-bit incremental encoder (Without battery box)

Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAM
Connector (Motor side)	172160-1	Tyco Electronics	10	MFECA0100EAM
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAE	Compatible motor output		50 W to 750 W, 200 W to 750 W,		
Specifications	For 17-bit absolute encoder (With battery box) *					

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately

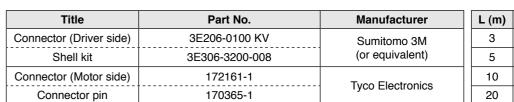


Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030EAE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050EAE
Connector (Motor side)	172161-1	Tyco Electronics	10	MFECA0100EAE
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAE
Cable	0.20 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0EAD	Compatible motor output		50 W to 750 W, 200 W to 750 W,				
Specifications	For 17-bit incremental encoder (Without battery box)							

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[Unit: mm]



0.20 mm²×3P (6-wire)

Sumitomo 3M (or equivalent)		3	MFECA0030EAD
		5	MFECA0050EAD
Tyco Electronics	10	MFECA0100EAD	
	Tyco Electronics	20	MFECA0200EAD
	Oki Electric Cable Co., Ltd.		_

Part No.

• When the motors of <MSME (750 W(400 V), 1.0 kW to 5.0 kW), MDME, MGME, MHME> are used,

Specifications of Motor connector

they are connected as shown below. Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

Connector for encoder

IP67 motor

(Small type)

Connector for encoder

<Encoder connector for IP65 motor>

IP65 motor Connector for encoder (Large type)

N/MS3102A20-29P

20-bit Incremental			17-bit A	Absolute
PIN No.	Application		PIN No.	Application
Α	NC		Α	NC
В	NC		В	NC
С	NC		C D	NC
D	NC		D	NC
E	NC		E F	NC
F	NC		F	NC
G	E0V		G	E0V
Н	E5V		Н	E5V
J	FG(SHIELD)		J	FG(SHIELD)
K	PS		K	PS
L	PS		L	PS
M	NC		М	NC
N	NC		N	NC
Р	NC		Р	NC
R	NC		R	NC
S	NC		S	BAT-

<Encoder connector for IP67 motor>

IN2AS10ML3-R	
--------------	--

20-bit I	20-bit Incremental		17-bit /	Absolute
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.

[6.0 kW or more] Connector for motor Connector for brake

<Motor>

JL04V-2E32-17PE-B-R

MDME 7.5 kW to 15.0 kW

PIN No. Application

N/MS3102A 14S-2P

MDME 7.5 kW to 15.0 kW

PIN No. Application

Brake

Brake

NC

MGME 6.0 kW

MHME 7.5 kW

U-phase

V-phase

W-phase

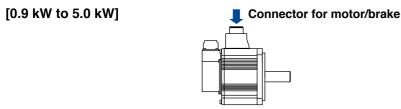
Ground

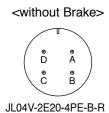
MGME 6.0 kW

MHME 7.5 kW

<Brake>

Connector for motor/brake

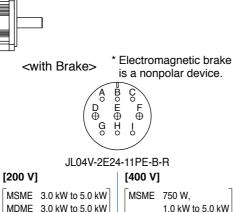




e e C B	
.04V-2E20-4PE-B-R	JL04V-2E20-18PE-B-R
SME 750 W(400 V),	[200 V]

NSME	750 W(400 V),	[200 4]	
	1.0 kW to 2.0 kW	MSME	1.0 kW to 2.0 kW
MDME	400 W (400 V),		1.0 kW to 2.0 kW
	600 W (400 V),	MFME*	1.5 kW
	1.0 kW to 2.0 kW	MGME	0.9 kW
MGME	0.9 kW	MHME	1.0 kW to 1.5 kW
MHME	1.0 kW to 1.5 kW	_	

_				
JL04HV-2E	22-22PE-B-R			
MSME 3.0 kW to 5.0 kW			PIN No.	Application
) kW to 5.0 kW		G	Brake
MGME 2.0) kW to 4.5 kW		Н	Brake
MHME 2.0 kW to 5.0 kW			Α	NC
[1011 11012 2:0 KVV 10 0:0 KVV]			F	U-phase
PIN No.	Application		I	V-phase
A U-phase			В	W-phase
B V-phase			Е	Ground
С	W-phase		D	Ground
D Ground			С	NC



MDME 400 W, 600 W,

MFME* 1.5 kW to 4.5 kW

MGME 0.9 kW to 4.5 kW

1.0 kW to 5.0 kW

MFME* 2.5 kW, 4.5 kW

MGME 2.0 kW to 4.5 kW

MHME 2.0 kW to 5.0 kW

BAT+

	MHME 1.	0 kW to 5.0 kW
PIN No.	Application	
Α	Brake	
В	Brake	
С	NC	
D	U-phase	
Е	V-phase	
F	W-phase	
G	Ground	
Н	Ground	
I	NC	

* MFME is common to with or without brake.

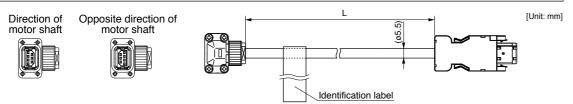
<Remarks>

Do not connect anything to NC.

Cable

Encoder Cable

* It doesn't correspond to IP65 and IP67.



Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN6FR07SM1	Japan Aviation
Connector pin	LY10-C1-A1-10000	Electronics Ind.
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

	L (m)	Part No.(ex.)
	3	MFECA0030MJD
	5	MFECA0050MJD
	10	MFECA0100MJD
	20	MFECA0200MJD
ı		

F	Part No.	MFECA0 * * 0MJE (Highly bendable type, Direction of motor shaft) MFECA0 * * 0MKE (Highly bendable type, Opposite direction of motor shaft) MFECA0 * * 0TJE (Standard bendable type, Direction of motor shaft) MFECA0 * * 0TKE (Standard bendable type, Opposite direction of motor shaft)	Compatible motor output	MSME 50 W to 750 W (200 V)
S	pecifications	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

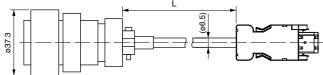
[Unit: mm] Direction of motor shaft 110 Opposite direction of motor shaft Identification label

Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN6FR07SM1	Japan Aviation
Connector pin	LY10-C1-A1-10000	Electronics Ind.
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFECA0030MJE
5	MFECA0050MJE
10	MFECA0100MJE
20	MFECA0200MJE

[Unit: mm]

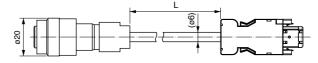
Part No.	MFECA0 * * 0ESD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP65 Motor)
Specifications	For 20-bit incremental encoder (Without battery box)		



Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	
Cable clamp	N/MS3057-12A	Electronics Ind.	
Cable	0.2 mm ² x3P (6-wire)	Oki Electric Cable Co., Ltd.	

	L (m)	Part No.	
	3	MFECA0030ESD	
	5	MFECA0050ESD	
	10	MFECA0100ESD	
	20	MFECA0200ESD	
٦			

Par	t No.	MFECA0 * * 0ETD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V), MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)
Specif	fications	For 20-bit incremental encoder (Without battery box)		



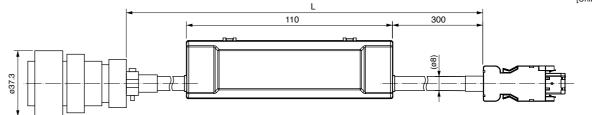
Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETD
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	MFECA0100ETD
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETD
Cable	0.2 mm ² x3P (6-wire)	Oki Electric Cable Co., Ltd.		

Part No.	MFECA0 * * 0ESE	Compatible motor output	0.9 kW to 5.0 kW (IP65 Motor)
Specifications	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

П	Init:	mn

[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ESE
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ESE
Connector (Motor side)	N/MS3106B20-29S	Japan Aviation	10	MFECA0100ESE
Cable clamp	N/MS3057-12A	Electronics Ind.	20	MFECA0200ESE
Cable	0.2 mm ² ×4P (8-wire)	Oki Electric Cable Co., Ltd.		

Part N	o. MFECA0 * * 0ETE	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)	
Specificat	ons For 17-bit absolute encod	For 17-bit absolute encoder (With battery box) *		

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

s not included. Flease buy t	ne absolute encoder battery	L Separately.		[Unit: mm]
	-	110	300]
050			90	

Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M (or equivalent)
Shell kit	3E306-3200-008	
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation
Connector pin	JN1-22-22S-PKG100	Electronics Ind.
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.

	L (m)	Part No.
	3	MFECA0030ETE
	5	MFECA0050ETE
	10	MFECA0100ETE
	20	MFECA0200ETE
1		

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

=10

Title	Part No.	Manufacturer	
Connector	172159-1	Tues Floatronies	
Connector pin	170366-1	Tyco Electronics	
Rod terminal	AI0.75-8GY	Phoenix Contact	
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION	

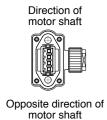
L (m)	Part No.
3	MFMCA0030EED
5	MFMCA0050EED
10	MFMCA0100EED
20	MFMCA0200EED

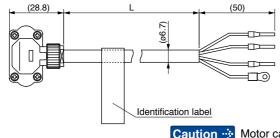
	MFMCA0 * * 0NJD (Highly bendable type, Direction of motor shaft)		MSME 50 W to 750 W(200V)
Dort No.	MFMCA0 * * 0NKD (Highly bendable type, Opposite direction of motor shaft)	Applicable	MSME 200 W to 750 W(200V
Part No.		model	MSME 50 W to 750 W(200V)
	MFMCA0 * * 0RKD (Standard bendable type, Opposite direction of motor shaft)		MSME 200 W to 750 W(200V

[Unit: mm]

[Unit: mm]

[Unit: mm]



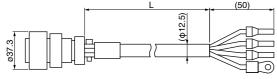


Caution : Motor cable for opposite direction of motor shaft cannot be used with a motor 50W and 100W.

Title	Part No.	Manufacturer
Connector	JN8FT04SJ1	Japan Aviation
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.
Rod terminal	Al0.75-8GY	Phoenix Contact
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.
Cable	AWG18 4-wire (ø6.7)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFMCA0030NJD
5	MFMCA0050NJD
10	MFMCA0100NJD
20	MFMCA0200NJD
	•

Applicable model Part No. MFMCA0 * * 2ECD MFME 1.5 kW(200 V)



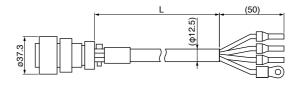
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037.3	(4012.5)	

Title	Part No.	Manufacturer	
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation	
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	
Rod terminal	NTUB-2	LC T Mfor Co. Ltd	
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 2.0mm ² 4-wire	DYDEN CORPORATION	

L (m)	Part No.
3	MFMCA0032ECD
5	MFMCA0052ECD
10	MFMCA0102ECD
20	MFMCA0202ECD

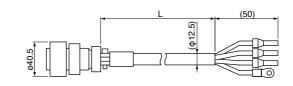
MSME 750 W(400 V), 1.0 kW to 2.0 kW, Applicable model MDME 400 W(400 V), 600 W(400 V), 1.0 kW to 2.0 kW MFMCD0 * * 2ECD Part No. MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)

[Unit: mm]



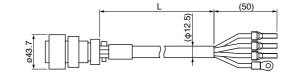
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A20-4SE-EB-R	Japan Aviation	3	MFMCD0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCD0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCD0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCD0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.			MHME 2.0 kW (200 V and 400 V commonness)
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Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCE0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCE0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCE0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	MFME	$1.5\ kW(400\ V),\ 2.5\ kW(200\ V$ and 400 V commonness)
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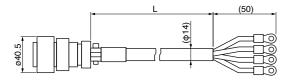
Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCF0032ECD
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCF0052ECD
Rod terminal	NTUB-2	LC T Mfa Co. Ltd	10	MFMCF0102ECD
Nylon insulated round terminal	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCF0202ECD
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kWApplicable model Part No. MFMCA0 * * 3ECT MHME $\,$ 3.0 kW to 5.0 kW, MGME $\,$ 2.0kW to 4.5 kW (All model 200 V and 400 V commonness)

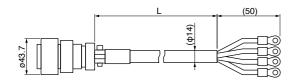
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCA0033ECT
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCA0203ECT

Part No. MFMCD0 * * 3ECT Applicable model MFME 4.5 kW (200 V and 400 V commonness)	
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[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCD0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCD0203ECT

A5 Family

Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.

Options

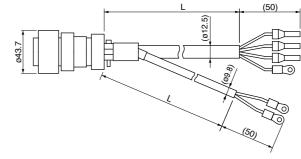
MSME 1.0 kW to 2.0 kW(200 V), MDME 1.0 kW to 2.0 kW(200 V), Applicable model MFME 1.5 kW(200 V), MFMCA0 * * 2FCD MHME 1.0 kW(200 V) to 1.5 kW(200 V)

MGME 0.9 kW(200V)

[Unit:	m

Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A20-18SE-EB-R	Japan Aviation	3	MFMCA0032FCD
Cable clam	0	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0052FCD
Rod termina	al	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCA0102FCD
Nylon insulated	Earth	N2-M4	J.S.T Mfg. Co., Ltd.	20	MFMCA0202FCD
round terminal	Brake	N1.25-M4	J.S.1 Wilg. Co., Ltd.		
Cable		ROBO-TOP 600 V 0.75 mm ² and	DYDEN CORPORATION		

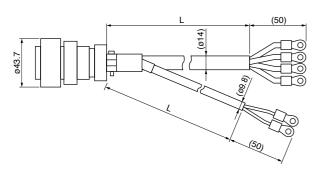
Part No.	MFMCE0 * * 2FCD	Applicable model	MDME MFME MGME	750 W(400 V) to 2.0 kW(400 V), 400 W(400 V) to 2.0 kW(400 V), 1.5 kW(400 V), 2.5 kW(200 V/400 V), 0.9 kW(400 V) 1.0 kW(400 V), 1.5 kW(400 V), 2.0 kW(200 V/400 V)



Title		Part No.	Manufacturer	L (m)	Part No.
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCE0032FCD
Cable clam)	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCE0052FCD
Rod termina	ıl	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCE0102FCD
Nylon insulated	Earth	N2-M4	LS T Mfa Co. Ltd	20	MFMCE0202FCD
round terminal	Brake	N1.25-M4	J.S.T Mfg. Co., Ltd.		
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 2.0 mm ² 6-wire	DYDEN CORPORATION		

Motor Cable (with Brake) * It doesn't correspond to IP65 and IP67.

MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 4.5 kW, MHME 3.0 kW to 5.0 kW Applicable model MFMCA0 * * 3FCT Part No. MGME 2.0 kW to 4.5 kW (All model 200 V and 400 V commonness)



Title		Part No.	Manufacturer	
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation	
Cable clam	р	JL04-2428CK(17)-R	Electronics Ind.	
Nylon insulated	Earth	N5.5-5	J.S.T Mfg. Co., Ltd.	
round terminal	Brake	N1.25-M4	J.S.1 Wilg. Co., Ltd.	
Cable		ROBO-TOP 600 V 0.75 mm ² and ROBO-TOP 600 V 3.5 mm ² 6-wire	DYDEN CORPORATION	

L (m)	Part No.
3	MFMCA0033FCT
5	MFMCA0053FCT
10	MFMCA0103FCT
20	MFMCA0203FCT

[Unit: mm]

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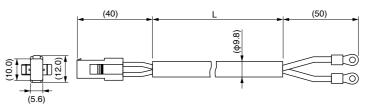
A5 Family

Brake Cable

* It doesn't correspond to IP65 and IP67.

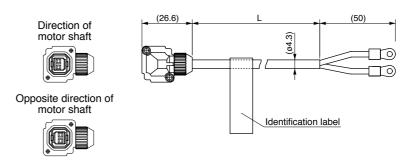
Options

Dort No	MFMCB0 * * 0GET	Applicable	MSMD	50 W to 750 W,	MHMD	200 W to 750 W
Part No.	WIFWICEUTTUGET	model	MSMJ	200 W to 750 W,	MHMJ	200 W to 750 W



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Type Fleetrenies	3	MFMCB0030GET
Connector pin	170366-1, 170362-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ² 2-wire	DYDEN CORPORATION	20	MFMCB0200GET

MFMCB0 ** 0SKT (Standard bendable type, Opposite direction of motor shaft) (200 V)
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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

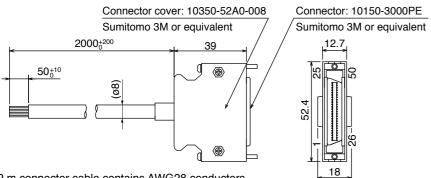
196

Options

A5 Family

Cable for Interface

Part No. DV0P4360



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)

<Remarks>

Color designation of the cable e.g.) Pin-1 Cable color: Orange (Red1): One red dot on the cable The shield of this cable is connected to the connector shell but not to the terminal.

Interface Conversion Cable

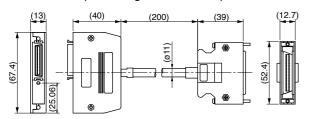
4132		
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Interface cables for old product (XX series or V series) can be connected to the current product by using the connector conversion cable shown below.

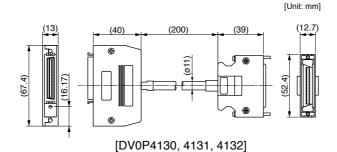
DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5II, A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5II, A5 series (A4, A series) for velocity control
DV0P4132	MINAS V → A5II, A5 series (A4, A series) for torque control

^{*} For details of wiring, contact our sales department.

Converts 36-pin configuration to 50-pin.



[DV0P4120, 4121]



Connector Kit

Connector Kit for Communication Cable (for RS485, RS232) (Excluding A5IE, A5E Series)

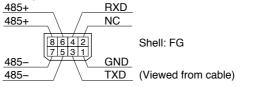
Part No. DV0PM20024

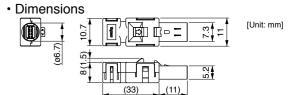
Components

[Unit: mm]

Title	Part No.	Manufacturer	Note
Connector	2040008-1	Tyco Electronics	For Connector X2 (8-pins)

• Pin disposition of connector, connector X2





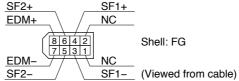
Connector Kit for Safety (Excluding A5IE, A5E Series)

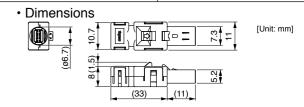
Part No. DV0PM20025

Components

•			
Title	Part No.	Manufacturer	Note
Connector	2013595-1	Tyco Electronics	For Connector X3 (8-pins)

Pin disposition of connector, connector X3





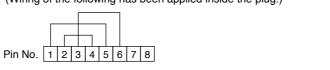
Safety bypass plug (Excluding A5IE, A5E Series)

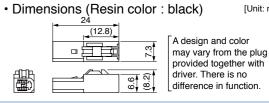
Part No. DV0PM20094

· Components

Title	Part No.	Manufacturer	Note
Connector	CIF-PB08AK-GF1R	J.S.T Mfg. Co., Ltd.	For Connector X3

 Internal wiring (Wiring of the following has been applied inside the plug.)





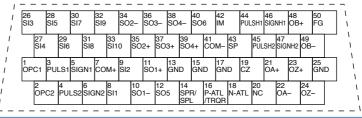
Connector Kit for Interface

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.

[Unit: mm]

- 2) For the function of each signal title or its symbol, refer to the operating manual.
- 3) Do not connect anything to NC pins in the above table.

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

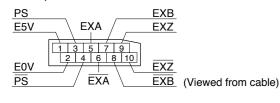
Connector Kit for External Scale (Excluding A5IE, A5E Series)

Part No. DV0PM20026

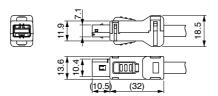
Components

Title	Part No.	Manufacturer	Note
Connector	MUF-PK10K-X	J.S.T Mfg. Co., Ltd.	For Connector X5 (10-pins)

• Pin disposition of connector, connector X5



Dimensions



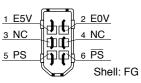
Connector Kit for Encoder

Part No. DV0PM20010

Components

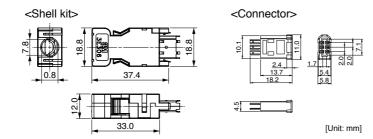
Title	Part No.	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M (or equivalent)	For Connector V6
Shell kit	3E306-3200-008		For Connector X6

Pin disposition of connector, connector X6



(Viewed from cable)

Dimensions



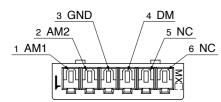
Connector Kit for Analog Monitor Signal

Part No. DV0PM20031

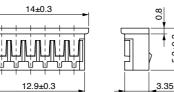
Components

Title	Part No.	Number	Manufacturer	Note
Connector	510040600	1	Moley Inc	For Connector V7 (C nine)
Connector pin	500118100	6	Molex Inc	For Connector X7 (6-pins)

• Pin disposition of connector, connector X7



Dimensions



[Unit: mm]

<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B

Connector Kit for Power Supply Input

Part No. DV0PM20032 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V: Single row type)

Components

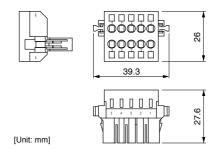
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20033 (For A-frame to D-frame 200 V: Double row type)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-C	1	LC T Mfg. Co. Ltd	For Connector VA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Dimensions



* When connection multiple axes in series, make sure the sum of the current value does not exceed the rated current (11.25 A) of DV0PM20033.

Remarks

When using drivers MDDKT5540 *** or MDDHT5540 *** in single-phase power supply, do not use DV0PM20033.

Driver part No.	Power supply	Rated input current
MADHT1105 *** MADKT1105 ***	Single phase 100 V	1.7 A
MADHT1107 *** MADKT1107 ***	Single phase 100 V	2.6 A
MADHT1505 *** MADKT1505 ***	Single phase/3-phase 200 V	1.6 A/0.9 A
MADHT1507 *** MADKT1507 ***	Single phase/3-phase 200 V	2.4 A/1.3 A
MBDHT2110 *** MBDKT2110 ***	Single phase 100 V	4.3 A
MBDHT2510 *** MBDKT2510 ***	Single phase/3-phase 200 V	4.1 A/2.4 A
MCDHT3120 *** MCDKT3120 ***	Single phase 100 V	7.6 A
MCDHT3520 *** MCDKT3520 ***	Single phase/3-phase 200 V	6.6 A/3.6 A
MDDHT3530 *** MDDKT3530 ***	Single phase/3-phase 200 V	9.1 A/5.2 A
MDDHT5540 *** MDDKT5540 ***	Single phase/3-phase 200 V	14.2 A/8.1 A

Part No. DV0PM20044 (For E-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGSA-L	1	LC TMfc Co Ltd	For Connector VA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XA

Part No. DV0PM20051 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-M	1	LC T Mfc Co Ltd	For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	

Part No. DV0PM20052 (For E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-L	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	FOI CONNECTOR XA

Connector Kit Connector Kit * When IP65 or IP67 are necessary, the customer must give appropriate processing.

A5 Family

Options

Connector Kit for Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	LC T Mfg. Co. Ltd	For Connector 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 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-L	1	LCTMfc Co Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	* Jumper wire is included.

