- · 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

ISO14001 Certificate

14001

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