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	LC T Mfg. Co. Ltd	For Connector XC
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	

Connector Kit for Motor Connection (Driver side)

Part No. DV0PM20034 (For A-frame to C-frame 100 V, A-frame to D-frame 200 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	06JFAT-SAXGF	1	J.S.T Mfg. Co., Ltd.	For Connector XB
Handle lever	J-FAT-OT	2		* Jumper wire is included.

Part No. | DV0PM20046 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAXGSA-L	1	LC T Mfa Co Ltd	For Connector XB
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	

Part No. DV0PM20054 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAXGSA-M	1	LC T Mfg. Co. Ltd	For Connector VD
Handle lever	J-FAT-OT-L	2	J.S.T Mfg. Co., Ltd.	For Connector XB

Connector Kit for Motor/Encoder Connection

Part No.			MSMD 50 W to 750 W, MHMD 200 W to 750 W
i uit ito.	DV0P4290	model	(absolute encoder type)

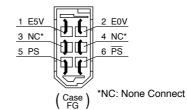
Components

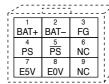
	Title	Part No.	Number	Manufacturer	Note	
	Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
	Shell kit	3E306-3200-008	1	(or equivalent)		
ĺ	Connector	172161-1	1	Tues Floaturation	For Encoder cable	
	Connector pin	170365-1	9	Tyco Electronics	(9-pins)	
	Connector	172159-1	1	Tyco Electronics	For Motor cable	
	Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

• Pin disposition of connector, • Pin disposition of connector connector X6

for encoder cable

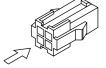
· Pin disposition of connector for motor cable











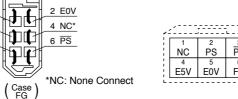
* When you connect the battery for absolute encoder, refer to P.207, "When you make your own cable for 17-bit absolute encoder"

P	Part No.	DV0P4380	Applicable model	MSMD MSMJ	50 W to 750 W, 200 W to 750 W,	MHMD MHMJ	200 W to 750 W 200 W to 750 W
				(increm	ental encoder type)	

· Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Connector	172160-1	1	Tues Flacturation	For Encoder cable (6-pins)	
Connector pin	170365-1	6	Tyco Electronics		
Connector	172159-1	1	Tugo Floatronico	For Motor cable	
Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

· Pin disposition of connector, · Pin disposition of connector connector X6 for encoder cable









for motor cable

· Pin disposition of connector



Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

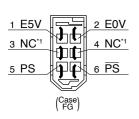
Part No. DV0PM20035 MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

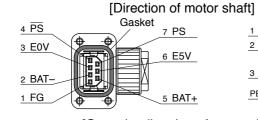
Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 pine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable
Socket contact	LY10-C1-A1-10000	7	Electronics Ind.	(7-pins)
Motor connector	JN8FT04SJ1	1	Japan Aviation	For Motor cable
Socket contact	ST-TMH-S-C1B-3500	4	Electronics Ind.	(4-pins)

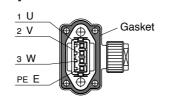
• Pin disposition of connector, • Pin disposition of connector connector X6 for encoder cable

· Pin disposition of connector for motor cable

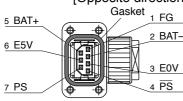


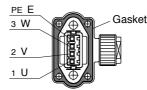
*1 NC: None Connect





[Opposite direction of motor shaft]





* Pins 2 and 5 are left unused (NC) with an incremental encoder.

Remarks - Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

Part No.	DV0PM20036	Applicable model	<ip67 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW, MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)</ip67>	Without brake	
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector At (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A-20-4SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	FOI MOLOI Cable

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Part No.			(' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	Vithout brake
rait No.	DV0F4310	model	MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW	brake

Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector A6 (6-pins)
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder Cable
Motor connector	N/MS3106B20-4S	1	Japan Aviation	Car Matar aphla
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable

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	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	FOI WIGGO CADIE

		<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>\\/ithout</th></ip65>	notor>			\\/ithout	
Part No.	111/1110/13/211	Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	Without brake
			MHME	2.0 kW to 5.0 kW,	MGME	2.0 kW to 4.5 kW	Diake

Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector V6 (6 nine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Encoder cable
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder Cable
Motor connector	N/MS3106B22-22S	1	Japan Aviation	For Motor coble
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable

Part No.	DV0PM20038	Applicable model	<ip67 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MFME 1.5 kW (Common to with/ without brake), MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip67>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector A6 (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder Cable
Motor connector	JL04V-6A20-18SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor Cable

Connector Kit

* When IP65 or IP67 are necessary, the customer must give appropriate processing.

Part No.		Applicable model	<ip65 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip65>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M (or equivalent)	Fau Camaratan VC (Carina)	
Shell kit	3E306-3200-008	1		For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	Fay Fysaday sable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-18S	1	Japan Aviation	For Mater coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	brake
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Components

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV		Sumitomo 3M	For Connector X6 (6-pins)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector Ao (o-pins)
Encoder connector	or JN2DS10SL1-R		Japan Aviation	For Encoder cable
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A24-11SE-EB-R	1	Japan Aviation	For Motor cable
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	FOI MOTOL CADIE

Part No.	DV0P4340	Applicable model	<ip65 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 3.0 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 3.0 kW</ip65>	With brake
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Components

Title	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 Electronics Ind.	For Encoder cable	
Cable clamp	N/MS3057-12A	1			
Motor connector	ctor N/MS3106B24-11S		Japan Aviation	For Motor cobla	
Cable clamp	N/MS3057-16A	1	Electronics Ind.	For Motor cable	

<Remarks>

• For crimp tool etc., necessary to produce a cable, access the web site of the manufacturer or consult with the manufacturer for details. For inquiries of manufacturer, refer to P.213 "List of Peripheral Equipments".

Part No.		Applicable model	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</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	For Encoder cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor Cable	

^{*} Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

art No.		Ammilankia	<ip67 motor=""> MDME 7.5 kW to 15.0 kW MGME 6.0 kW, MHME 7.5 kW</ip67>	With brake	
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	F 0	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Freeder coble	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	Fau Matau aabla	
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable	
Brake connector	N/MS3106B14S-2S	1	Japan Aviation	For Brake cable	
Cable clamp	N/MS3057-6A	1	Electronics Ind.	FUI DIAKE CADIE	

^{*} Cable cover size: Φ22 to Φ25. Cable core material is not specified. The user can select the cable compatible with the connector to be used.

Connector Kit for Motor/Brake Connection

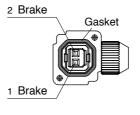
Part No.	DV0PM20040	Applicable model	MSME 50 W to 750 W
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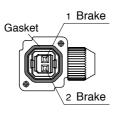
Components

Title		Part No.	Number	Manufacturer	Note
	Connector	JN4FT02SJM-R	N4FT02SJM-R 1 Japan Aviation		For brake cable
	Socket contact	Socket contact ST-TMH-S-C1B-3500		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.213 "List of Peripheral Equipments".

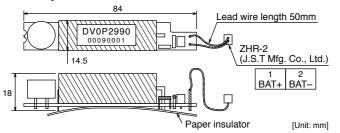
Mounting Bracket

A5 Family

Battery for Absolute Encoder

Part No. DV0P2990

· Lithium battery: 3.6 V 2000 mAh



<Caution>

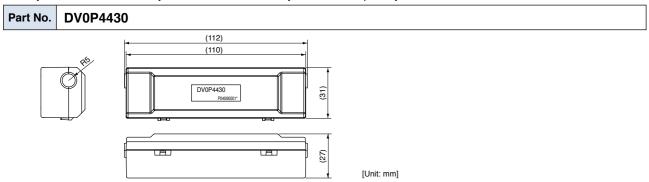
Battery for Absolute Encoder

* A5IIE, A5E series does not support to absolute encoder.

This battery is categorized as hazardous substance, and you may be required to present an application of hazardous substance when you transport by air (both passenger and cargo airlines).

Battery Box for Absolute Encoder *

* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.



When waking a cable for 17-bit absolute encoder by yourself

When you make your own cable for 17-bit absolute encoder, connect the optional battery for absolute encoder, DV0P2990 as per the wiring diagram below. Connector of the battery for absolute encoder shall be provided by customer as well.

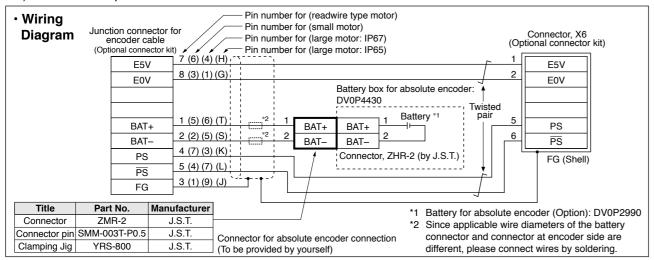
<Caution>

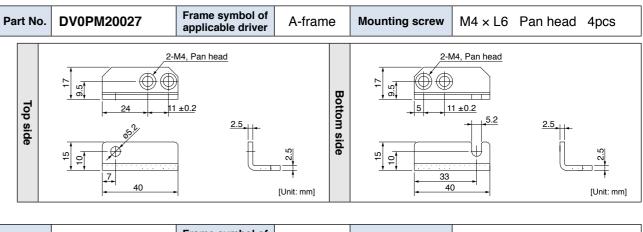
Install and fix the battery securely. If the installation and fixing of the battery is not appropriate, it may cause the wire breakdown or damage of the battery.

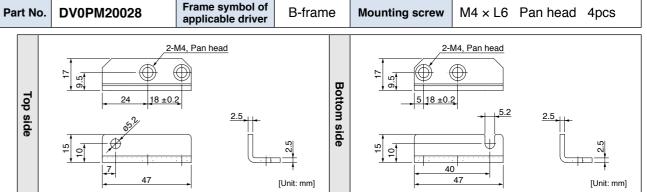
Refer to the instruction manual of the battery for handling the battery.

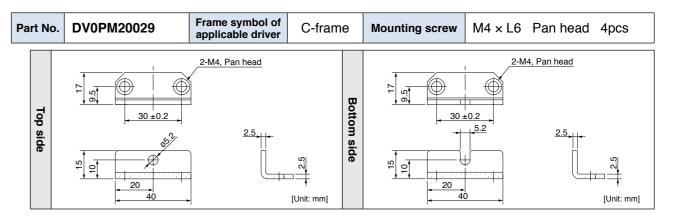
Installation Place of Battery

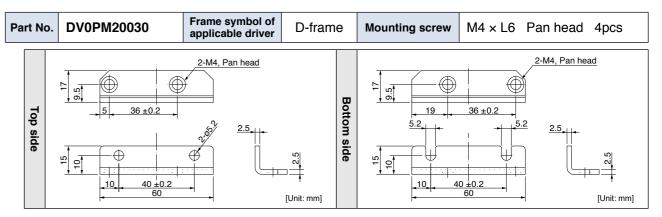
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable gas, grinding oil, oil mist, iron powder or chips and etc.
- 3) Well-ventilated and humid and dust-free place.
- 4) Vibration-free place











For E, F and G-frame, it is possible to make both a front end and back end mounting by changing the mounting direction of L-shape bracket (attachment).

140±5 °C

B-contact

Open/Close capacity

1 A 125 VAC 6000 times

0.5 A 250 VAC 10000 times

(resistance load)

Activation

temperature of

built-in thermal protector

voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit,

Specifications

Weight

kg

0.1

0.1

0.4

0.2

0.5

1.2

0.5

1.2

16

16

cable core

outside

diameter

mm

Ф1.27

AWG18

stranded

wire

__ *2

_ *2

The circuit should be so designed that the power supply will be turned off as the thermal protector operates.

Resistance

Ω

50

100

25

50

30

20

120

80

3.3

13.3

*1 Power with which the driver can be used without activating the built-in thermal protector.

Rated power

(reference) *1

Free air

W

10

10

17

17

40

52

35

65

_ *3

with fan

1 m/s W

25

25

50

130

80

190

780

1140

Attach the regenerative resistor to a nonflammable material such as metal.

A built-in thermal fuse and a thermal protector are provided for safety.

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.

External Regenerative Resistor

Manufacturer's

part No.

RF70M

RF70M

RF180B

RF180B

RF240

RH450F

RF240

RH450F

RH450F × 6

RH450F × 6

Part No.

DV0P4280

DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285

DV0PM20048

DV0PM20049

DV0PM20058

DV0PM20059

100 °C.

Manufacturer : Iwaki Musen Kenkyusho

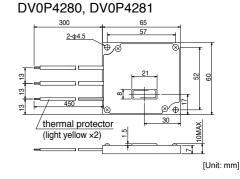
power supply voltage or load.

T1, T2, 24 V, 0 V, E: M4: 1.2 N·m to 1.4 N·m : M5 : 2.0 N·m to 2.4 N·m

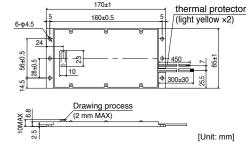
Use the cable with the same diameter as the main circuit cable. (Refer to P.19).

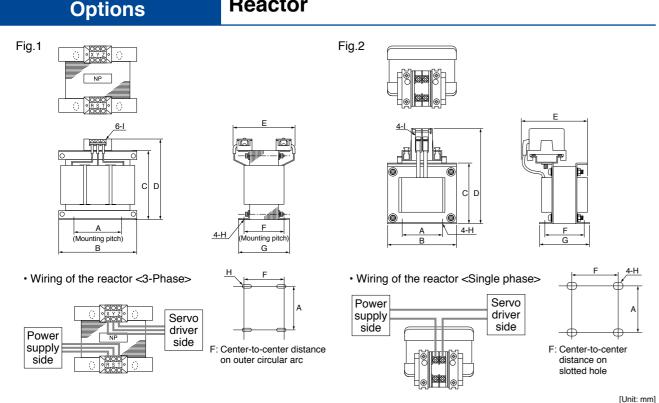
*3 With built-in fan which should always be operated with the power supply connected across 24 V and 0 V.

		Power supply			
Frame	Single phase, 100 V	Single phase, 200 V 3-phase, 200 V	3-phase, 400 V		
А	DV0P4280	DV0P4281 (50 W, 100 W) DV0P4283 (200 W)	_		
В	DV0P4283	DV0P4283			
С	DV0P4282	DV0F4263			
D		DV0P4284	DV0PM20048		
E		DV0P4284 × 2 in parallel or DV0P4285	DV0PM20049		
F	_	DV0P4285 × 2 in parallel	DV0PM20049 × 2 in parallel		
G		DV0P4285 × 3 in parallel	DV0PM20049 × 3 in parallel		
Н		DV0P4285 × 6 in parallel or DV0PM20058	DV0PM20049 × 6 in parallel or DV0PM20059		



DV0P4282, DV0P4283





Inductance Rated

		Part No.	A	В	С	D	E (Max)	F	G	Н	I	(mH)	current (A)
		DV0P220	65±1	125±1	(93)	136мах	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3
		DV0P221	60±1	150±1	(113)	155мах	130	60+3/-0	75±2	4-7φ×12	M4	4.02	5
_;	ia 1	DV0P222	60±1	150±1	(113)	155мах	140	70+3/-0	85±2	4-7φ×12	M4	2	8
Fig	y. ı	DV0P223	60±1	150±1	(113)	155мах	150	79+3/-0	95±2	4-7φ×12	M4	1.39	11
		DV0P224	60±1	150±1	(113)	160мах	155	84+3/-0	100±2	4-7φ×12	M5	0.848	16
		DV0P225	60±1	150±1	(113)	160мах	170	100+3/-0	115±2	4-7φ×12	M5	0.557	25
		DV0P227	55±0.7	80±1	66.5±1	110мах	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fi	g.2	DV0P228	55±0.7	80±1	66.5±1	110мах	95	46±2	60±2	4-5φ×10	M4	2	8
		DV0PM20047	55±0.7	80±1	66.5±1	110мах	105	56±2	70±2	4-5φ×10	M4	1.39	11

^{*} For application, refer to P.21 to P.28 and P.153 to P.154 "Table of Part Numbers and Options".

Harmonic restraint

Harmonic restraint measures are not common to all countries. Therefore, prepare the measures that meet the requirements of the destination country.

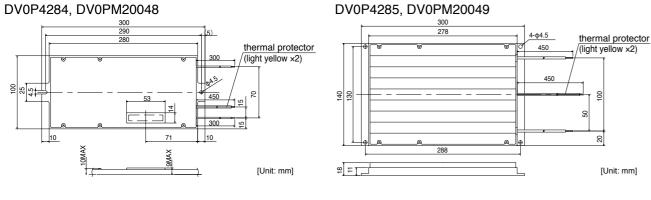
With products for Japan, on September, 1994, "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" and "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers' Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. We are pleased to inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver was modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the

<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

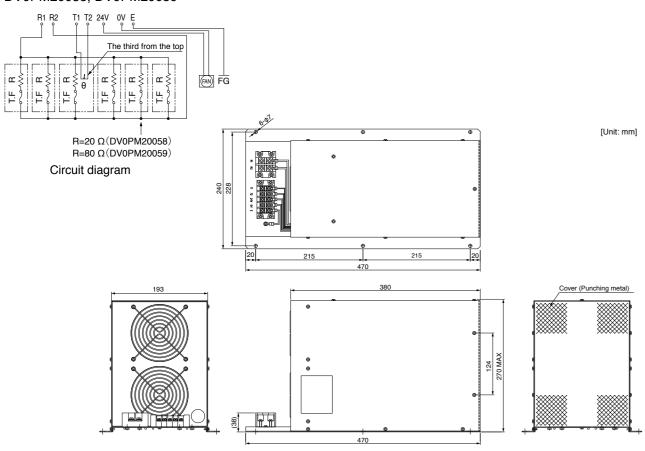
Options

A5 Family



External Regenerative Resistor

DV0PM20058, DV0PM20059



<Caution when using external regenerative resistor>

Regenerative resistor gets very hot.

Configure a circuit so that a power supply shuts down when built-in thermal protector of the regenerative resistor works. Because it is automatic reset thermal protector, please apply a self-holding circuit to the outside in order to maintain safety in case of sudden activation. During the failure of the driver, the surface temperature of the regenerative resistor may exceed the operating temperature before thermal protector starts to work.

Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.

- Be attached the regenerative resistance to non-combustible material such as metal.
- Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.

Downloaded From Oneyac.com

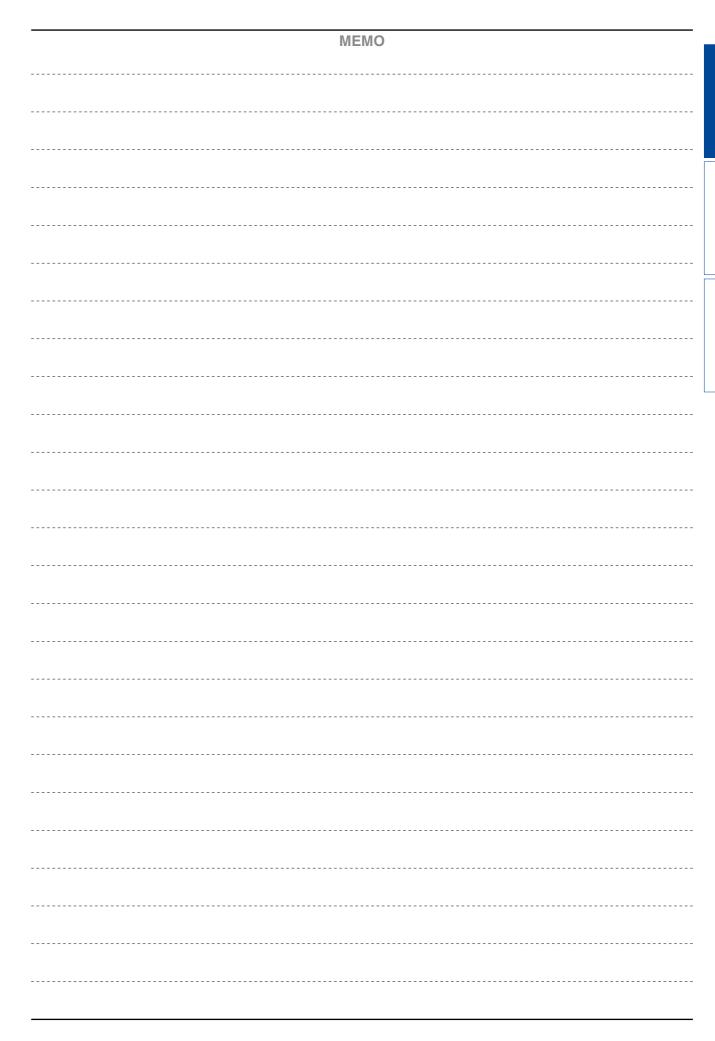
• Do not install the regenerative resistor near flammable materials.

	Motor	Part No.	Manufacturer		
MSMD	50 W to 750 W	Z15D271	SEMITEC Corporation or NIPPON CHEMI-CON CORPORATION		
MSMJ	200 W to 750 W	or			
	50 W to 750 W	TNR15G271K			
MSME	750 W (400 V) 1.0 kW to 5.0 kW	Z15D151	SEMITEC Corporation		
	400 W (400 V), 600 W (400 V)				
MDME	1.0 kW to 3.0 kW	NVD07SCD082	KOA Corporation		
MDME	4.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation		
	11 kW, 15 kW				
MFME	1.5 kW	NVD07SCD082	KOA Corporation		
IVIFIVIE	2.5 kW, 4.5 kW				
MGME	0.9 kW to 6.0 kW	Z15D151	SEMITEC Corporation		
MHMD MHMJ	200 W to 750 W	Z15D271 or TNR15G271K	SEMITEC Corporation or NIPPON CHEMI-CON CORPORATION		
MHME	1.0 kW, 1.5 kW	NVD07SCD082	KOA Corporation		
IVINIVIE	2.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation		

List of Peripheral Equipments

Manufacturer	Tel No. / Home Page	Peripheral components	
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker	
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay	
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor	
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm	Surge absorber for holding brake	
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html		
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/		
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/		
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	Noise filter for signal lines	
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/		
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter	
Japan Aviation Electronics Industry, Ltd.	+81-3-3780-2717 http://www.jae.co.jp/e-top/index.html		
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp		
J.S.T. Mfg. Co., Ltd.	+81-45-543-1271 http://www.jst-mfg.com/index_e.php	Connector	
Sumitomo 3M	+81-3-5716-7290 http://solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/		
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html		
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable	
DR. JOHANNES HEIDENHAIN GmbH	+81-3-3234-7781 http://www.heidenhain.de/de_EN/company/contact/		
Fagor Automation S.Coop.	+34-943-719-200 http://www.fagorautomation.com		
Magnescale Co., Ltd.	+81-463-92-7971 http://www.mgscale.com/mgs/language/english/	External scale	
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/		
Nidec Sankyo Corporation	+81-3-5740-3006 http://www.nidec-sankyo.co.jp/		
Renishaw plc	+44 1453 524524 www.renishaw.com		
Schaffner EMC, Inc.	+81-3-5712-3650 http://www.schaffner.jp/	Naise Ch	
TDK-Lambda Corporation	+81-3-5201-7140 http://www.tdk-lambda.com/	Noise filter	

^{*} The above list is for reference only. We may change the manufacturer without notice.



Compact Servo Only for Position Control.

Ultra compact position control type

MINAS E Series



Best Fit to Small Drives

- Further evolution in down-sizing, by 47 % in size. (Note)
- Exclusively designed for position control.

(Note) Compared to MUDS043A1



Easy to Handle, Easy to Use

- DIN-rail mounting unit (option) improves handling/installation.
- User-friendly Console makes the setup easy.
- High functionality Real-Time Auto-Gain Tuning enables adjustment-free operation.



High-Speed Positioning with Resonance Suppression Filters

- Built-In notch filter suppresses resonance of the machine.
- Built-in adaptive filter detect resonance frequency and suppress vibration.

4

Smoother operation for Low Stiffness Machine

Damping control function suppresses vibration during acceleration/deceleration

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Features

Leasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

MINAS E Series

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

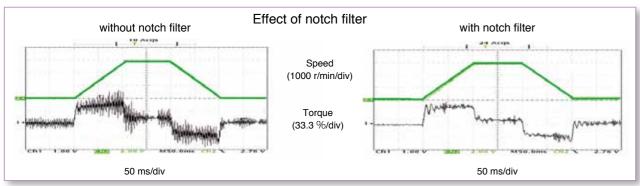
?. Further Reduction of Vibration

Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.

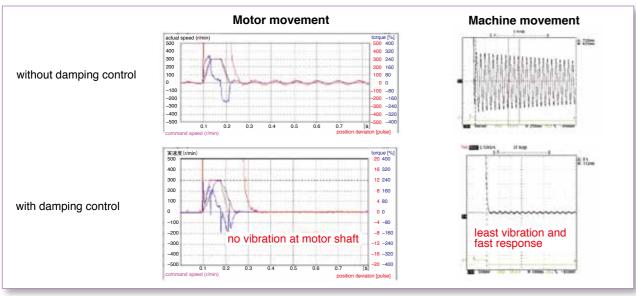
Notch filter (Note1)

- 1-channel notch filter is equipped in the driver independent from adaptive filter.
- Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise of the machine which has multiple resonance points can be expected.



Damping control (Note1)

You can suppress vibration occurring at both starting and stopping in low stiffness machine, by manually setting up. vibration frequency in 0.1 Hz unit. Note) Only applies to manual adjustment



(Note1) Select at positioning action mode

- · At high speed positioning mode (Pr02=0) Select either one of notch filter, damping control or high-functionality real-time auto-gain tuning. Not possible to use them all at the same time. Adaptive filter cannot be used
- · At high-functionality positioning mode (Pr02=1) All of notch filter, damping control, high-functionality real-time auto-gain tuning and adaptive filter can be

1 Further Flexibility and Multiplicity

Console (Option)

- You can set up parameters, copy and make a JOG run.
- Convenient for maintenance at site.
- Refer to P.241, Options.

Command control modes

- Offers 2 command modes, "Position control" and "Internal velocity control".
- You can make a 4-speed running at preset values with parameter at internal velocity control mode.

Inrush current suppressing function

- Inrush suppressing resistor, which prevent the circuit breaker shutdown of the power supply caused by inrush current at power-on, is equipped in this driver.
- Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give load to the power line.

Regeneration discharging function

- Discharges the regenerative energy with external resistor, where energy is generated while stopping the load with large moment of inertia, or use in up-down operation, and is returned to the driver from the motor.
- No regenerative resistor is installed in the driver.
- It is highly recommended to install an external regenerative resistor (option).

Built-in dynamic brake

- You can select the dynamic brake action which short the servo motor windings of U, V and W, at Servo-OFF, CW/ CCW over- travel inhibition, power shutdown and trip.
- You can select the action sequence depending on the machine requirement.

Setup support software (Option)

With the setup support software, "PANATERM" via RS232 / RS485 communication port, you can monitor the running status of the driver and set up parameters.

Note) Refer to P.236 for setup support software.

Key-way shaft and tapped shaft end

- Easy pulley attachment and easy maintenance
- Attache screw to the tapped shaft to prevent key or pulley from being pulled out.

Wave-form graphic function

- With the setup support software, "PANATERM", you can monitor the "Command speed", "Actual speed", "Torque", "Position deviation" and "Positioning complete signal".
- Helps you to analyze the machine and shorten the setup

Note) Refer to P.236 for setup support software.

Frequency analyzing function

- You can confirm the response frequency characteristics of total machine mechanism including the servo motor with the setup support software, "PANATERM".
- Helps you to analyze the machine and shorten the setup

Note) Refer to P.236 for setup support software.

Torque limit switching function

- You can select 2 preset torque limit value from external
- Use this function for tension control or press-hold control.

Conformity to CE and UL Standards







Subject		Standard conformed		
Motor	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to Low-Voltage	
	EN50178	UL508C CSA22.2 No.14	Directives	
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment		
	EN61000-6-2	Immunity for Industrial Environments		
Motor and driver	EC61000-4-2	Electrostatic Discharge Immunity Test	l	
	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	Conforms to references by EMC Directives	
	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test		
	IEC61000-4-5	Lightening Surge Immunity Test		
	IEC61000-4-6	High Frequency Conduction Immunity Test		
	IEC61000-4-11	Instantaneous Outage Immunity Test		

: International Electrotechnical Commission

EN : Europaischen Normen

EMC: Electromagnetic Compatibility

CSA: Canadian Standards Association

Pursuant to at the directive 2004/108/EC article 9(2)

Panasonic Testing Centre

a division of Panasonic Marketing Europe GmbH Winsbergring 15.22525 Hamburg, F.R. Germany

* When exporting this product, follow statutory provisions of the destination country

MUMA

0.05 to 0.4

0.05

0.1

0.2

0.4

 \bigcirc

(5000)

 \bigcirc

 \bigcirc

Ultra low inertia

1
O C
<u> </u>
ā
U.

ith*	

SMT machines Inserters

High repetitive

positioning

application

Except shaft Small capacity

connector

MINAS E series

Model Designation

Servo Motor

M U M A 5 A Z P 1 S **

Symbol MUMA Ultra low inertia (50 W to 400 W)

Motor rated output

Symbol	Rated output
5A	50 W
01	100 W
02	200 W
04	400 W

Voltage specifications Symbol Specifications

100 V 2 200 V 100 V/200 V common Z (50 W only)

Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Special specifications

Motor structure

	TI dotal o				
	Shaft	Holding brake		Oil seal	
Symbol	Key-way, center tap	without	with	without	with*
S	•	•		•	
Т	•		•	•	

* Motor with oil seal is manufactured by order.

Design order

Symbol	Specifications
1	Standard

See P.227 for motor specifications

Motor with gear reducer

M U M A 0 1 1 P 3 1 N

Motor rated output Symbol Rated output Symbol Type 01 100 W Ultra low inertia MUMA (100 W to 400 W) 02 200 W 04 400 W

voltage specifications			
Symbol	Specifications		
1	100 V		
2	200 V		

Rotary encoder specifications

,				
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Gear reduction ration, gear type

	Gear	Motor output (W)			_	
Symbol	reduction ratio	100	200	400	Gear type	
1N	1/5	•	•	•	Fau biada	
2N	1/9	•	•	•	For high accuracy	
4N	1/25	•	•	•	accuracy	

Motor structure

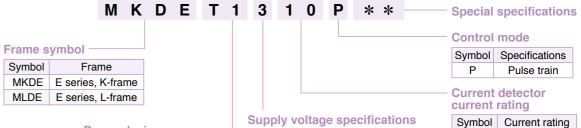
Symbol	Shaft	Holding bra	
	Key-way	without	with
3	•	•	
4	•		•

See P.232 for motor with gear reducer specifications

05

10

Servo Driver



Supply voltage specifications

Dower device				. on ago openinon
			Symbol	Specifications
			1	Single phase, 100 V
,			2	Single phase, 200 V
			3	3-phase, 200 V
12	15 A		5	Single/3-phase, 200 V
	Max. cu	T1 10 A	Max. current rating Symbol Current rating T1 10 A	Power device Max. current rating Symbol Current rating T1 10 A T2 15 A Symbol 3

See P.223 for driver specifications

5 A

10 A

Motor Power capacity Circuit Breaker Power supply Series Output (Rated current) (at rated) output / 0.3 kVA 50 W 100 W 0.4 kVA

List of recommended peripheral equipments

Single (5 A) 10 A phase. (3P+1a)100 V 200 W 0.5 kVA (10 A)50 W 0.3 kVA Single 100 W (5 A) 15 A phase, (3P+1a) MUMA 200 W 0.5 kVA DV0P4160 200 V 400 W 0.9 kVA (10 A) 50 W 0.3 kVA 100 W (5 A) 10 A 3-phase

(10 A)

* Select the single and 3-phase common specifications corresponding to the power supplies.

0.5 kVA

0.9 kVA

- To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, (9) marked) between noise filter and power supply.
- For details of the noise filters, refer to P.256.

<Remarks>

200 V

· Use a copper conductor cables with temperature rating of 60 °C or higher for main power connector and ground

200 W

400 W

Use a cable for ground with diameter of 2.0 mm² (AWG14) or larger.

Noise Filter

Carrying p	Carrying page								
	Part No.	Carrying page							
Console				DV0P4420	241				
Setup Support Software, PANATERM			Japanese English	DV0P4460	236				
RS232 Commu (for Connection				DV0P1960	241				
Interface Cable)			DV0P0800	241				
Connector Kit f	or E	xter	nal Equipment	DV0P0770	240				
Connector Kit f	or N	/lotor	and Encoder	DV0P3670	239				
Connector Kit f	or E)rive	Power Supply	DV0P2870	239				
Encoder Cable			MFECA0 * *	0EAM	238				
Motor Cable			MFMCA0 * * 0AEB		238				
Brake Cable			MFMCB0 * * 0GET		238				
Cable Set (3 m) ^{(Not}	te 3)	DV0P37300	238					
Cable Set (5 m) ^{(Not}	te 3)	DV0P39200		238				
DIN Rail Moun	t Un	it	DV0P3811		242				
External	10	0 V	50 Ω 10 W	DV0P2890	242				
Regenerative Resistor	20	0 V	100 Ω 10 W	DV0P2891	242				
			100 V	DV0P227					
Reactor			100 V	DV0P228	243				
			200 V	DV0P220					
Noise Filter				DV0P4160	256				
		gle phase 0 V, 200 V	DV0P4190	256					
		3-p	hase 200 V	DV0P1450					
Noise Filter for	DV0P1460	256							

Magnetic

Contactor

Contact

(3P+1a)

Composition

Wire diameter

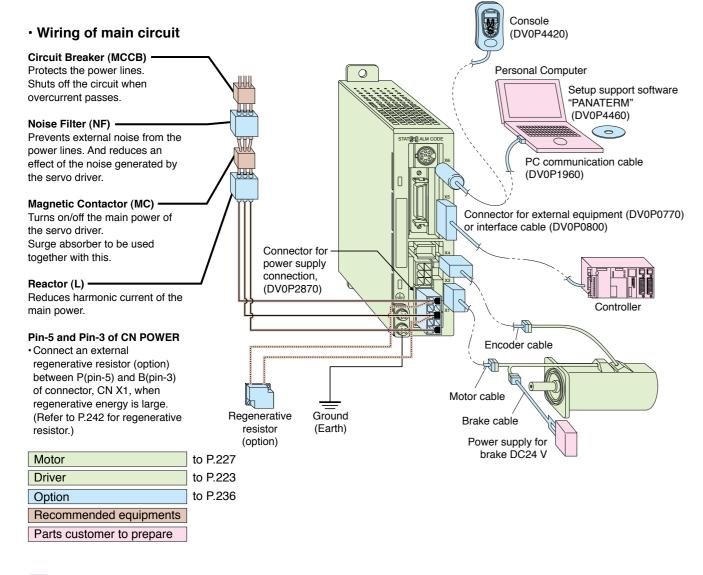
(L1, L2, L3, U, V and W)

0.75 mm2 to 0.85 mm2

AWG18

(Note 3) Cable set (3 m) contains,

- 1) Interface cable: DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m) : MFMCA0030AEB
- 4) Connector kit for driver power supply connection: DV0P2870 Cable set (5 m) contains,
- 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m): MFECA0050EAM
- 3) Motor cable (5 m) : MFMCA0050AEB
- 4) Connector kit for driver power supply connection: DV0P2870



Overall Wiring/ Driver and List of Applicable Peripheral Equipments

■ Table of Part Numbers and Options

MINAS E Series

		2500P/r, Incremental			Option								
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable		Brake Cable	External Regenerative Resistor	Reactor	Noise Filter	
Single	50	MUMA5AZP1 □	227	MKDET1105P	226 (K)					DV0P2890	DV0P227		
phase	100	MUMA011P1 🗌	227	MKDET1110P	226 (K)						DVUFZZI		
100 V	200	MUMA021P1 🗌	227	MLDET2110P	226 (L)	MFECA0**0EAM MFMCA0**0AEB			Ι	DV0P228			
	50	MUMA5AZP1	229	MKDET1505P	226 (K)								
Single	100	MUMA012P1	229	MKDET1505P	226 (K)		MFMCA0**0AEB						
phase 200 V	200	MUMA022P1	229	MLDET2210P	226 (L)							D\/0D4400	
	400	MUMA042P1	229	MLDET2510P	226 (L)			MFMCB0 * * 0GET	Г		DV0P4160		
	50	MUMA5AZP1	229	MKDET1505P	226 (K)			(K)				DV0P2891	DV0P220
	100	MUMA012P1	229	MKDET1505P	226 (K)								
3-phase 200 V	200	MUMA022P1	229	MKDET1310P	226 (K)								
	400	100 111111101001	MUNAA 40D4 🗆	MLDET2510P									
	400	MUMA042P1	229	MLDET2310P	226 (L)								

- Note) 1 Motor model number suffix:
 - S: Key way with center tap, without brake
 - T: Kew way with center tap, with brake
- Note) 2 ** represents cable length. For details, refer to P.237.

222

Driver Specifications

	万	Sing	le phase, 100 V	Single phase, 100 V to 115 V +10 % 50 Hz/60 Hz			
	Input power	Sing	le phase, 200 V	Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz			
	ver	3-ph	ase, 200 V	3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz			
	E	Tem	perature	Operating: 0 °C to 55 °C, Storage: –20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>			
	Environment	Hum	nidity	Both operating and storage : 90 %RH or less (free from condensation)			
	me	Altitu	ıde	1000 m or lower			
	큐	Vibra	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)			
Ва	With	stand	voltage	Should be 1500 VAC (Sensed current: 20 mA) for 1 minute between Primary and Ground.			
sic s		trol me		IGBT PWM Sinusoidal wave drive			
pec	Enco	oder fe	eedback	2500 P/r (10000 resolution) incremental encoder			
ifica		Inpu	 †	7 inputs (1) Servo-ON, (2) Alarm clear and other inputs vary depending on the control mode.			
Basic Specifications	Control signal	Outp		4 outputs (1) Servo alarm, (2) Alarm,			
				(3) Release signal of external brake and other outputs vary depending on the control mode.			
	Pulse signal	Inpu		2 inputs Supports both line driver I/F and open collector I/F. 4 outputs Feed out the encoder pulse (A, B and Z-phase) in line driver.			
		Outp		Z-phase pulse is also feed out in open collector.			
			cation function RS232	1 : 1 communication to a host with RS232 interface is enabled.			
	Disp	lay LE	ED	(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)			
	Rege	enerat	tion	No built-in regenerative resistor (external resistor only)			
	Dyna	amic b	rake	Built-in			
	Cont	trol mo	ode	3 modes of (1) High-speed position control, (2) Internal velocity control and (3) High-functionality positioning control are selectable with parameter.			
		Control input Control output		(1) CW over-travel inhibition,(2) CCW over-travel inhibition,(3) Deviation counter clear,(4) Gain switching,(5) Electronic gear switching			
				(1) Positioning complete (In-position)			
	Position control		Max. command pulse frequency	Line driver : 500 kpps, Open collector : 200 kpps			
	n conti	Pulse input	Type of input pulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)			
	<u>0</u>	input	Electronic gear (Division/Multiplication of command pulse	Setup of electronic gear ratio Setup range of (1-10000) × 2 ⁽⁰⁻¹⁷⁾ /(1-10000)			
			Smoothing filter	Primary delay filter or FIR type filter is selectable to the command input.			
	Inte	Con	trol input	(1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Selection 1 of internal command speed, (4) Selection 2 of internal command speed, (5) Speed zero clamp			
	Internal speed	Con	trol output	(1) Speed arrival (at-speed)			
	spe	Inter	nal speed command	Internal 4-speed is selectable with control input.			
	ed control	Soft	-start/down function	Individual setup of acceleration and deceleration are enabled, with 0 s to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.			
unc-	tro	Zero	-speed clamp	0-clamp of internal speed command with speed zero clamp input is enabled.			
Functions			Real-time	Estimates the load inertia in real-time in actual operation and sets up the gain automatically corresponding to the machine stiffness. Useable at (1) High-response position control, (2) Internal speed control and (3) High-functionality position control.			
		Auto-gain tuning	Normal mode	Estimates the load inertia with an action command inside of the driver, and sets up the gain automatically corresponding to setup of the machine stiffness. Useable at (1) High-response position control, (2) Internal speed control and (3) High-functionality position control.			
		Mas inpu	king of unnecessary t	Masking of the following input signal is enabled. (1) Over-travel inhibition, (2) Speed zero clamp, (3) Torque limit switching			
	Common	Divis	sion of encoder feedback e	1 P/r to 2500 P/r (encoder pulses count is the max.).			
	nor	Protective function	Hardware error	Over-voltage, under-voltage, over-speed over-load, over-heat, over-current and encoder error etc.			
		ctive	Software error	Excess position deviation, command pulse division error, EEPROM error etc.			
		Trac	eability of alarm data	Traceable up to past 14 alarms including the present one.			
		Dam	ping control function	Manual setup with parameter			
		Setup	Manual	Console			
		ţup	Setup support software	PANATERM (Supporting OS : Windows98, Windows ME, Windows2000, and WindowsXP)			

Downloaded From Oneyac.com

Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

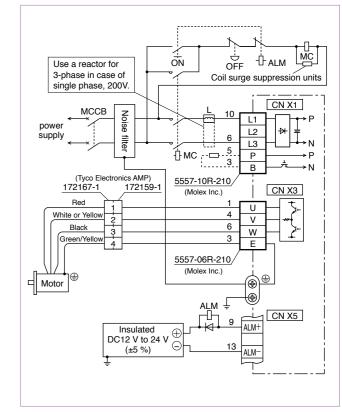
E Series

Wiring Diagram

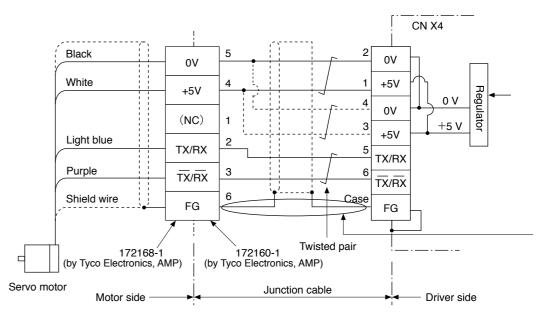
Standard Wiring Example of Main Circuit

3-Phase, 200 V

■ Single Phase, 100 V / 200 V



Encorder Wiring Diagram



When you make your own junction cable for encoder (Refer to P.239, P.240 "Options" for connector.)

- 1) Refer the wiring diagram.
- 2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher bending resistance.
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

Connect the shield of the driver to the case of CN X4.

Connect the shield of the motor to Pin-6.

Informatio

Servo-ON input

Alarm clear input

multiplication switching

Positioning complete output

22 PULS1

23 PULS2

_24 SIGN1

Servo-ON input

Alarm clear input

 $\frac{V_{DC}-1.5}{R+220} = 10 \text{ mA}$

Ψ**≑**

CN X 5 Wiring Example at Internal Velocity Control Mode

Servo alarm output

Brake release output

Warning output

V_{DC} Spec. of R 12 V 1 kΩ1/2 W

24 V 2 kΩ1/2 W

(Select with Pr09)

12 V to 24 V

Gain switching/ Torque limit switching input

Deviation counter clear input 4

CW over-travel inhibition input 7

CCW over-travel inhibition input 8

CN X 5 Wiring Example at Position Control Mode

COM+

SRV-ON

A-CLR

CL

GAIN

DIV

CWL

CCWL

COIN

BRKOFF

COM-

FG

COM+

SRV-ON

INTSPD2

3 A-CLR

26

FG

12 WARN

4.7 kΩ

**

= CN X5

This fig. shows the usage of an external control signal power supply.

You need to install an resistor R for current limit corresponding to VDC.

‡▼ 220 Ω

PULS1

PULS2

SIGN1

Control Circuit Standard Wiring Example

PULS1

PULS2

SIGN1

SIGN2

GND

OA+

OA-

OB+

OB-

OZ+

OZ-

‡ቑ 220 Ω

220 Ω

Refer to Fig. 1 in case of

Command

pulse input

Pay attention in case of CW, CCW

→ A-phase output

→ B-phase output

→ Z-phase output

\\\

pulse line.

open collector input

330 Ω[

330 Ω[

Z-phase output (open collector)

Z-phase output

(open collector)

Name plate

Mass: 0.40 kg

0000000

[unit: mm]







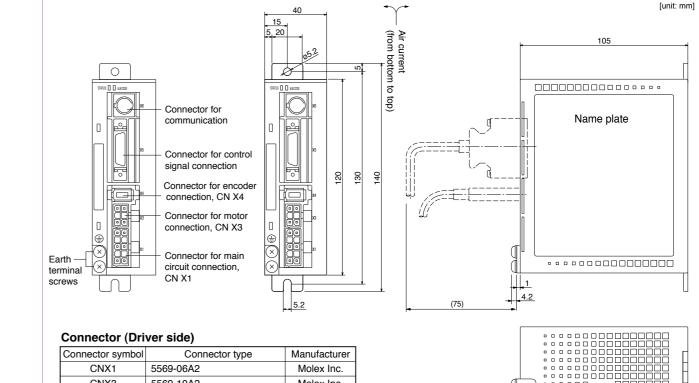


Mass: 0.35 kg

Frame L

terminal

Frame K



Manufacturer

Molex Inc

Molex Inc

Molex Inc.

Manufacturer

Molex Inc.

Molex Inc.

Molex Inc.

15 5, 20

Connector for

Connector for control

Connector for encoder

connection, CN X4

Connector for motor connection, CN X3

Connector for main

Connector type

Connector type

10226-52A11L(or equivalent) Sumitomo 3M

5569-06A2

5569-10A2

53460-0621

10226-52A11L(or equivalent) | Sumitomo 3M

circuit connection,

CN X1

5569-06A2

5569-10A2

53460-0621

Connector (Driver side)

Connector symbol

CNX1

CNX3

CNX4

CNX5

Connector symbol

CNX1

CNX3

CNX4

CNX5

signal connection

Speed zero clamp input/ Torque limit switching input/Zero speed 5 ZEROSPD SIGN2 GND 12 V to 24 V INTSPD1 CW over-travel inhibition input 7 OA+ CWL → A-phase output CCW over-travel inhibition input 8 OA-**CCWL** OB+ Servo alarm output 330 Ω B-phase output ALM OB-OZ+ Achived speed output 330 Ω[Z-phase output COIN OZ-Brake release output BRKOFF \\\ Warning output 12 WARN (Select with Pr09) COM-

4.7 kΩ

Motor Specifications

100 V **MUMA** 50 W to 200 W

AC100 V 5AZP1 011P1 021P1 MUMA Motor model Model No. MKDET1105P MKDET1110P MLDET2110P Applicable driver Frame symbol Frame K Frame L Power supply capacity (kVA) 0.5 0.3 0.4 50 Rated output (W) 100 200 Rated torque (N·m) 0.16 0.32 0.64 Momentary Max. peak torque (N·m) 0.48 0.95 1.91 Rated current (Arms) 2.5 1.0 1.6 Max. current (Ao-p) 4.3 6.9 11.7 Regenerative brake Without option No limit Note)2 frequency DV0P2890 No limit Note)2 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia Without brake 0.021 0.032 0.10 of rotor (×10⁻⁴ kg·m²) 0.026 0.036 0.13 Recommended moment of inertia ratio 30 times or less of the load and the rotor Note)3 2500 P/r Rotary encoder specifications Incremental 10000 Resolution per single turn Protective enclosure rating IP65 (except rotating portion of output shaft and lead wire end) 0 °C to 40 °C (free from freezing), Storage : –20 °C to 65 °C Ambient temperature (Max.temperature guarantee 80 °C for 72 hours <nomal humidity>) 85 %RH or lower (free from condensing) Ambient humidity Environment Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust Installation location 1000 m or lower Altitude 49 m/s2 or less Vibration resistance Mass (kg), () represents holding brake type 0.4 (0.6) 0.5 (0.7) 0.96 (1.36)

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)					
Static friction torque (N m)	0.29	1.27			
Engaging time (ms)	25	50			
Releasing time (ms) Note)4	20 (30)	15 (100)			
Exciting current (DC) (A)	0.26	0.36			
Releasing voltage	DC 1 V or more				
Exciting voltage	DV 24 V ±10 %				

Permissible load					
During assembly	Radial load P-direction (N)	147	392		
	Thrust load A-direction (N)	88	147		
	Thrust load B-direction (N)	117	196		
	Radial load P-direction (N)	68	245		
During operation	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

For motor dimensions, refer to P.231, and for the diver, refer to P.226.

Model Designation

Design order

Symbol Type Ultra low inertia MUMA (50 W to 200 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W

Voltage specifications Symbol Specifications 100 V 100/200 V Z (50 W only)

1 : Standard

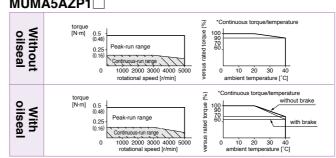
Symbol	Shaft	Holding	brake	Oil s	eal		
	Key-way, center tap	without	with	without	with		
S	•	•		•			
Т	•		•	•			

Rotary encoder specifications

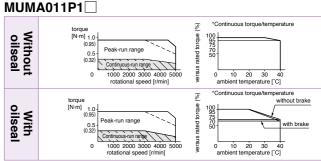
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

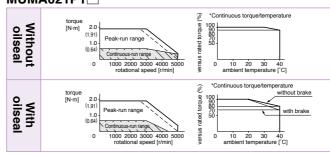
MUMA5AZP1



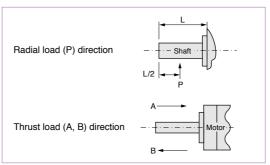
Without oilseal



MUMA021P1



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well. Running range (Torque limit setup: 300 %) Running range (Torque limit setup: 200 %) Running range (Torque limit setup: 100 %



- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m =(load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC115 V (at 100 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/115) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer. 2. If the effective torque is within the rated torque, there is no limit in regenera-
 - tive brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent). () represents the actually measured value using a diode (200 V, 1 A or
 - equivalent)

Motor Specifications

200 V **MUMA** 50 W to 400 W

Low inertia

AC200 V 5AZP1 012P1 022P1 042P1 MUMA Motor model MKDET1310P MLDET2310P Model No MKDET1505P MKDET2210P MLDET2510P Applicable driver Frame K Frame symbol Frame K Frame L Frame L 0.3 0.3 0.5 0.9 Power supply capacity (kVA) 100 50 200 400 Rated output (W) 0.16 0.32 0.64 1.3 Rated torque (N · m) 0.48 0.95 1.91 3.8 Momentary Max. peak torque (N · m) 1.0 1.0 1.6 25 Rated current (Arms) 4.3 Max. current (Ao-p) 4.3 7.5 11.7 Regenerative brake Without option No limit Note)2 frequency (times/min) DV0P2891 No limit Note)2 Note)1 Rated rotational speed (r/min) 3000 Max. rotational speed (r/min) 5000 Moment of inertia Without brake 0.021 0.032 0.10 0.17 of rotor With brake 0.026 0.036 0.13 0.20 (×10⁻⁴ kg·m²) Recommended moment of inertia ratio 30 times or less of the load and the rotor Note)3 2500 P/r Rotary encoder specifications Incremental Resolution per single turn 10000 IP65 (except rotating portion of output shaft and lead wire end) Protective enclosure rating 0 $^{\circ}$ C to 40 $^{\circ}$ C (free from freezing), Storage : –20 $^{\circ}$ C to 65 $^{\circ}$ C Ambient temperature (Max.temperature guarantee 80 °C for 72 hours <nomal humidity>) Ambient humidity 85 %RH or lower (free from condensing) Environment Installation location Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust Altitude 1000 m or lower Vibration resistance 49 m/s2 or less Mass (kg), () represents holding brake type 0.4 (0.6) 0.5 (0.7) 1.5 (1.9) 0.96 (1.36)

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)						
Static friction torque (N · m)	0.29	1.27				
Engaging time (ms)	25	50				
Releasing time (ms) Note)4	20 (30)	15 (100)				
Exciting current (DC) (A)	0.26 0.36					
Releasing voltage	DC 1 V or more					
Exciting voltage	DV 24 V ±10 %					

Permissible load					
During assembly	Radial load P-direction (N)	147	392		
	Thrust load A-direction (N)	88	147		
,	Thrust load B-direction (N)	117	196		
	Radial load P-direction (N)	68	245		
During operation	Thrust load A-direction (N)	58	98		
	Thrust load B-direction (N)	58	98		

For motor dimensions, refer to P.231, and for the driver, refer to P.226.

Note) Driver for 50 W and 100 W has a common power supply of single phase and 3-phase 200 V.

Driver for 200 W, the upper row is the power supply of 3-phase 200 V, and lower is the power supply of single-phase 200 V.

Driver for 400 W, the upper row is the power supply of 3-phase 200 V, and lower is the common power supply of single-phase and 3-phase 200 V.

Model Designation

M S

Symbol Type Ultra low inertia MUMA (50 W to 400 W)

Motor rated output Symbol Rated output 5A 50 W 01 100 W 02 200 W 04 400 W

Voltage specifications Symbol Specifications 2 200 V 100/200 V Z (50 W only)

Design order 1 : Standard

Motor structure

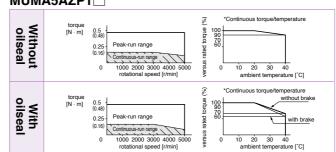
Symbol	Shaft	Holding	brake	Oil s	eal		
	Key-way, center tap	without	with	without	with		
S	•	•		•			
Т	•		•	•			

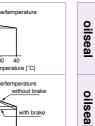
Rotary encoder specifications

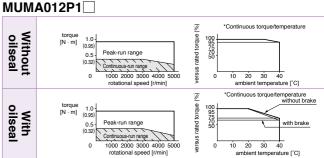
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

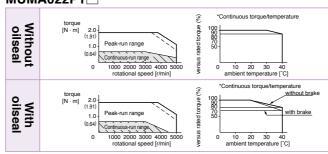
MUMA5AZP1





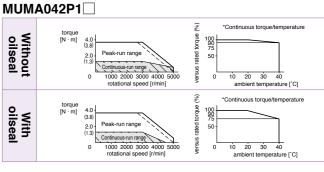


MUMA022P1

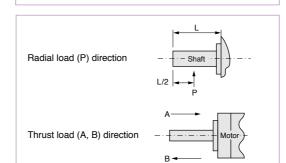


Running range (Torque limit setup : 100 %





*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well. Running range (Torque limit setup: 300 %) Running range (Torque limit setup: 200 %)



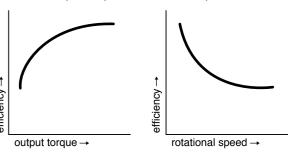
- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m =(load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC240 V (at 200 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/240) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 - 2. If the effective torque is within the rated torque, there is no limit in regenerative brake
 - 3. Consult us or a dealer if the load moment of inertia exceeds the specified
 - 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by SEMITEC Corporation or equivalent).
 - () represents the actually measured value using a diode (200 V, 1 A or equivalent)

MINAS E Series Motors with Gear Reducer

Motor Types with Gear Reducer

	Reduction ratio	Мо	tor output ((W)	Type of
		100	200	400	reducer
	1/5	•	•	•	
	1/9	•	•	•	For high precision
	1/25	•	•	•	precision

Efficiency of the gear reducer shows the following inclination in relation to output torque and rotational speed.



Model	No.	Desi	gnation
-------	-----	------	---------

e.g.) M U M A

Symbol Type Low inertia MUMA (100 to 400 W) Motor rated output Symbol Rated output Voltage specifications 01 100 W Symbol Specifications 02 200 W 100 V 04 400 W

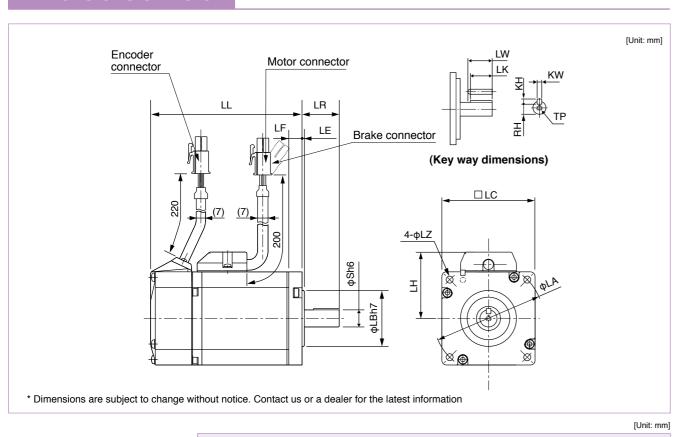
		2	200 V	
Rotary en	coder specifications			
Symbol	Format	Pulse counts	Pulse counts	Wire
Р	Incremental	2500 P/r	10000	5

Motor types with gear reducer Reduction 100 200 400 ratio For High 2N 1/9 4N 1/25

lotor structure									
Symbol	Shaft	Holding	brake						
Зуппоот	Key-way	without	with						
3	•	•							
4									

Specifications of Motor with Gear Reducer

	Motor type	MUMA				
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer				
	Composition of gear	Planetary gear				
	Gear efficiency	65 % to 85 %				
0	Rotational direction at output shaft (of reducer)	Same direction as the motor output shaft				
Gear	Composition of gear	Planetary gear				
reducer	Mounting method	Flange mounting				
	Permissible moment of inertia of the load	10 times or smaller than rotor moment of inertia of the motor				
	(conversion to the motor shaft)					
	Protective structure	IP44 (at gear reducer)				
	Ambient temperature	0 °C to 40 °C				
	Ambient humidity	85 %RH (free from condensation) or less				
Environment	Vibration resistance	49 m/s ² or less (at motor frame)				
	Impact resistance	98 m/s² or less				



MUMA series (Ultra low inertia)

MUMA 50 W to 400 W

					(
Motor outpu	ıt		50 W	100 W	200 W	400 W		
Motor model MUMA			5A□P1□	01□P1□	02□P1□	04□P1□		
Rotary encoder specifications		2500 P/r	2500 P/r	2500 P/r	2500 P/r			
riotary cricc	aci spec	modions	Incremental	Incremental	Incremental	Incremental		
L L Without bra		Without brake	75.5	92.5	96	123.5		
LL		With brake	107	124	129	156.5		
	LR		24	24	30	30		
	S		8	8	11	14		
	LA		48	48	70	0 70		
	LB		22	22	50 50			
	LC		42	42	60	60		
	LE		2	2 3		3		
	LF		7 7 7		7	7		
	LH		34	34	43	43		
	LZ		3.4	3.4	4.5	4.5		
	LW		14	14	20	25		
	LK		12.5	12.5	18	22.5		
Kan man	KW		3h9	3h9	4h9	5h9		
Key way	КН		3	3	4	5		
	RH		6.2	6.2	8.5	11		
	TP		M3 × 6 (depth)	M3 × 6 (depth)	M4 × 8 (depth)	M5 × 10 (depth)		
Mass (kg)		Without brake	0.40	0.50	0.96	1.5		
iviass (Kg)		With brake	0.60	1.9				
Connector/F	Plug spec	cifications		refer to Options	s, P.239, P.240.			

<Cautions>

Reduce the moment of inertia ratio if high speed response operation is required.

Read the Instruction Manual carefully and understand all precautions and remarks before using the products.

Motors with Gear Reducer

Table of Motor Specifications/ The Combination of the Driver and the Motor

Table of Motor with Gear Reducer Specifications

	Motor					М	JMA with g	ear reduc	er					
Model	Output	Reduction	Output	Rated speed	Max.	Rated		Moment of inertia (motor + reducer/converted) to motor shaft		·		Permissible radial load	Permissible thrust load	
		ratio			speed	torque	torque	w/o brake	w/ brake	w/o brake	w/ brake	radiai idad	เทเนรเาบสน	
	(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J (× 10 ⁻⁴ kg·m ²)		(k	g)	(N)	(N)	
MUMA01□P□1N		1/5	75	600	1000	1.18	3.72	0.072	0.076	1.05	1.25	490	245	
MUMA01□P□2N	100	1/9	80	333	555	2.25	6.86	0.0663	0.0703	1.05	1.25	588	294	
MUMA01□P□4N		1/25	80	120	200	6.27	19.0	0.0645	0.0685	2.20	2.40	1670	833	
MUMA02□P□1N		1/5	170	600	1000	2.65	8.04	0.218	0.248	1.68	2.08	490	245	
MUMA02□P□2N	200	1/9	132	333	555	3.72	11.3	0.368	0.398	2.66	3.06	1180	588	
MUMA02□P□4N		1/25	140	120	200	11.1	33.3	0.388	0.418	2.66	3.06	1670	833	
MUMA042P□1N		1/5	340	600	1000	5.39	16.2	0.533	0.563	3.2	3.6	980	490	
MUMA042P□2N	400	1/9	332	333	555	9.51	28.5	0.438	0.468	3.2	3.6	1180	588	
MUMA042P□4N		1/25	332	120	200	26.4	79.2	0.470	0.500	4.7	5.1	2060	1030	

For dimensions, refer to P.235.

The Combination of the Driver and the Motor with Gear Reducer

Combination w	ith driver	10	0 V		200 V		
Encoder	Motor	Part No. of motor	Single phase, 100 V	Part No. of motor	3-phase, 200 V	Single phase, 200 V	
Elicodei	output	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver	Part No. of driver	
	100 W	MUMA011P□□N	MKDET1110P	MUMA012P□□N	MKDET1505P	MKDET1505P	
2500 P/r	200 W	MUMA021P□□N	MLDET2110P	MUMA022P□□N	MKDET1310P	MLDET2210P	
Incremental	400 W			MUMA042P□□N	MLDET2510P	MLDET2510P	
	400 00	_	_	MUMAU42PULIN	MLDET2310P	WILDL 12310F	

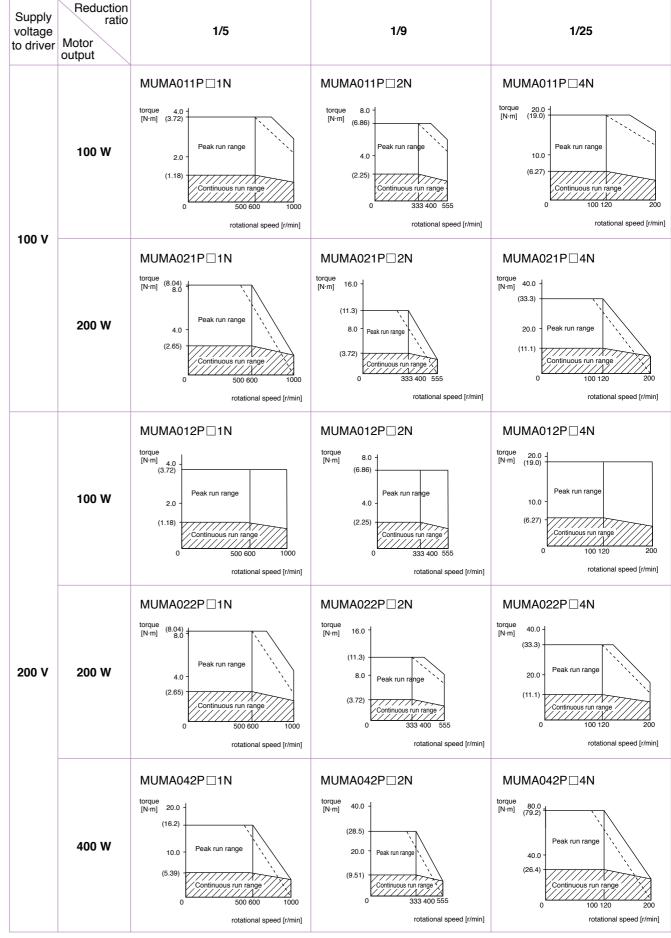
For dimensions, refer to P.235.

E Series

Torque Characteristics

Motors with Gear Reducer

For High Precision (MUMA Series 100 W to 400 W)



Dotted line represents the torque at 10 % less supply voltage.

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formation

Setup Support Software

MUMA series with Gear Reducer

Encoder connecter (AMP)

Brake connector (AMP)

Motor Dimensions

2500 P/r Encoder

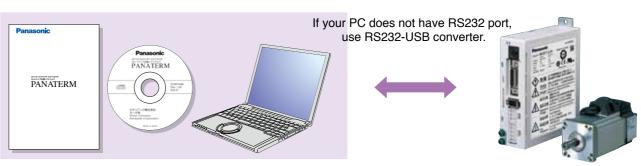
Madal	Motor	Reduction		LL	LR	LQ	LC	LB	LA	s	LH	LZ	LK	(1.0)	LE	Key way	Jnit: mm] T		
Model	output	ratio	L	LL	LH	LQ	LC	LD	LA	3	LIT	LZ	LN	(LG)	LE	B×H×LD	'		
MUMA01□P□1N		1/5	192	92.5															
					223.5	124	32	20	52	50	60	12	10	M5	18	67.5		4×4×16	2.5
MUMA01□P□2N	100 W	100 W	100 W	1/9	192	92.5	02	20	52	50	00	12	10	(Depth: 12)	10	07.5		סוגדגד	2.5
WOW/OILI LEV	100 00	173	223.5	124															
MUMA01□P□4N		1/25	234.5	92.5	50	30	78	70	90	19	17	M6	26	92	3	6×6×22	3.5		
WOWAUTET EN		1/23	266	124	50	30	30 /8	70	90	19	17	(Depth: 20)	20	92		OXOXZZ	3.5		
MUMA02 P 1N		1/5	200.5	96	32	32 20	20	20 52	50	60	12	10 10	10 M5	18	72.5		4×4×16	2.5	
WOWAUZ_F_TN		173	233.5	129	32	20	20 32	50	00	12	10	(Depth: 12)	10	72.5		4x4x10	2.5		
MUMA02 P 2N	200 W	1/9	235.5	96									89.5						
WOWAUZ_F_ZN	200 W	179	268.5	129											09.5				
MUMA02 P 4N		1/25	246	96						19 17		M6	26	100	1		0.5		
WUWAUZ_F_4N		1/23	279	129	50	30	78		90					100		6600			
MUMA042P□1N		1/5	263	123.5	50	30	/6	70	90		17	(Depth: 20)				6×6×22	3.5		
WOWAU42F_IN		175	296	156.5										20.5					
MUMA O 4 O D TON	400 144	1/9	263	123.5										89.5					
MUMA042P□2N	400 W	1/9	296	156.5															
MUMAO 40D TAN	1	1/05	288.5	123.5		40		l	1			M8		İ	_	0.7.00			
MUMA042P□4N		1/25	321.5	156.5	61	40	98	90	115	24	18	(Depth: 20)	35	104	5	8×7×30	4		

Upper column : without brake

Setup Support Software "PANATERM" for MINAS series AC Servo Motor & Driver

Part No. DV0P4460 (Japanese/English version)

The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A4 series, E series through the RS232 serial interface.



Basic Function

Parameter setup

- After a parameter is defined on the screen, it will be sent to the driver immediately.
- Once you register parameters you frequently use, they can be easily set up on the screen.

Monitoring Control Conditions

Monitor

- · Control conditions: Control mode, velocity, torque, error and warning
- Driver input signal
- Load conditions: Total count of command/feedback pulses, Load ratio, Regenerative resistor load ratio

Alarm

- Displays the numbers and contents of the current alarm and up to 14 error events in the past.
- Clears the numbers and contents of the current alarm and up to 14 error events in the past.

Setup

Auto tuning

· Gain adjustment and inertia ratio measurement

Graphic waveform display

 The graphic display shows command velocity, actual velocity, torque, and error waveforms.

Absolute encoder setup

- Clears absolute encoder at the origin.
- Displays single revolution/multi-revolution data.
- Displays absolute encoder status.

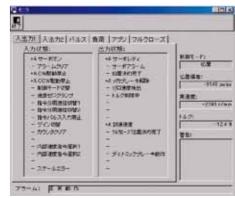
Analysis of Mechanical Operation Data

Frequency analysis

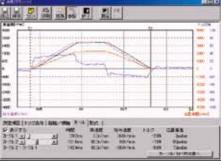
• Measures frequency characteristics of the machine, and displays Bode diagram.

■ Can not use with A5 family.

Parameter



Monitor



Graphic waveform display

Hardware configuration

[Personal computer] • CPU : Pentium 100MHz or more • Memory : 16 MB or more (32 MB recommended)

- Hard disk capacity (vacancy of 25 MB or more recommended) OS: Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version)
- Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

 $\textbf{[Display]} \cdot \text{Resolution} : 640^*480 \text{ (VGA) or more (desirably } 1024^*768) \\ \cdot \text{Number of colors} : 256 \text{ colors or more} \\ \text{(VGA)} \cdot \text{(VGA)} = 1000 \text{ (VGA)} \\ \text{(VGA)} = 1000 \text{ (VGA)}$

[CD-ROM drive] · CD-ROM drive operable on the above-mentioned personal computer

Cable

Series

Cable Set (3 m)

Part No. DV0P37300

- 1) Interface cable : DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m): MFMCA0030AEB
- Connector kit for driver power supply connection : DV0P2870

Cable Set (5 m)

- Part No. DV0P39200
- 1) Interface cable : DV0P0800
- 2) Encoder cable (5 m): MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

Encoder Cable

Part No. MFECA0 * * 0EAM

Part No. MFMCA0 * * 0AEB

[Unit: mm]

Part No.

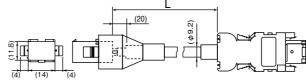
MFECA0030EAM

MFECA0050EAM

MFECA0100EAM MFECA0200EAM

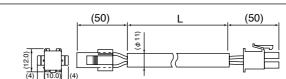
[Unit: mm]

[Unit: mm]



Title	Part No.	Manufacturer		L (m)
Connector (Driver side)	3E206-0100KV	Sumitomo 3M		3
Shell kit	3E306-3200-008	or equivalent		5
Connector	172160-1	Tugo Flootronico		10
Connector Pin	170365-1	Tyco Electronics		20
Cable	0.20 mm ² x 3P	Oki Electric Cable Co., Ltd.		

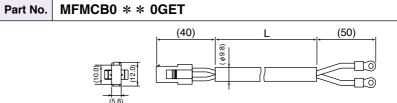
ROBO-TOP_® is a trade mark of DYDEN CORPORATION



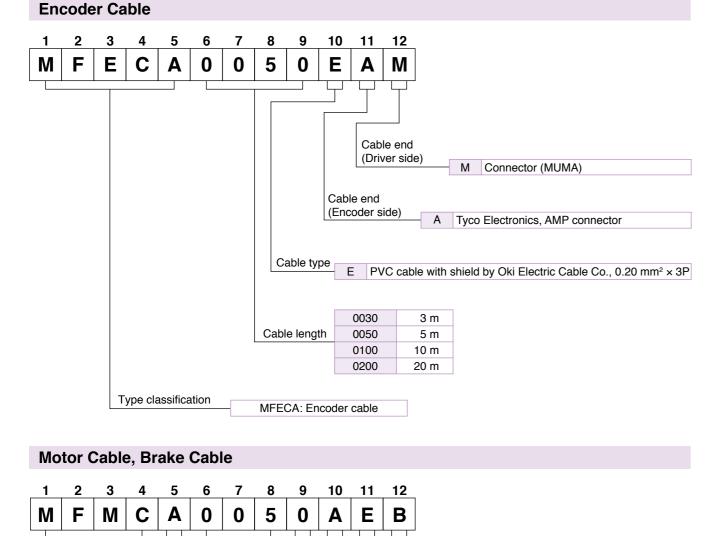
Title	Part No.	Manufacturer	L (m)	Part No.	
Connector	172159-1	Tugo Floatronico	3	MFMCA0030AEB	
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCA0050AEB	
Connector	5557-06R-210	Molex Inc	10	MFMCA0100AEB	
Connector Pin	5556T	WOIEX IIIC	20	MFMCA0200AEB	
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden CoLtd.			

Brake Cable (ROBO-TOP_® 105 °C 600V . DP)

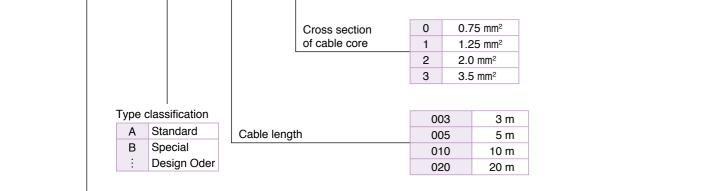
 $\ensuremath{\mathsf{ROBO\text{-}TOP}}\xspace_{\otimes}$ is a trade mark of DYDEN CORPORATION



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Tugo Floatronico	3	MFMCB0030GET
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal N1.25-M4		J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ²	Daiden Co.,Ltd.	20	MFMCB0200GET



Cable part No. Designation



AC servo motor cable

Cable type

Cable end at driver side

Cable end at motor side

B Molex Inc.

T Clamp terminal

E Tyco Electronics, AMP connector

ROBO-TOP_® is a trade mark of DYDEN CORPORATION

A ROBO-TOP® 4-wire (DYDEN CORPORATION)
G ROBO-TOP® 2-wire (DYDEN CORPORATION)

amily

Connector Kit for Power Supply Connection

Part No. DV0P2870

Parts composition

Title	Part No.	Number	Manufacturer	Note	
Connector (10 pins)	5557-10R-210	1	Molex Inc.	For connector, CN X1	
Connector pin	5556PBTL	6	iviolex IIIc.	(10 pins)	

Pin configuration of connector CN X1

نے	<u>, </u>					-/
÷	10	9	8	7	6	H
- 1	L1	(NC)	L2	(NC)	L3	i.
- 1	5	4	3	2	1	i
i	P	(NC)	В	(NC)	E	l i



Recommended manual crimping tool (to be prepared by customer)

Part No.	Cable material
57026-5000	UL1007
57027-5000	UL1015

<Cautions>

- 1. The above pin disposition is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.
- 3. Do not connect anything to pins marked "NC".

Connector Kit for Motor/Encoder Connection

Part No. DV0P3670 (Incremental 2500 pulse, 5-wire)

This option is required when you make your own encoder cable and motor cable. (Brake cable is required for brake.)

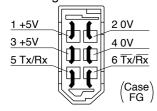
Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV			For connector, CN X4
Shell kit	3E306-3200-008			(6 pins)
Connector (6 pins)	172160-1	1	Tyco Electronics	For junction to encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6 pins)
Connector (4 pins)	172159-1	1	Tyco Electronics	For junction to motor power cable
Connector pin	170366-1	4	Tyco Electronics	(4 pins)
Connector (6 pins)	5557-06R-210	1	Molex Inc.	For connector, CN X3
Connector pin	5556PBTL	4	Molex IIIC.	(6 pins)

<Remarks>

We may use parts equivalent to the above for shell and connector cover.

Pin configuration of connector CN X4 plug



Recommended manual crimping tool (to be prepared by customer)

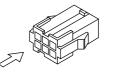
Title	Part No.	Manufacturer	Cable material					
For encoder cable junction	755330-1	Tyco Electronics						
For motor power cable junction	755331-1	Tyco Electronics	_					
For Connector CN X3	57026-5000	Moley Inc	UL1007					
For Connector CN X3	57027-5000	Molex Inc.	UI 1015					

<Remarks>

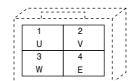
- 1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

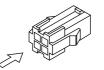
Pin configuration of encoder cable junction

<u> </u>]	_//
	1	2	3	!
	NC	TX/RX	TX/RX	į
	4	5	6	
	+5V	0V	FG	į.



Pin configuration of motor power cable junction





Pin configuration of mating connector to CN X3 connector

<u>.</u>	, 		i	_
1	6	5	4	
	W	(NC)	V	
ı	3	2	1	
	E	(NC)	U	



<Cautions>

- 1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.

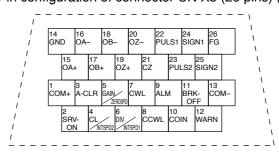
Connector Kit for External Peripheral Equipment

Part No.	DV0P0770

Parts composition

Title Part No. N		Number	Manufacturer	Note	
Connector 10126-3000PE		1	Sumitomo 3M	For connector, CN X5	
	Connector cover	10326-52A0-008	1	or equivalent	(26 pins)

Pin configuration of connector CN X5 (26 pins) (viewed from the soldering side)



<Cautions>

- 1. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.225 for symbols and functions of the above signals.

DIN Rail Mounting Unit/ External Regenerative Resistor

Interface Cable/

Communication Cable/ Console

Wiring table

_	2g							
Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable
1	COM+	Orange (Red 1)	10	COIN	Pink (Black 1)	19	OZ+	Pink (Red 2)
2	SRV-ON	Orange (Black 1)	11	BRK-OFF	Orange (Red 2)	20	OZ-	Pink (Black 2)
3	A-CLR	Gray (Red 1)	12	WARN	Orange (Black 2)	21	CZ	Orange (Red 3)
4	CL/INTSPD2	Gray (Black 1)	13	COM-	Gray (Red 2)	22	PULS1	Gray (Red 3)
5	GAIN/ZEROSPD	White (Red 1)	14	GND	Gray (Black 2)	23	PULS2	Gray (Black 3)
6	DIV/INTSPD1	White (Black 1)	15	OA+	White (Red 2)	24	SIGN1	White (Red 3)
7	CWL	Yellow (Red 1)	16	OA-	White (Black 2)	25	SIGN2	White (Black 3)
8	CCWL	Yellow (Black 1)	17	OB+	Yellow (Red 2)	26	FG	Orange (Black 3)
9	ALM	Pink (Red 1)	18	OB-	Yellow (Black 2)			

<Notes>

e. g. of Pin No. designation: Pin No. 1 Wire color is orange, and one red dot.

MD connector

Pin No. 12 ... Wire color is orange, and two black dot.

<Remarks>

The shield of this cable is not connected to a connector pin. To connect the shield to FG or GND at the driver side, use a connector kit for external device connection.

Communication Cable (For Connection with PC)

2000 Mini-DIN 8P

[Unit: mm]

Console

D-sub connector 9P

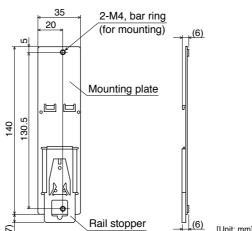
Part No. DV0P4420 (62) M3 length 5 mm Tightening torque for the insert screw shall be 0.5 N·m or less MD connector Mini DIN-8P [Unit: mm]

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DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

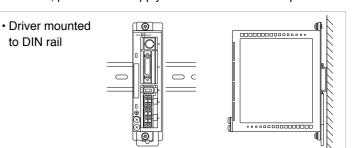


<Notes>

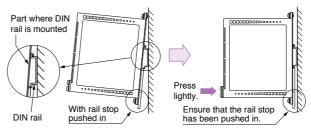
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<Cautions>

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.



· How to Install



Hook the upper side of DIN rail mounting part on the DIN rail.

Press lightly the lower part of the main body of driver.

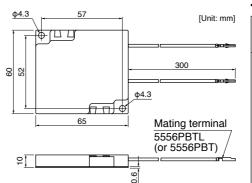
Removing from DIN Rail By lifting the driver, you can remove it from the DIN rail. Pull out the lower part of the driver to the near side. With the rail stop released, pull out the lower part of the driver to the near side.

External Regenerative Resistor

			Specifi		
Part No.	Manufacturer's Part No.	Resistance	Rated power	Activation temperature of built-in fuse	Note (Input Power of drive)
		Ω	W	°C	
DV0P2890	45M03	50	10	137 ⁺³ ₋₂	Single phase, 100 V
DV0P2891	45M03	100	10	137 ⁺³ ₋₂	Single/3-phase, 200 V

Manufactured by Iwaki Musen Kenkyuusho Co., Ltd.

Dimensions



<Caution of when using external regeneration resistor>

Since it becomes high temperature, external regeneration resistor must be installed according to the contents shown below.

- · Attach to incombustibles, such as metal.
- Install in the place which cannot touch directly by covering with incombustibles etc.
- · Do not install near the combustibles.

Although the thermal cutoff is built in external regeneration resistor, the skin temperature of regeneration resistor may become high exceeding the operating temperature of thermal cutoff by the time the thermal cutoff operates in amplifier failure.

The thermal cutoff is for preventing ignition of the regeneration resistor in amplifier failure, and is not for controlling the skin temperature of resistor.

<Remarks>

Thermal fuse is installed for safety.

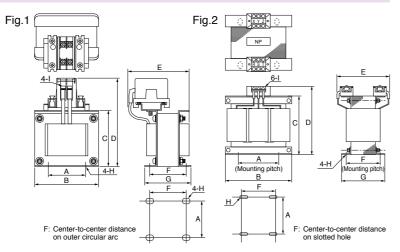
The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation. Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Please carry out air cooling if needed.

E Series

Options

Reactor

Frame symbol of driver	Power supply specifications	Rated output	Part No.	Fig.
	Single phase, 100 V	50 W to 100 W	DV0P227	1
MKDE	Single phase, 200 V	50 W to 100 W	DV0P220	2
	3-phase, 200 V	50 W to 200 W	DV0P220	
	Single phase, 100 V	200 W	DV0P228	1
MLDE	Single phase, 200 V	200 W to 400 W	DV0P220	2
	3-phase, 200 V	400 W		



Surge Absorber for Motor Brake

[Unit: mm]

	Part No.	A	В	С	D	E(Max)	F	G	Н	I	Inductance (mH)	Rated current (A)
Fig. 1	DV0P227	55±0.7	80±1	66.5±1	110 Max	90	41±2	55±2	4-5φ×10	M4	4.02	5
Fig.1	DV0P228	55±0.7	80±1	66.5±1	110 Max	95	46±2	60±2	4-5φ×10	M4	2	8
Fig.2	DV0P220	65±1	125±1	(93)	136 Max	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3

Harmonic restraint on general-purpose inverter and servo driver

Reactor/

On September, 1994, Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system and Guidelines for harmonic restraint on household electrical appliances and generalpurpose articles established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004.

We inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver will be modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

When using a reactor, be sure to install one reactor to one servo driver.

■ Recommended components

Surge Absorber for Motor Brake

Motor	Surge absorber for motor brake			
Motor	Part No. (Manufacturer's)	Manufacturer		
MUMA 50 W to 400 W	Z15D151	SEMITEC Corporation		

List of Peripheral Components

List of Peripheral Components

Manufacturer	Tel No. / Home Page	Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for motor brake
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	Noise filter for signal lines
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/	
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	Connector
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable

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^{*} The above list is for reference only. We may change the manufacturer without notice.

MEMO

Information

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EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products.

However, our AC servos meet the relevant EC Directives for Low Voltage Equipment so that the machine or equipment comprising our AC servos can meet EC Directives.

EMC Directives

MINAS Servo System conforms to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

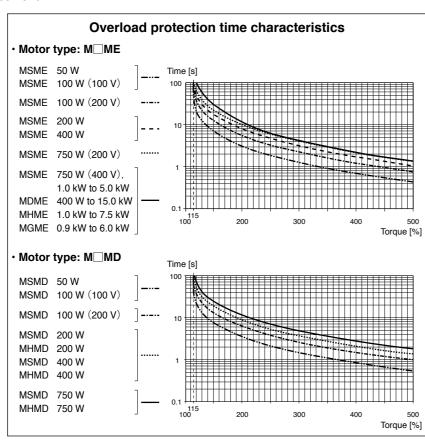
Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Make sure to install a circuit breaker or fuse which are UL recognized (Listed (1) marked) between the power supply and the noise filter.
 - For rated current of circuit breaker and fuse, refer to P.19 "Driver and List of Applicable Peripheral Equipments".
 - Use a copper cable with temperature rating of 75 °C or higher.
- (3) Over-load protection level

Over-load protective function will be activated when the effective current exceeds 115 % or more than the rated current based on the time characteristics (see the graph). Confirm that the effective current of the driver does not exceed the rated current.

Set up the peak permissible current with Pr0.13 (Setup of 1st torque limit) and Pr5.22 (Setup 2nd torque limit).



Conformed Standards

		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 EN61800-3	_
EC	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
Directives	Machinery Directives Functional safety '1	ISO13849-1(PL d)(Cat.3) EN61508(SIL2) EN62061(SILCL 2) EN61800-5-2(STO) IEC61326-3-1	_
UL Standards		UL508C (E164620)	UL1004-1, UL1004-6 (E327868)
CSA Standards		C22.2 No.14	C22.2 No.100
Radio Waves Act (South Korea) (KC) '2		KN11 KN61000-4-2, 3, 4, 5, 6, 8, 11	-

IEC : International Electrotechnical Commission

EN : Europaischen NormenEMC : Electromagnetic CompatibilityUL : Underwriters LaboratoriesCSA : Canadian Standards Association

Pursuant to the directive 2004/108/EC, article 9(2)

Panasonic Testing Centre

Panasonic Service Europe, a division of

Panasonic Marketing Europe GmbH

Winsbergring 15, 22525 Hamburg, F.R. Germany

- When export this product, follow statutory provisions of the destination country.
- *1 A5IIE and A5E series doesn't correspond to the functional safety standard.
- *2 Information related to the Korea Radio Law

This servo driver is a Class A commercial broadcasting radio wave generator not designed for home use. The user and dealer should be aware of this fact.

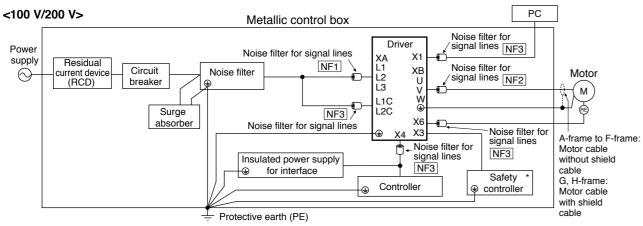
A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종: Servo Driver)

Composition of Peripheral Equipments

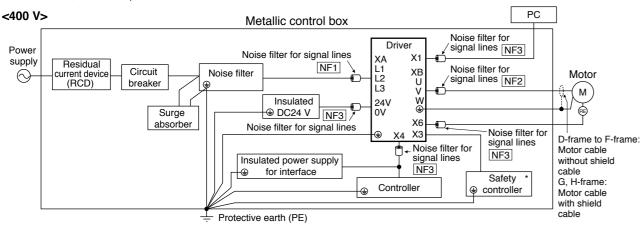
Installation Environment

Use the servo driver in the environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



For NF1 to NF3, refer to the Table "Noise Filter for Signal Line" (P.254).

^{*} A5IIE, A5E is not provided with X3 terminal.



For NF1 to NF3, refer to the Table "Noise Filter for Signal Line" (P.254).

<Caution>

Use options correctly after reading Operating Instructions of the options to better understand the precautions. Take care not to apply excessive stress to each optional part.

Power Supply

100 V type (A-frame to C-frame)	Single phase, 100 V $^{+10}_{-15}\%$ to 120 V $^{+10}_{-15}\%$	50 Hz/60 Hz
200 V type (A-frame to D-frame)	Single/3-phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V type (E-frame to H-frame)	3-phase, 200 V ⁺¹⁰ % to 230 V ⁺¹⁰ % ⁻¹⁵ %	50 Hz/60 Hz
400 V type [Main power supply] (D-frame to H-frame)	3-phase, 380 V ⁺¹⁰ % to 480 V ⁺¹⁰ % ₋₁₅ %	50 Hz/60 Hz
400 V type [Control power supply] (D-frame to H-frame)	DC 24 V ±15 %	

(1) This product is designed to be used in over-voltage category (installation category) **I** of EN 61800-5-1:2007.

Circuit Breaker

Install a circuit breaker which complies with IEC Standards and UL recognized (Listed and marked) between power supply and noise filter.

The short-circuit protection circuit on the product is not for protection of branch circuit.

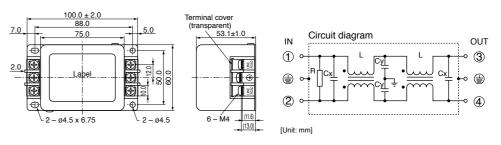
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

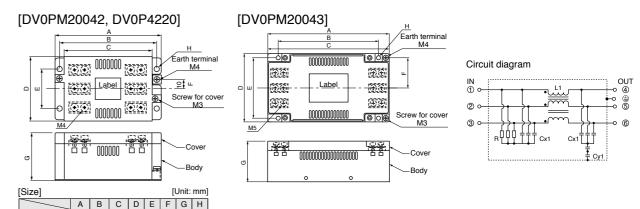
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P4170	Single phase 100 V, 200 V	SUP-EK5-ER-6	A-frame and B-frame	Okaya Electric Ind.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
	3-phase 200 V		A-frame and B-frame	
DV0PM20042	Single phase 100 V, 200 V 3-phase 200 V	3SUP-HU10-ER-6	C-frame	Okaya Electric Ind.
DV0P4220	Single/3-phase 200 V	3SUP-HU30-ER-6	D-frame	
DV0PM20043	3-phase 200 V	3SUP-HU50-ER-6	E-frame	



DV0PM20042 115 105 95 70 43 10 52 5.5 DV0P4220 145 135 125 70 50 10 52 5.5 DV0PM20043 165 136 165 90 80 40 54 5.5 leaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

⁽²⁾ Use an insulated power supply of DC12 V to 24 V which has CE marking or complies with EN60950.

Option part No.

DV0P3410

Applicable driver

(frame)

F-frame

Manufacturer

Okaya Electric Ind.

LOAD

[Unit: mm]

Litze AWG10

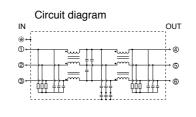
Applicable driver

Current rating

Voltage specifications

for driver

3-phase 200 V



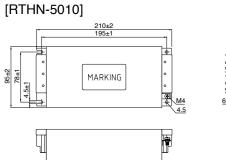
Manufacturer's

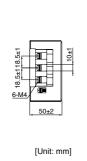
part No.

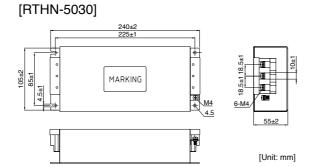
3SUP-HL50-ER-6B

Recommended components

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A-frame to C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E-frame and F-frame	







MARKING

[RTHN-5050]

<Remarks>

- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- · For detailed specification of the filter, contact the manufacturer.
- · When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

FN258L-30-07	2 phase 400 V	30	
FN258-42-07	3-phase 400 V	42	G-fran
FN258-42-33		42	G-IIai
[FS5559-60-34, FS55	59-80-34]		
C	[Unit: mm]	Circuit o	diagram
		L1 0	0
A 25	5	= +	₽
D		PE ○──■ ⊕ LINE	
04		[Size]	
M8 B		FS5559-60-34 41	_
		FS5559-80-34 46	0 180

Voltage specifications

for driver

3-phase 200 V

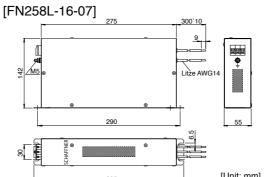
Part No.

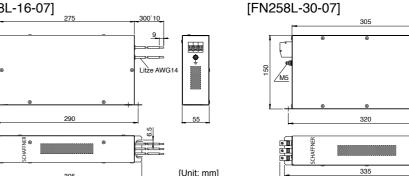
FS5559-60-34

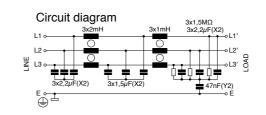
FS5559-80-34

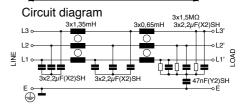
FN258L-16-07

FN258L-30-07

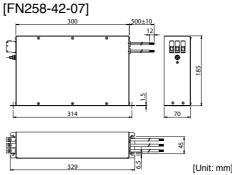


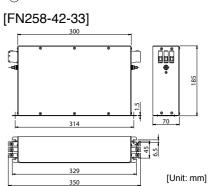


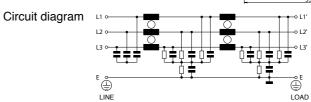




FS5559-60-34 410 170 370 388 FS5559-80-34 460 180 420 438







<Remarks>

- Select a noise filter of capacity that exceeds the capacity of the power source (also check for load condition).
- For detailed specification of the filter, contact the manufacturer.
- · When two or more servo drivers are used with a single noise filter at the common power source, consult with the noise filter manufacturer.

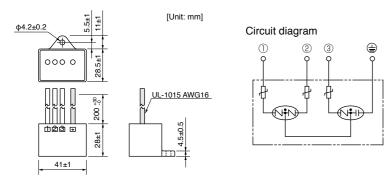


Composition of Peripheral Equipments

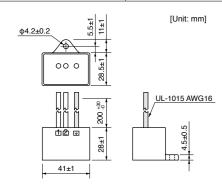
Surge Absorber

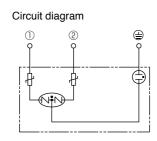
Provide a surge absorber for the primary side of noise filter.

	Option part No. Voltage specifications for driver		Manufacturer's part No.	Manufacturer
	DV0P1450	3-phase 200 V	R·A·V-781BXZ-4	Okaya Electric Ind.
Ì	DV0PM20050	3-phase 400 V	R·A·V-801BXZ-4	Okaya Electric iliu.



Option part No.	Voltage specifications for driver	Manufacturer's part No.	Manufacturer
DV0P4190	Single phase 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric Ind.





Noise Filter for Signal Lines

Install noise filters for signal lines to all cables (power cable, motor cable, encoder cable and interface cable)

Symbol ^{*1}	Cable Name	100 V/200 V Amp. frame symbol	400 V Amp. frame symbol	Option part No.	Manufacturer's part No.	Manufacturer	Qty.
		A, B, C, D	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF1	Power cable	E, F	_	Recommended components	RJ8035	KK-CORP.CO.JP	1
		G, H	G, H	Recommended components	RJ8095	KK-CORP.CO.JP	1
	Motor cable	A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF2		G, H	G, H	Recommended components	T400-61D	MICROMETALS	1
NF3	24 V Power cable Encoder cable Interface cable USB cable Control power cable	Comm (to all fra	-	DV0P1460	ZCAT3035-1330	TDK Corp.	4

^{*1} For symbols, refer to the Block Diagram "Installation Environment" (P.249).

<Remarks>

To connect the noise filter to the connector XB connection cable, adjust the sheath length at the tip of the cable, as required.

<Caution>

Fix the signal line noise filter in order to prevent excessive stress to the cables.

<Fig.2: Dimensions>

_										
Part No.	Current	Size [Unit: mm]								
Fait No.	Current	current (μH)	Α	В	С	D1	D2	Core thickness	Е	F
RJ8035	35 A	9.9±3	170	150	23	80	53	24	R3.5	7
RJ8095	95 A	7.9±3	200	180	34	130	107	35	R3.5	7

Fig.1: DV0P1460(Option)

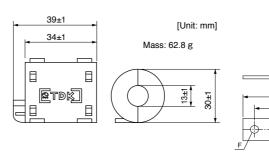
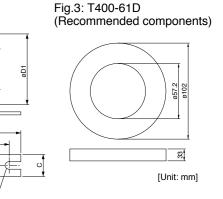


Fig.2: RJ8035, RJ8095 (Recommended components)



Residual Current Device

Install a type B Residual current device (RCD) at primary side of the power supply.

Type B: Residual current device which detects a direct-current ingredient.

Grounding

- (1) Connect the protective earth terminal () of the driver and the protective earth terminal (PE) of the control box without fail to prevent electrical shocks.
- (2) Do not make a joint connection to the protective earth terminals (ⓐ). 2 terminals are provided for protective earth.

<Note>

For driver and applicable peripheral equipments, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

Compliance to EC and EMC Directives Composition of Peripheral Components

■ Compliance to EC and EMC Directives

EC Directives

The EC Directives apply to all such electronic products as those having specific functions and have been exported to EU and directly sold to general consumers. Those products are required to conform to the EU unified standards and to furnish the CE marking on the products. MINAS AC Servos conforms to the EC Directives for Low Voltage Equipment so that the machine incorporating our servos has an easy access to the conformity to relevant EC Directives for the machine.

EMC Directives

MINAS Servo System conform to relevant standard under EMC Directives setting up certain model (condition) with certain locating distance and wiring of the servo motor and the driver. And actual working condition often differs from this model condition especially in wiring and grounding. Therefore, in order for the machine to conform to the EMC Directives, especially for noise emission and noise terminal voltage, it is necessary to examine the machine incorporating our servos.

Conformed Standards

Subject		Conformed Standard						
	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to					
Motor	EN50178	UL508C CSA22.2 No.14	Low- Voltage Directives					
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment						
	EN61000-6-2	Immunity for Industrial Environments	Conforms to references					
	IEC61000-4-2	Electrostatic Discharge Immunity Test						
Motor and	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test						
driver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives					
	IEC61000-4-5	Lightening Surge Immunity Test						
	IEC61000-4-6	High Frequency Conduction Immunity Test						
	IEC61000-4-11	Instantaneous Outage Immunity Test	7					

- IEC : International Electrotechnical Commission
- to EN : Europaischen Normen
- EMC: Electromagnetic Compatibility
 UL: Underwriters Laboratories
- CSA : Canadian Standards Association

Pursuant to at the directive 2004/108/EC, article 9(2)

- Panasonic Testing Centre
- Panasonic Service Furone
- a division of Panasonic Marketing Europe GmbH Winsbergring 15,22525 Hamburg,F.R.Germany

■ Composition of Peripheral Components

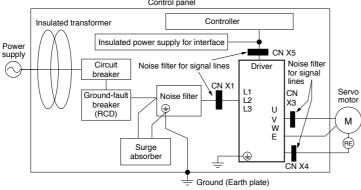
<Pre><Precautions in using options>

Use options correctly after reading operation manuals of the options to better understand the precautions. Take care not to apply excessive stress to each optional part.

Control panel

Installation Environment

Use Minas driver in environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



Power Supply

100 V system	Single phase, 100 V $^{+10~\%}_{-15~\%}$ to 115 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V system	Single phase, 200 V $^{+10~\%}_{-15~\%}$ to 240 V $^{+10~\%}_{-15~\%}$	50 Hz/60 Hz
200 V system	3-phase, 200 V ⁺¹⁰ / ₋₁₅ % to 240 V ⁺¹⁰ / ₋₁₅ %	50 Hz/60 Hz

- (1) Use the power supply under an environment of Overvoltage Category II specified in IEC60664-1.
- (2) For a interface power supply, use the insulated one with 12 VDC to 24 VDC which conforms to CE Marking or EN Standards (EN60950).

Circuit Breaker

Connect a circuit breaker which conforms to IEC standards and is UL recognized (UL Listed, marked), between the power supply and the noise filter.

Downloaded From Oneyac.com

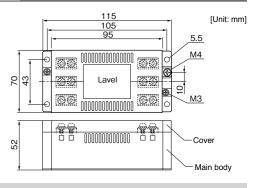
Composition of Peripheral Components Conformity to UL Standards

E Series Conformance to International Standards

Noise Filter

When you install one noise filter in the power supply for multi axis application, consult with the manufacture of the filter.

Option part No.	Part No.	Manufacturer		
DV0P4160	3SUP-HU10-ER-6	Okava Electric Industries Co.		



Surge Absorber

Install a surge absorber at primary side of the noise filter.

Option part No.	Driver voltage spec	Part No.	Manufacturer	Option part No.	Driver voltage spec	Part No.	Manufacturer
DV0P1450	3-phase, 200 V	R·A·V-781BXZ-4	Okaya Electric	DV0P4190	Single phase, 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric
Circuit dia au	04.2±	0.2	[Unit: mm]	Circuit dia an	_04.2±	0.2	[Unit: mm]
Circuit diagr	am ③ ⊕	28.5±1	UL-1015	Circuit diagr	am 😩	0 0 0 € 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1 × 1	UL-1015
		\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	45. 4.05. 4.05. 4.00. 6.			500 - S	WMG16 AWG16
		41±1				41±1	4

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged.

Noise Filter for Signal Lines

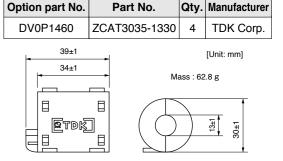
Install noise filters for signal lines to all cables (Power line, motor cable, encoder cable, interface cable)

<Caution>

- · Please fix a line noise filter to avoid excessive stress to the cable.
- When using multiple axes, noise generated from each driver might influence driver and peripheral equipment and result to malfunction.

Please insert line noise filters between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "peripheral equipment configuration".)



Grounding

- (1) Connect the protective earth terminal of the driver () and protective earth terminal of the control panel (PE) without fail to prevent electrical shocks.
- (2) Do not co-clamp to the ground terminals ((<u>)</u>). Two ground terminals are provided.

Ground-Fault Breaker

Install a ground fault curcuit braker (RCD) to the primary side of the power supply.

Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (File No. E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Install a circuit breaker or fuse which are UL recognized (LISTED
256

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

AC Servo Motor Capacity Selection Software

Option Selection Software for AC Servo Motor

When the data required in step 1 and 2 above have been input, the software lists the motors,

which will be appropriate to use with your machine. Select the motor that is best suitable for your machine application.



Details of motor

Once the motor is selected, specifications of the motor and amplifier, and details of reason for

determination are displayed and may be printed out.



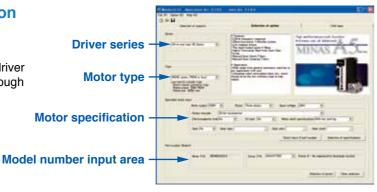
Option Selection Software for AC Servo Motor

We have prepared PC software to enable fast, easy, and correct option selection, a complicated job without the software.

Two procedures for option selection

1. Selection according to driver series and motor type

Suitable option can be selected by selecting driver series, motor type and motor specification through pulldown menu.



2. Entry of model number

If you know the model number based on the servo motor and driver currently used, enter the model number.

Result of selection

Tab sheet specific to each of option model numbers is used for easier identification of the desired option.

* When you are using the motor capacity selection software, simply press [Option Selection] tab and the screen as shown right will appear.



Please download from our web site and use after install to the PC. http://industrial.panasonic.com/ww/products/motors-compressors/fa-motors

(Multiples of 10) Table1: Basic unit Table 2: Auxiliary unit Derived unit Table 4: Unit combined Table 3: Derived unit with Other derived unit with SI unit proper name

SI unit —

Table1: Basic unit

Quantity	Name of unit	Symbol of unit
Length	meter	m
Weight	kilogram	kg
Time	second	s
Current	ampere	Α
Thermodynamic temperature	kelvin	K
Amount of substance	mol	mol
Luminous intensity	candela	cd

Table 2: Auxiliary unit

- Table 5 : Prefix

Quantity	Name of unit	Symbol of unit		
Plane angle	radian	rad		
Solid angle	steradian	sr		

Table 3: Major derived unit with proper name

Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1 Hz = 1 s ⁻¹
Force	newton	N	1 N = 1 kg·m/s ²
Pressure, Stress	pascal	Pa	1 Pa = 1 N/m ²
Energy, Work, Amount of heat	joule	J	1 J = 1 N·m
Amount of work, Work efficiency, Power, Electric power	watt	W	1 W = 1 J/s
Electric charge, Amount of electricity	coulomb	С	1 C = 1 A·s
Electric potential, Potential difference, Voltage, Electromotive force	volt	V	1 V = 1 J/C
Electrostatic capacity, Capacitance	farad	F	1 F = 1 C/V
Electric resistance	ohm	Ω	1 Ω = 1 V/A
Electric conductance	siemens	S	1 S = 1 Ω ⁻¹
Magnetic flux	weber	Wb	1 Wb = 1 V⋅s
Magnetic flux density, Magnetic induction	tesla	Т	1 T = 1 Wb/m ²
Inductance	henry	Н	1 H = 1 Wb/A
Degree centigrade (Celsius)	degree centigrade (Celsius) / degree	°C	t °C = (t+273.15) K
Luminous flux	lumen	lm	1 lm = 1 cd·sr
Illuminance	lux	lx	1 lx = 1 lm/m ²

Table 4: Unit combined with SI unit

Quantity	Name	Symbol of unit
	minute	min
Time	hour	h
	day	d
	degree	۰
Plane angle	minute	'
	second	ıı ıı
Volume	liter	I, L
Weight	ton	t

Table 5: Prefix

Multiples powered	Pr	efix
to unit	Name	Symbol
10 ¹⁸	exa	E
10 ¹⁵	peta	Р
1012	tera	Т
10 ⁹	giga	G
10 ⁶	mega	M
10 ³	kilo	k
10 ²	hecto	h
10	deca	da
10 ⁻¹	deci	d
10-2	centi	С
10 ⁻³	milli	m
10 ⁻⁶	micro	μ
10 ⁻⁹	nano	n
10 ⁻¹²	pico	р
10 ⁻¹⁵	femto	f
10 ⁻¹⁸	atto	а

Major Compatible Unit

Quantity	Symbol of conventional unit	Symbol of SI unit and compatible unit	Conversion value
Length	μ (micron)	μ m	1 μ = 1 μm (micrometer)
Acceleration	Gal	m/s ²	1 Gal = 10 ⁻² m/s ²
	G	m/s ²	1 G = 9.80665 m/s ²
Frequency	c/s, c	Hz	1 c/s = Hz
Revolving speed, Number of revolutions	rpm	s ⁻¹ or min ⁻¹ , r/min	1 rpm = 1 min ⁻¹
Weight	kgf	_	10
Mass	_	kg	Same value
Weight flow rate	kgf/s	_	
Mass flow rate	_	kg/s	Same value
Specific weight	kgf/m³	_	10
Density	_	kg/m ³	Same value
Specific volume	m³/kgf	m³/kg	Same value
Load	kgf	N	1 kgf = 9.80665 N
Force	kgf	N	1 kgf = 9.80665 N
	dyn	N	1 dyn = 10 ⁻⁵ N
Moment of force	kgf∙m	N∙m	1 kgf·m = 9.806 N·m
Pressure	kgf/cm ²	Pa, bar (1) or kgf/cm ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
		.,	= 0.980665 bar
	at (Engineering atmospheric pressure)	Pa	1 at = 9.80665 x 10 ⁴ Pa
	atm (Atmospheric pressure)	Pa	1 atm = 1.01325 x 10 ⁵ Pa
	mH ₂ O, mAq	Pa	1 mH ₂ O = 9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg ⁽²⁾	1 mmHg = 133.322 Pa
	Torr	Pa	· · · · · · · · · · · · · · · · · · ·
Stress	kgf/mm ²	Pa or N/m²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
0000			=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
	1.6,7011	1 4 01 14111	= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m²	Pa or N/m ²	1 kgf/m ² = 9.80665 Pa = 9.80665 N/m ²
Elactic modulac	1,0,,,,,	1 4 01 14111	1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf∙m	J (joule)	1 kgf·m = 9.80665 J
Znorgy, Work	erg	J	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf·m/s	W (watt)	1 kgf·m/s = 9.80665 W
Work emolectory, I ewer	PS	W	1 PS = 0.7355 kW
Viscosity	PP	Pa·s	1 P = 0.1 Pa·s
Kinetic viscosity	St	mm²/s	10 ⁻² St = 1 mm ² /s
Thermodynamic temperature	K	K (kelvin)	1 K = 1 K
Temperature interval	deg	K ⁽³⁾	1 deg = 1 K
Amount of heat	cal	J	1 cal = 4.18605 J
Heat capacity	cal/°C	J/K ⁽³⁾	1 cal/°C = 4.18605 J/K
Specific heat, Specific heat capacity	cal/ (kgf·°C)	cal/ (kgf·K) ⁽³⁾	1 cal/ (kgf·°C) = 4.18605 J/ (kg·K)
Entropy	cal/K	J/K	1 cal/K = 4.18605 J/K
Specific entropy	cal/ (kgf·K)	J/(kg·K)	1 cal/ (kgf·K) = 4.18605 J/ (kg·K)
Internal energy (Enthalpy)	cal	J/(kg·k)	1 cal = 4.18605 J
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1 cal/kgf = 4.18605 J/kg
Heat flux	cal/h	J/Kg W	1 kcal/h = 1.16279 W
Heat flux density	cal/ (h·m²)	W/m²	1 kcal/ (h·m²) = 1.16279 W/m²
Thermal conductivity	cal/ (n·m·°C)	w/m⁻ W/ (m⋅K) ⁽³⁾	1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)
Coefficient of thermal conductivity	cal/ (h·m²·°C)	W/ (m ² ·K) ⁽³⁾	1 kcal/ (h·m ² ·°C) = 1.16279 W/ (m ² ·K)
-	` ′	A/m	1 Real/ (11111 · C) = 1.16279 W/ (111 · R) 1 Oe = 10^3 / (4π) A/m
Intensity of magnetic field	Oe Mx	Wb (weber)	1 Mx = 10 ⁻⁸ Wb
Magnetic flux		, ,	1 MX = 10 ° WD 1 Gs = 10 ⁻⁴ T
Magnetic flux density	Gs,G	T (tesla)	1 GS - 10 · 1

Note

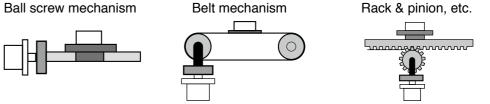
- (1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.
- (2) Applicable to scale or indication of blood pressure manometers.
- (3) "°C" can be substituted for "K".

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

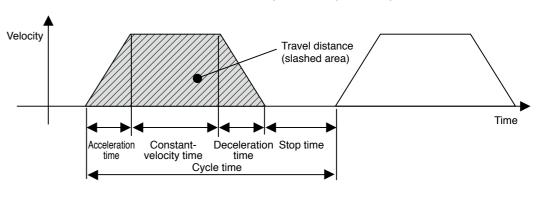
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<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 10⁻⁴ kg·m²".

4. Calculation of motor velocity

Calculate the motor velocity from the moving distance, acceleration / deceleration time and constant-velocity time.

5. Calculation of torque

Calculate the required motor torque from the load inertia, acceleration/deceleration time and constant-velocity time.

6. Calculation of motor

Select a motor that meets the above 3 to 5 requirements.

Description on the Items Related to Motor Selection

1. Torque

(1) Peak torque

Indicate the maximum torque that the motor requires during operation (mainly in acceleration and deceleration steps). The reference value is 80% or less of the maximum motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

(2) Traveling torque, Stop holding torque

Indicates the torque that the motor requires for a long time. The reference value is 80% or less of the rated motor torque. If the torque is a negative value, a regenerative discharge resistor may be required.

Traveling torque calculation formula for each mechanism

Ball screw mechanism

Traveling torque

 $\mathsf{Tf} = \frac{\mathsf{P}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W} + \mathsf{F})$

W: Weight [kg] P:Lead [m]

η: Mechanical efficiency

μ: Coefficient of friction

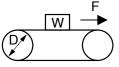
F: External force [N]

g: Acceleration of gravity 9.8[m/s²]

Belt mechanism

Traveling torque

 $\mathsf{Tf} = \frac{\mathsf{D}}{2\pi\,\eta}\,(\mu\mathsf{g}\mathsf{W}\!+\!\mathsf{F})$



W: Weight [kg]

P : Pulley diameter [m]

F: External force [N]

η: Mechanical efficiency μ: Coefficient of friction

g: Acceleration of gravity 9.8[m/s²]

(3) Effective torque

Indicates a root-mean-square value of the total torque required for running and stopping the motor per unit time. The reference value is approx. 80% or less of the rated motor torque.

$$Trms = \sqrt{\frac{Ta^2 x ta + Tf^2 x tb + Td^2 x td}{tc}}$$

Ta: Acceleration torque [N·m]

ta: Acceleration time [s]

tc: Cycle time [s]

Tf: Traveling torque [N·m]

tb: Constant-velocity time [s]

(Run time + Stop time)

Td: Deceleration torque [N·m]

td: Deceleration time [s]

2. Motor velocity

Maximum velocity

Maximum velocity of motor in operation: The reference value is the rated velocity or lower value. When the motor runs at the maximum velocity, you must pay attention to the motor torque and temperature rise. For actual calculation of motor velocity, see "Example of motor selection" described later.

3. Inertia and inertia ratio

Inertia is like the force to retain the current moving condition.

Inertia ratio is calculated by dividing load inertia by rotor inertia.

Generally, for motors with 750 W or lower capacity, the inertia ratio should be "20" or less. For motors with 1000 W or higher capacity, the inertia ratio should be "10" or less.

If you need quicker response, a lower inertia ratio is required.

/ For example, when the motor takes several seconds in acceleration step, the inertia ratio can be further \increased.

General inertia calculation method

General mertia	General inertia calculation method					
Shape	J calculation formula	Shape	J calculation formula			
Disk	$J = \frac{1}{8} WD^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $D : Outer diameter [m]$	Hollow cylinder	$J = \frac{1}{8} W(D^2 + d^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $d : Inner diameter [m]$			
Prism	$J = \frac{1}{12} W (a^2 + b^2) [kg \cdot m^2]$ $W : Weight [kg]$ $a, b, c : Side length [m]$	Uniform rod	$J = \frac{1}{48} W(3D^2 + 4L^2) [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $L : Length [m]$			
Straight rod	$J = \frac{1}{3} WL^{2} [kg \cdot m^{2}]$ $W : Weight [kg]$ $L : Length [m]$	Separated rod	$J = \frac{1}{8} WD^2 + WS^2 [kg \cdot m^2]$ $W : Weight [kg]$ $D : Outer diameter [m]$ $S : Distance [m]$			
Reduction gear	Inertia on shaft "a" $J = J_1 + (\frac{n_2}{n_1})^2 J_2[\mathrm{kg} \cdot \mathrm{m}^2]$ $n_1 : \text{A rotational speed of a shaft } [\mathrm{r/min}]$ $n_2 : \text{A rotational speed of b shaft } [\mathrm{r/min}]$					
Conveyor	$J = \frac{1}{4} W D^{2} [kg \cdot m^{2}]$ $W : \text{Workpiece weight on conveyor } [kg]$ $D : \text{Drum diameter } [m]$ * Excluding drum J	Ball screw	$J = J_B + \frac{W \cdot P^2}{4\pi^2} \text{ [kg·m²]}$ $W : \text{Weight [kg]}$ $P : \text{Lead}$ $JB : J \text{ of ball screw}$			

If weight (W [kg]) is unknown, calculate it with the following formula:

Weight W[kg]=Density ρ [kg/m³] x Volume V[m³]

Density of each material

Iron $\rho = 7.9 \times 10^3 \, [kg/m^3]$

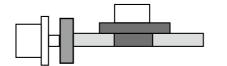
Aluminum $\rho = 2.8 \times 10^{3} \, [kg/m^{3}]$

Brass $\rho = 8.5 \times 10^3 \, [kg/m^3]$

To Drive Ball Screw Mechanism

1. Example of motor selection for driving ball screw mechanism

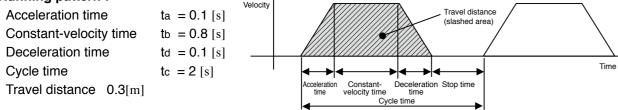
Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$



Travel distance 0.3[m]

Coupling inertia $Jc = 10 \times 10^{-6} [kg \cdot m^2]$ (Use manufacturer-specified catalog value, or calculation value.)

2. Running pattern :



BW =
$$\rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5$$

= 1.24 [kg]

4. Load inertia

$$JL = JC + JB = JC + \frac{1}{8}BW \times BD^{2} + \frac{WA \cdot BP^{2}}{4\pi^{2}}$$

$$= 0.00001 + (1.24 \times 0.02^{2}) / 8 + 10 \times 0.02^{2} / 4\pi^{2}$$

$$= 1.73 \times 10^{-4} [kg \cdot m^{2}]$$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM =
$$1.73 \times 10^{-4}$$
 / 0.14×10^{-4} Therefore, the inertia ratio is "12.3" (less than "30") (In case of MSME 100 W motor: JM = 0.051×10^{-4} Therefore, the inertia ratio is "33.9".)

7. Calculation of maximum velocity (Vmax)

 $\frac{1}{2}$ ×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

$$0.9 \times Vmax = 0.3$$

$$Vmax = 0.3 / 0.9 = 0.334 [m/s]$$

8. Calculation of motor velocity (N [r/min]) Ball screw lead per resolution: Bp = 0.02 [m]

$$N = 0.334 / 0.02 = 16.7 [r/s]$$

$$= 16.7 \times 60 = 1002 \text{ [r/min]} < 3000 \text{ [r/min]}$$
 (Rated velocity of MSME 200W motor)

9. Calculation of torque

Traveling torque Tf =
$$\frac{BP}{2\pi B \eta}$$
 (µgWA + F) = $\frac{0.02}{2\pi \times 0.9}$ (0.1×9.8×10+0) = 0.035 [N·m]

Acceleration torque
$$T_a = \frac{(JL + JM) \times 2\pi N[r/s]}{\text{Acceleration time } [s]} + \text{Traveling torque}$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$$

$$= 0.196 + 0.035 = 0.231 \text{ [N·m]}$$

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Deceleration torque $Td = \frac{(JL + JM) \times 2\pi N[r/s]}{Deceleration time [s]}$ - Traveling torque $=\frac{(1.73\times10^{-4}+0.14\times10^{-4})\times2\pi\times16.7}{0.1}-0.035$ $= 0.196 - 0.035 = 0.161 [N \cdot m]$

10. Verification of maximum torque

To Drive Ball Screw Mechanism

Example of Motor Selection

Acceleration torque = $Ta = 0.231 [N \cdot m] < 1.91 [N \cdot m]$ (Maximum torque of MSME 200 W motor)

11. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8 + 0.161^2 \times 0.1}{2}}$
= 0.067 [N·m] < 0.64 [N·m] (Rated torque of MSME 200 W motor)

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torque margin is significantly large.

Example of Motor Selection

Example of motor selection for timing belt mechanism

1.Mechanism Workpiece weight WA = 2[kg] (including belt)

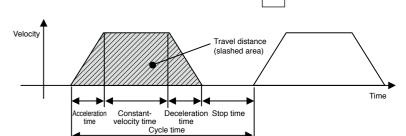
> Pulley diameter PD = 0.05[m]

Pulley weight WP= 0.5[kg] (Use manufacturer-specified catalog value, or calculation value.)

Mechanical efficiency $B\eta = 0.8$

Coupling inertia Jc = 0 (Direct connection to motor shaft)

Belt mechanism inertia Pulley inertia



2. Running pattern

Acceleration time ta = 0.1[s]Constant-velocity time tb = 0.8[s]Deceleration time td = 0.1[s]Cycle time tc = 2[s]

Travel distance 1[m]

3. Load inertia
$$JL = JC + JB + JP$$

$$= JC + \frac{1}{4}WA \times PD^2 + \frac{1}{8}WP \times PD^2 \times 2$$

$$= 0 + \frac{1}{4} \times 2 \times 0.05^2 + \frac{1}{8} \times 0.5 \times 0.05^2 \times 2$$

$$= 0.00156 = 15.6 \times 10^{-4} [kg \cdot m^2]$$

4. Provisional motor selection

In case of MSME 750 W motor : $JM = 0.87 \times 10^{-4} \, [kg \cdot m^2]$

5. Calculation of inertia ratio

JL / JM = $15.6 \times 10^{-4} / 0.87 \times 10^{-4}$ Therefore, the inertia ratio is "17.9" (less than "20")

6. Calculation of maximum velocity (Vmax)

$$\frac{1}{2}$$
 × Acceleration time×Vmax+Constant-velocity time×Vmax+ $\frac{1}{2}$ × Deceleration time×Vmax=Travel distance $\frac{1}{2}$ × 0.1 × Vmax + 0.8 × Vmax + $\frac{1}{2}$ × 0.1 × Vmax = 1 0.9 × Vmax = 1 Vmax = 1 / 0.9 = 1.111[m/s]

7. Calculation of motor velocity (N [r/min])

A single rotation of pulley :
$$\pi \times PD = 0.157 [m]$$

N = 1.111 / 0.157 = 7.08[r/s]
= 7.08 × 60 = 424.8[r/min] < 3000[r/min] (Rated velocity of MSME 750 W motor)

8. Calculation of torque

Traveling torque
$$T_f = \frac{P_D}{2\,\eta} (\mu gWA + F) = \frac{0.05}{2\,\times\,0.8} \ (0.1\,\times\,9.8\,\times\,3 + 0)$$

$$= 0.061 [\,N\cdot m\,]$$
Acceleration torque
$$T_a = \frac{(JL + JM)\,\times\,2\pi N [\,r/s\,]}{Acceleration time[s]} + Traveling torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} + 0.061$$

$$= 0.751 + 0.061 = 0.812 [\,N\cdot m\,]$$
Deceleration torque
$$T_d = \frac{(JL + JM)\,\times\,2\pi N [\,r/s\,]}{Deceleration time[s]} - Traveling torque$$

$$= \frac{(15.6\,\times\,10^{-4} + 0.87\,\times\,10^{-4})\,\times\,2\pi\,\times\,7.08}{0.1} - 0.061$$

$$= 0.751 - 0.061 = 0.69 [\,N\cdot m\,]$$

9. Verification of maximum torque

Acceleration torque $Ta = 0.812[N \cdot m] < 7.1[N \cdot m]$ (Maximum torque of MSME 750 W motor)

10. Verification of effective torque

Trms =
$$\sqrt{\frac{Ta^2 \times ta + Tf^2 \times tb + Td^2 \times td}{tc}}$$

= $\sqrt{\frac{0.812^2 \times 0.1 + 0.061^2 \times 0.8 + 0.69^2 \times 0.1}{2}}$
= 0.241 [N·m] < 2.4 [N·m] (Rated torque of MSME 750 W motor)

11. Judging from the above calculation result, selection of MSME 750W motor is acceptable.

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Request Sheet for Motor Selection

Request for motor selection I: Ball screw drive

1. Driven mechanism and running data

13) Lead of the ball screw

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.)			All societies and the societies are societies are societies and the societies are societ
3)	Acceleration time	ta:	S	♥
4)	Deceleration time	td:	S	ta to time
5)	Stopping time	ts:	S	
6)	Max. velocity	V:	mm/s	F ~ .
7)	External force	F:	N	WA
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	

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Г	
	Company name :
	Department/Section :
	Name :
	Address:
	Tel:
	Fax:
	E-mail address:

14) Traveling direction (horizontal, vertical etc.)

Request Sheet for Motor Selection

Request for motor selection III: Belt drive

1. I	Oriven mechanism and ru	unning data	
1)	Travel distance of the work load per one cycle	ℓ ₁ : mm	Running pattern
2)	Cycle time	to: s	
	(Fill in items 3) and 4) if required.)		ν elocity (1)
3)	Acceleration time	ta: s	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
4)	Deceleration time	td: s	WA
5)	Stopping time	ts: s	F F
6)	Max. velocity	V: mm/s	
7)	External force	F: N	D1
8)	Positioning accuracy of the work load	± mm	W_1
9)	Total weight of the work load	Wa: kg	
10)	Power supply voltage	V	(or item 14) and 15))
11)	Weight of the belt	W _M : kg	14) Width of the pulley L ₁ : mm
12)	Diameter of the driving pulley	D ₁ : mm	15) Material of the pulley
13)	Total weight of the pulley	W ₁ : kg	16) Traveling direction (horizontal, vertical etc.)

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Request Sheet for Motor Selection

Request for motor selection II: Timing pulley + Ball screw drive

mm

mm/s

Ν

mm

kg

٧

mm

mm

 mm

15) Diameter of the pulley

(or item 17) and 18))

16) Weight of the pulley

17) Width of the pulley

19) Weight of the belt

18) Material of the pulley

Running pattern

Ball screw side

mm

kg

Motor side

W1:

W_M:

_td

mm

D₂:

mm

kg

time

kg W2:

1. Driven mechanism and running data

ℓ1:

to:

td:

ts:

V:

F:

WA:

1) Travel distance of the work load per one cycle

(Fill in items 3) and 4) if required.)

2) Cycle time

3) Acceleration time

4) Deceleration time

5) Stopping time

6) Max. velocity

7) External force

9) and the table

10) Power supply voltage

13) Lead of the ball screw

11) Diameter of the ball screw

12) Total length of the ball screw

Traveling direction (horizontal, vertical etc.)

8) Work load

Positioning accuracy of the

Total weight of the work load

Company namo :
Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Company name :
Department/Section :
Name :
Address :
- .

2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Fax:

E-mail address:

Request Sheet for Motor Selection

Request for motor selection IV: Timing pulley + Belt drive

1. Driven mechanism and running data

Travel distance of the work load per one cycle	ℓ ₁ :	mm
2) Cycle time	to:	s

16)	Diameter of the pulley	
-----	------------------------	--

Motor side		Belt side		
lley	D3:	mm	D4:	mm
W	Wo:	kα	W/4:	ka

(Fill in items 3) and 4) if required.)

3) Acceleration time	ta:	s
4) Deceleration time	td:	s

5) Stopping time	ts:

6) Max. velocity	V:	mm/s

7) External force	F:	N
8) Positioning accuracy of the work load	±	mm

9)	load load	WA: Kg	3
10)	Power supply voltage	1	,

11) Weight of motor side belt	W _M :	kg

		Motor side		Belt side	
2)	Diameter of the pulley	D ₁ :	mm	D ₂ :	mm
3)	Weight of the pulley	W ₁ :	kg	W ₂ :	kg

		4.4		4
(or	item	14)	and	15

14) Width of the belt	L1:	mm
15) Material of the pulley	е	

17) Weight of the pulley

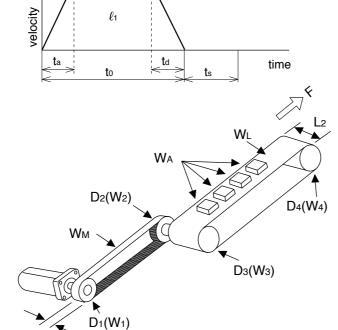
	(or item 18) and 19))
18)	Width of the pulley

19)	Material of the pulley
19)	Material of the pulley

9)	Material of the pulley	
20)	Weight of the belt	WL:

21)	Traveling direction
	(horizontal, vertical etc.)

Running	pattern



2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

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Request Sheet for Motor Selection

Request for motor selection V: Turntable drive

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	d ₁ :	deg	
2)	Cycle time	to:	s	
	(Fill in items 3) and 4) if requi	red.)		
3)	Acceleration time	ta:	S	
4)	Deceleration time	td:	S	
5)	Stopping time	ts:	s	
	May retational anod of the			

6)	max. Totational speed of the	1
6)	table	ı
	lable	ı
		Т

	table		
	(or)	V:	r/
7)	Positioning accuracy of the		ah

D₁:

')	work load	
		Г

8)	Weight of one work load
9)	Driving radius of the center

0)	of gravity of the work
10)	Diameter of the table

11)	Mass of the table

12)	Diameter of the tab
12)	support

13	Power	lagus	voltac

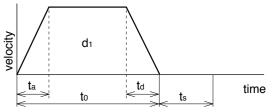
Dimensions of the

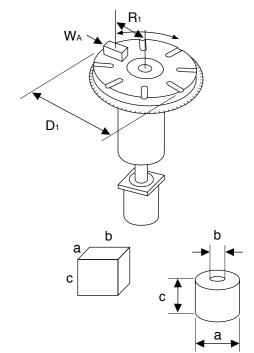
Prism			Cylinder	
a:	mm	a:	mm	
b:	mm	b:	mm	
c:	mm	c:	mm	

15) Number of work load

ds	pcs







2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

kg

mm

kg

 mm

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection VI: Timing pulley + Turntable drive

1 Driven mechanism and running data

1. Driven mechanism and running data						
1)	Travel distance of the work load per one cycle	d ₁ :	deg			
2)	Cycle time	to:	S			
	(Fill in items 3) and 4) if requi	red.)				
3)	Acceleration time	ta:	S			
4)	Deceleration time	td:	S			
5)	Stopping time	ts:	s			
6)	Max. rotational speed of the table	v:	deg/s			
	(or)	V:	r/s			
7)	Positioning accuracy of the work load	±	deg			
8)	Weight of one work load	Wa:	kg			
9)	Driving radius of the center of gravity of the work	R ₁ :	mm			
10)	Diameter of the table	D ₁ :	mm			
11)	Mass of the table	W ₁ :	kg			

T₁:

mm | a:

mm b:

mm c:

(Prism)

b:

12) Diameter of the table support

13) Power supply voltage

14) Dimension of the work load

15) Number of work loads

16) Diameter of the pulley	
----------------------------	--

16) Diameter of the pulley	D ₂ :	mm	D3:	m
17) Weight of the pulley	W2:	kg	W3:	k

Motor side

(or item 18) and 19))

10)	Width of the nullay	
10)	Width of the pulley	

L1:	mm
-----	----

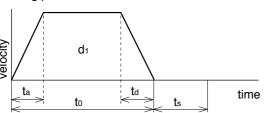
Turntable side

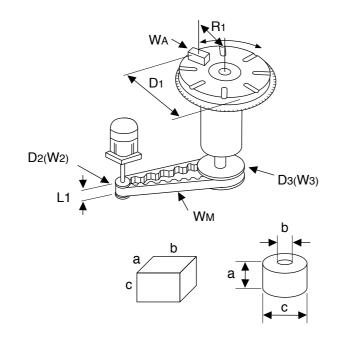
19) Material of the pulley

20) Weight of the belt

W _M : kg	5
---------------------	---

Running pattern





2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

mm

V

mm

mm

mm

pcs

(Cylinder)

	Company name :
	Department/Section:
	Name :
	Address :
	Tel:
	Fax:
	E-mail address:

Request Sheet for Motor Selection

Request for motor selection VII: Roller feed drive

1. Driven mechanism and running data

10) Power supply voltage

11) Diameter of the roller

12) Mass of the roller

1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	Running pattern
2)	Cycle time	to:	S	
	(Fill in items 3) and 4) if required.)			Atiooley \(\ell_1 \)
3)	Acceleration time	ta:	S	ta to ts
4)	Deceleration time	td:	s	
5)	Stopping time	ts:	S	
6)	Max. velocity	v: n	nm/s	F
7)	External pulling force	F:	N	L
8)	Positioning accuracy of the work load	±	mm	D1(W1)
9)	Number of rollers		pcs	

(or i	tem 13) and	114
-------	--------	-------	-----

13	3) V	Vidth	of	the	roll	er
	•	•	٠.			٠.

L ₁ :	mm

2. Other data ((Fill the details on specific mechanism and its configurations in the following blank.)

mm

kg

D₁:

W₁:

Company name :
Department/Section :
Name :
Address:
Tel:
Fax:
E-mail address:

time

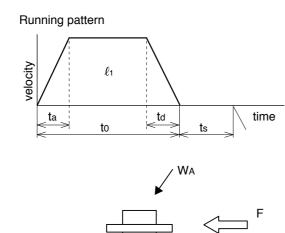
Request for motor selection **W** : Driving with Rack & Pinion

Connection Between Driver and Controller

1. Driven mechanism and running data

Traveling direction (horizontal, vertical, etc.)

		_		
1)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	
2)	Cycle time	to:	s	
	(Fill in items 3) and 4) if required.)			
3)	Acceleration time	ta:	s	Running pattern
4)	Deceleration time	td:	s	Λ ₁
5)	Stopping time	ts:	S	
6)	Max. velocity	V:	mm/s	ta to td ts
7)	External force	F:	N	/ WA
8)	Positioning accuracy of the work load	±	mm	¥
9)	Total weight of the work load	WA:	kg	
10)	Power supply voltage		V	W ₃ Z Z
11)	Diameter of the pinion	D3:	mm	D ₃
12)	Mass of the pinion	W3:	kg	



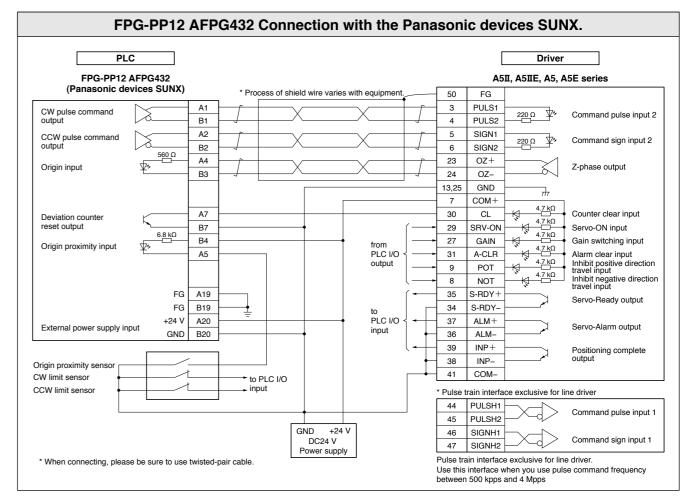
2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

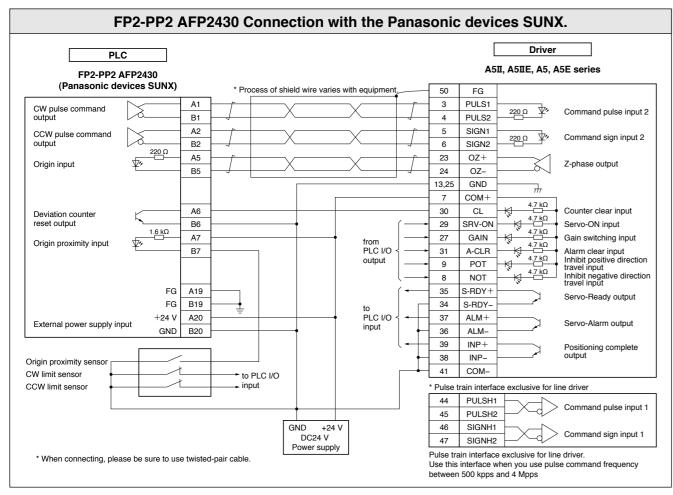
Company name :
Department/Section :
Name :
Address :
Tel:
Fax :
E-mail address:

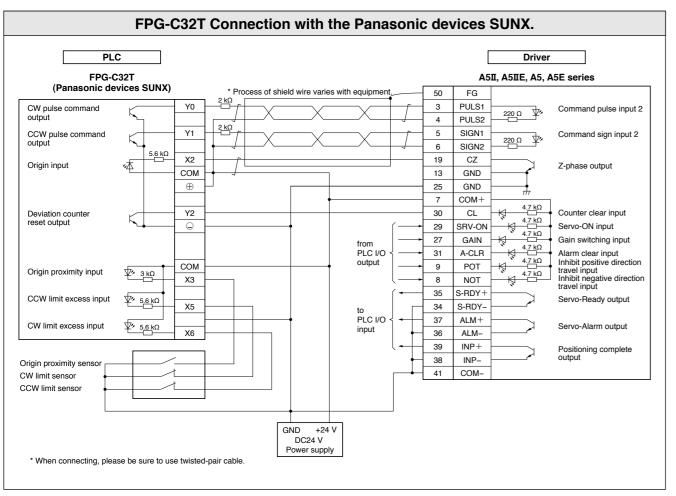
Downloaded From Oneyac.com

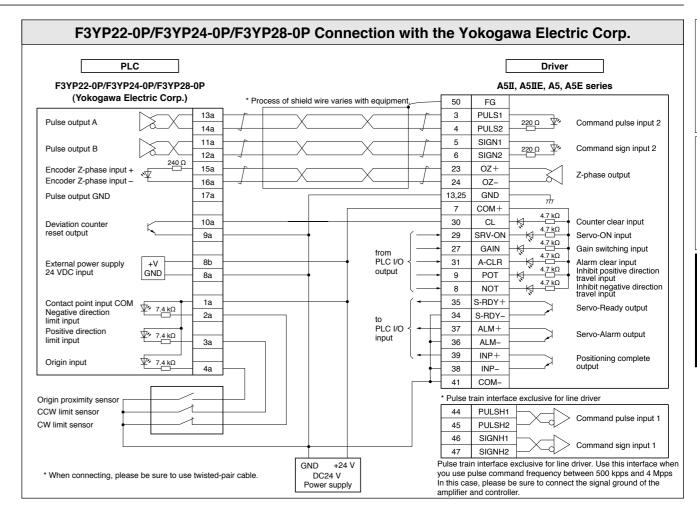
A5 Family

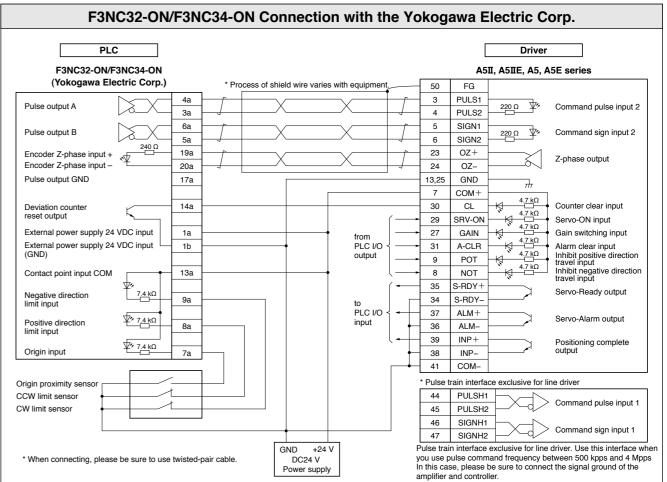
Connection Between Driver and Controller

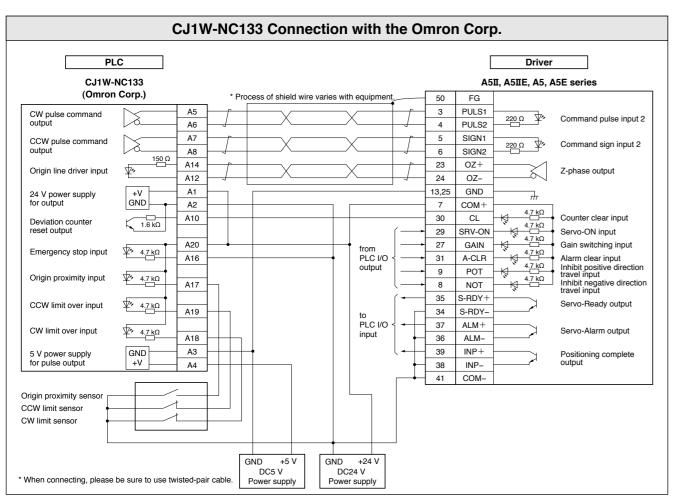


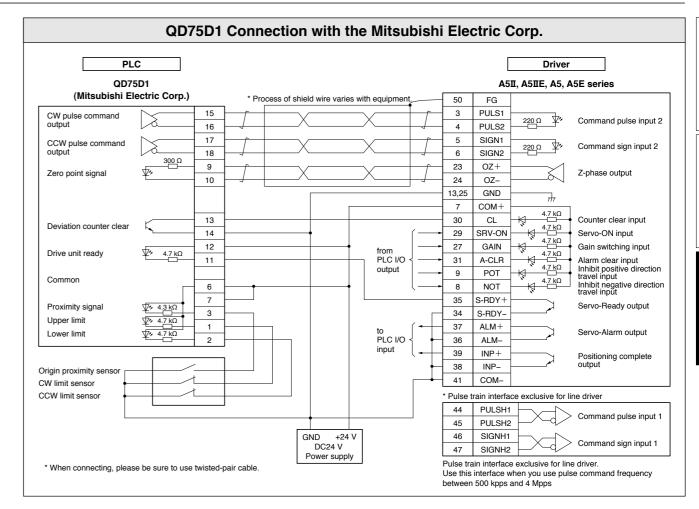


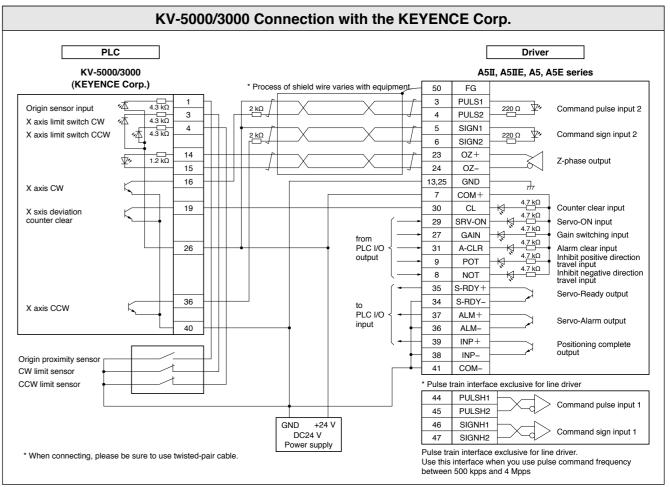








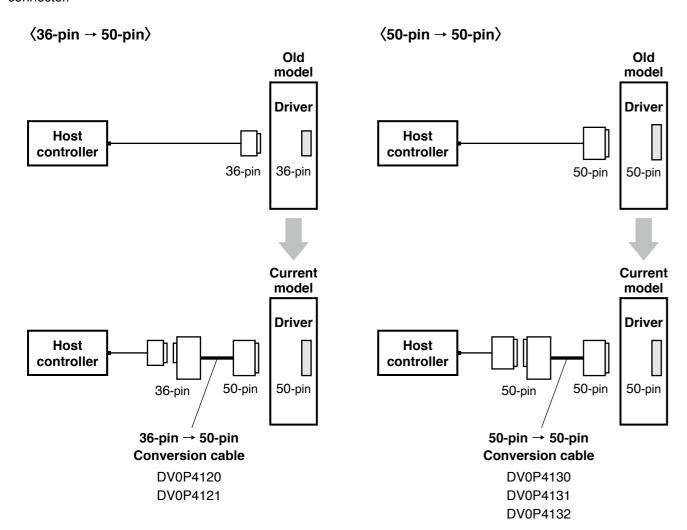




Driver and Controller

Replacing Old Model Servo Driver with MINAS A5II, A5 series

For easier replacement of old driver (MINAS X/XX/V series) with A5II, A5 series, use the interface conversion connector.



When selecting the cable, refer to the table below because the part number of the cable is specific to the control mode of the old model.

Old model	Control mode	Conversion cable part No.	Conversion wiring table
X series XX series	Position/velocity control	DV0P4120	
(36-pin)	Torque control	DV0P4121	P.280
	Position control	DV0P4130	D 004
V series (50-pin)	Velocity control	DV0P4131	P.281
(66 р)	Torque control	DV0P4132	P.282

^{*} For external dimensions, refer to P.197.

Conversion Wiring Table

	DV0P4120 DV0P4121					
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+
2	24	Z-phase output	OZ-	24	Z-phase output	OZ-
3	13	Signal ground	GND	13	Signal ground	GND
4	19	Z-phase output	CZ	19	Z-phase output	CZ
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL
14	14	Speed command input	SPR	NC		
15	15	Signal ground	GND	15	Signal ground	GND
16	43	Speed monitor output	SP	43	Speed monitor output	SP
17	25	Signal ground	GND	25	Signal ground	GND
18	50	Frame ground	FG	50	Frame ground	FG
19	21	A-phase output	OA+	21	A-phase output	OA+
20	22	A-phase output	OA-	22	A-phase output	OA-
21	48	B-phase output	OB+	48	B-phase output	OB+
22	49	B-phase output	OB-	49	B-phase output	OB-
23	NC			NC		
24	NC			NC		
25	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+	39	Positioning complete output Speed arrival output	COIN+ AT-SPEED+
26	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+
27	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+
	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-	34	Positioning complete output (–) Speed arrival output (–)	COIN- AT-SPEED-
28	36	Servo-Alarm output (-)	ALM-	36	Servo-Alarm output (–)	ALM-
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (–)	S-RDY-
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-
29	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL
30	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE
33	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL
34	16	CCW direction torque limit input	CCWTL	14	Torque command input	TRQR
35	17	Signal ground	GND	17	Signal ground	GND
36	42	Torque monitor output	IM	42	Torque monitor output	IM

^{* &}quot;NC" is no connect.

Replacing Old Model Servo Driver with MINAS A5II, A5 series Connection Between Driver and Controller

	DV0P4130 DV0P4131					
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol
1	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL
2	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL
3	3	Command pulse input 2	PULS1	NC		
4	4	Command pulse input 2	PULS2	NC		
5	5	Command pulse sign input 2	SIGN1	NC		
6	6	Command pulse sign input 2	SIGN2	NC -	Book and formation (1)	0014
7	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+
9	NC NC			NC NC		
10	NC			NC		
11	11	External brake release signal	BRK-OFF+	11	External brake release signal	BRK-OFF+
12	12	Zero-speed detection output signal	ZSP	12	Zero-speed detection output signal	ZSP
13	13	Torque in-limit signal output	TLC	13	Torque in-limit signal output	TLC
14	NC	Torque in minicoignal eatput	120	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 21	Alarm alaar innut	A CLD
31	31 32	Alarm clear input Control mode switching input	A-CLR C-MODE	31	Alarm clear input	A-CLR C-MODE
33	33	Command pulse inhibition input	INH	NC	Control mode switching input	O-IVIODE
34	NC	Command paise initibilion input	IIVII	NC		
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+
36	NC	Contained output	0.12.1	NC	Controlled Carpar	0.1.5.1
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+
38	NC	·		NC	·	
39	39	Positioning complete output	COIN+	39	Speed arrival output	AT-SPEED+
40	40	Torque in-limit signal output	TLC	40	Torque in-limit signal output	TLC
	10	External brake release signal (-)	BRK-OFF-	10	External brake release signal (-)	BRK-OFF-
	34	Positioning complete output (–)	COIN-	34	Speed arrival output (-)	AT-SPEED-
41	36	Servo-Alarm output (–)	ALM-	36	Servo-Alarm output (–)	ALM-
	38	Servo-Ready output (-)	S-RDY-	38	Servo-Ready output (–)	S-RDY-
	41	Power supply for control signal (-)	COM-	41	Power supply for control signal (-)	COM-
42	42	Torque monitor output	IM	42	Torque monitor output	IM
43	43	Speed monitor output	SP	43	Speed monitor output	SP
44	25	Signal ground	GND	25	Signal ground	GND
45	25	Signal ground	GND	25	Signal ground	GND
46	25	Signal ground	GND	25	Signal ground	GND
47	NC			NC		
48	48	B-phase output	OB+	48	B-phase output	OB+
49	49	B-phase output	OB-	49	B-phase output	OB-
50	50	Frame ground	FG	50	Frame ground	FG

*	"NC"	is	no	connect.
---	------	----	----	----------

A5 Family

	DV0P4132							
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol					
1	8	CW over-travel inhibit input	CWL					
2	9	CCW over-travel inhibit input	CCWL					
3	NC							
4	NC							
5	NC							
6	NC							
7	7	Power supply for control signal (+)	COM+					
8	NC							
9	NC							
10	NC							
11	11	External brake release signal	BRK-OFF+					
12	12	Zero-speed detection output signal	ZSP					
13	13	Torque in-limit signal output	TLC					
14	NC							
15	15	Signal ground	GND					
16	16	Torque command input	TRQR					
17	17	Signal ground	GND					
18	18	CW direction torque limit input	CWTL					
19	19	Z-phase output	CZ					
20	NC							
21	21	A-phase output	OA+					
22	22	A-phase output	OA-					
23	23	Z-phase output	OZ+					
24	24	Z-phase output	OZ-					
25	50	Frame ground	FG					
26	26	Speed zero clamp input	ZEROSPD					
27	27	Gain switching input	GAIN					
28	NC							
29	29	Servo-ON input	SRV-ON					
30	NC							
31	31	Alarm clear input	A-CLR					
32	32	Control mode switching input	C-MODE					
33	NC							
34	NC							
35	35	Servo-Ready output	S-RDY+					
36	NC							
37	37	Servo-Alarm output	ALM+					
38	NC							
39	39	Speed arrival output	AT-SPEED+					
40	40	Torque in-limit signal output	TLC					
	10	External brake release signal (–)	BRK-OFF-					
	34	Speed arrival output (–)	AT-SPEED-					
41	36	Servo-Alarm output (–)	ALM-					
	38	Servo-Ready output (–)	S-RDY-					
	41	Power supply for control signal (–)	COM-					
42	42	Torque monitor output	IM					
43	43	Speed monitor output	SP					
44	25	Signal ground	GND					
45	25	Signal ground	GND					
46	25	Signal ground	GND					
47	NC							
48	48	B-phase output	OB+					
49	49	B-phase output	OB-					
50	50	Frame ground	FG					

^{* &}quot;NC" is no connect.

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FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes)

(Panasonic devices SUNX)

CW pulse command output

CCW pulse command

Origin input (5 VDC)

Servo-ON output

Origin proximity input

 ${\it Limit\ excess\ } \ominus$

Origin proximity senso

CW limit sensor

CCW limit sensor

External power supply input

reset output

A1 A10

B1 B10

A2 A11

B2 B11

A3 A12

A4 A13

B3 B12

B5 B14

A7 A16

B7 B16

B4 B13

A5 A14

B6 B15

+24 V A20 A20

GND B20 B20

3.9 kΩ

560 Ω

6.8 kΩ

22 PULS1

PULS2

SIGN1

SIGN2

OZ+

07-

GND

COM+

CL

SRV-ON

GAIN/TC

A-CLR

CCWL

CWL

AI M

COIN

BRKOFF

WARN

COM-

23

24

25

19

20

14

1

2

5

8

9

10

11

12

13

PLC I/O

to PLC I/O

Driver

MINAS E series

220 Ω 🔻

220 Ω 🛂

4.7 kΩ

4.7 kΩ

4.7 kΩ

₩

CW pulse command

CCW pulse command

Z-phase output

Servo-ON input

Alarm clear input

CCW over-trave

prohibit input

CW over-travel prohibit input

Servo-Alarm output

Positioning complete

Brake release output

Warning output

Gain switching/Torque limit switching input

FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) Connection with the Panasonic devices SUNX.

* Process of shield wire varies with equipm

CW pulse command

CCW pulse command

Z-phase output

Counter clear input

CCW over-travel

prohibit input CW over-travel

prohibit input

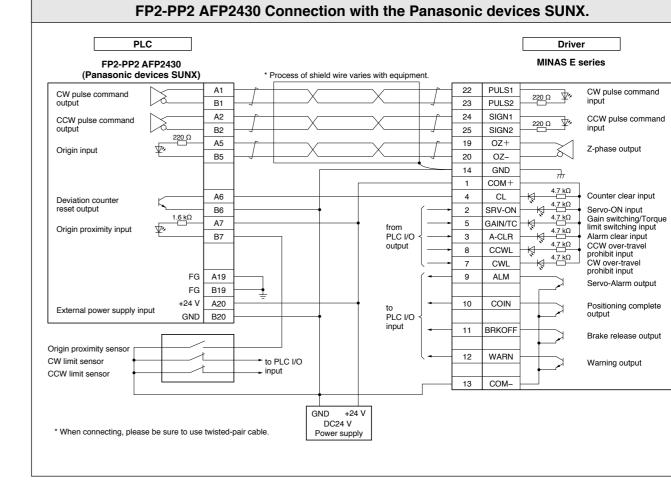
output

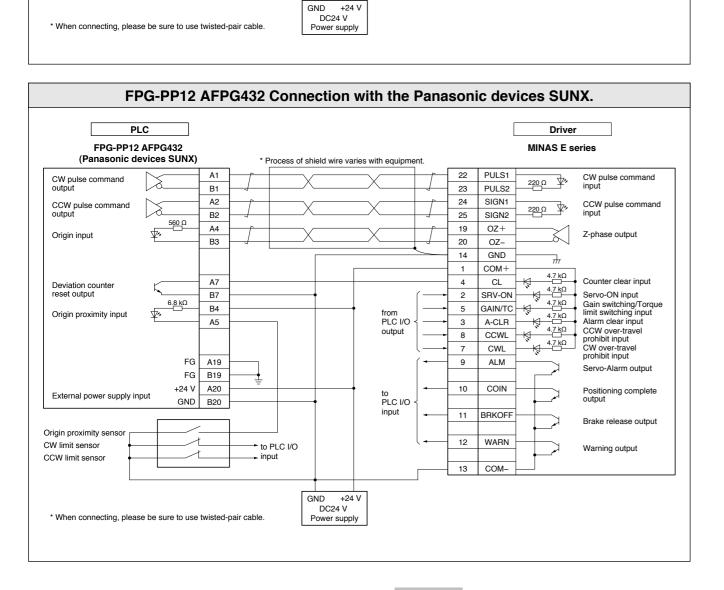
Servo-Alarm output

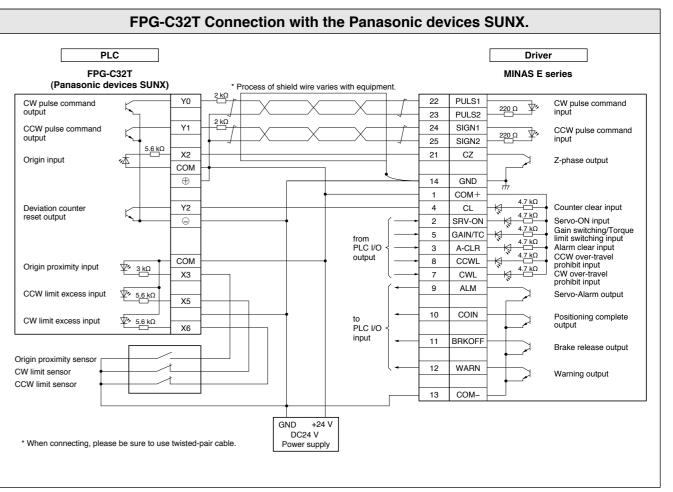
Positioning complete

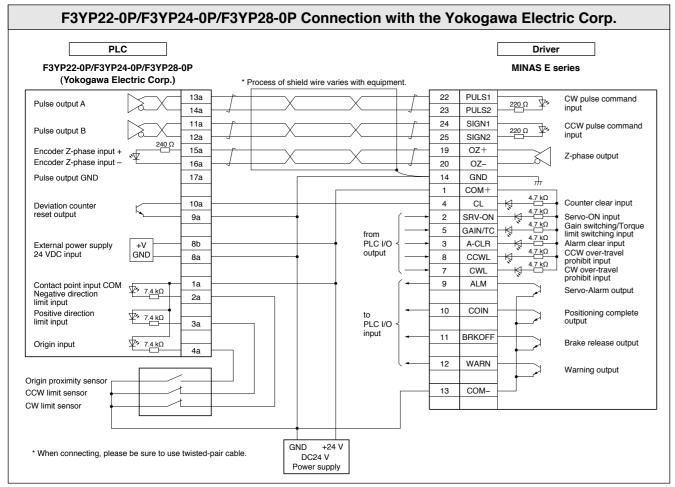
Brake release output

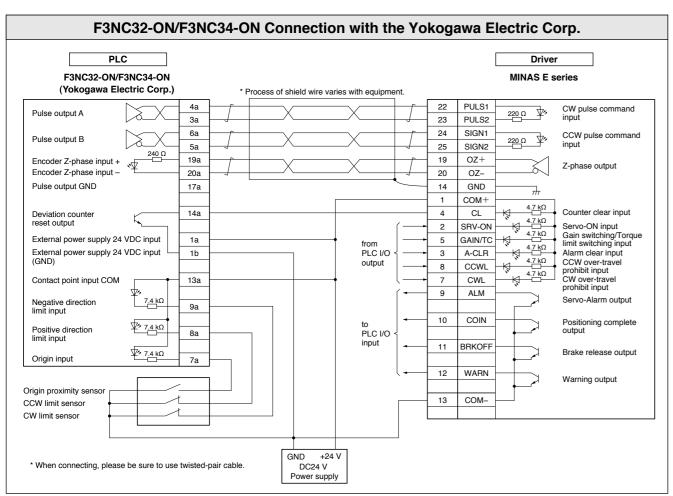
Warning output

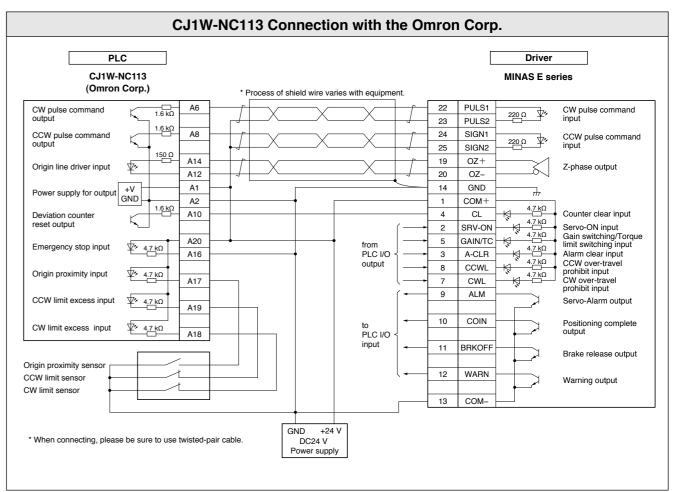


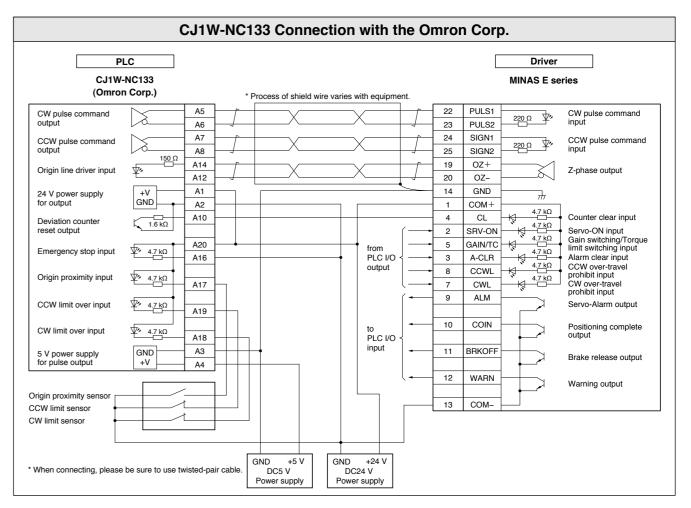












PL	С									Driver	
QD75 (Mitsubishi Ele			* Proce	ss of shi	ield wire va	ries with equipme	ent.			MINAS E se	ries
V pulse command tput		15	J				1	22 23	PULS1 PULS2 SIGN1	220 Ω 🛂	CW pulse command input
CW pulse command tput	300 Ω	17		X		X		24	SIGN2	220 Ω 🛂	CCW pulse command input
ro point signal	¥ -	9		X				19	OZ+ OZ-		Z-phase output
								14	GND COM+	ππ 4.7 kΩ	
viation counter clear		13					<u></u>	2	SRV-ON	4.7 kΩ 4.7 kΩ 4.7 kΩ	Counter clear input Servo-ON input Gain switching/Torque
ve unit ready	4.7 kΩ	12				from PLC I/O output		3	GAIN/TC A-CLR	4.7 kΩ 4.7 kΩ 4.7 kΩ	limit switching input Alarm clear input CCW over-travel
ommon		6	•			output		8	CCWL	4.7 kΩ	prohibit input CW over-travel prohibit input
oximity signal per limit	√% 4.7 kΩ − − − − − − − − − − − − − − − − − −	7						9	ALM		Servo-Alarm output
wer limit	4.7 kΩ	2		_		to PLC I/O	-	10	COIN		Positioning complete output
n proximity sensor —						input	-	11	BRKOFF		Brake release output
imit sensor							l —	12	WARN		Warning output
SG11501				_				13	COM-		
hen connecting, pleas	e be sure to use tv	visted-pai	ir cable.		ND +24 DC24 V Yower suppl						

Connection Between Driver and Controller

DV0P	Title	Dogo
Part No. DV0P0770	Title Connector kit for external peripheral equipment	Page 240
	Connector kit for external peripheral equipment	_
DV0P0800	Interface cable	241
DV0P1450	Surge absorber (3-phase)	253,25
DV0P1460	Noise Filter for Signal Lines	254,25
DV0P1960	Communication cable	241
DV0P220	Reactor	209
DV0P221	Reactor	209
DV0P222	Reactor	209
DV0P223	Reactor	209
DV0P224	Reactor	209
DV0P225	Reactor	209
DV0P227	Reactor	209
DV0P228	Reactor	209
DV0P2870	Connector kit for power supply connection	239
DV0P2890	External regenerative resistor	242
DV0P2891	External regenerative resistor	242
DV0P2990	Battery For Absolute Encoder	207
DV0P3410	Noise Filter	251
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
DV0P3670	Connector kit for motor/encoder connection	239
DV0P37300	Cable set (3 m)	238
DV0P3811	DIN rail mounting unit	242
DV0P39200	Cable set (5 m)	238
DV0P4120	Interface conversion cable	197
DV0P4121	Interface conversion cable	197
DV0P4130	Interface conversion cable	197
DV0P4131	Interface conversion cable	197
DV0P4132	Interface conversion cable	197
DV0P4160	Noise filter	256
DV0P4170	Noise Filter	250
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MEMO

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[Panasonic Sales Office of Motors]

(February.01.2016)

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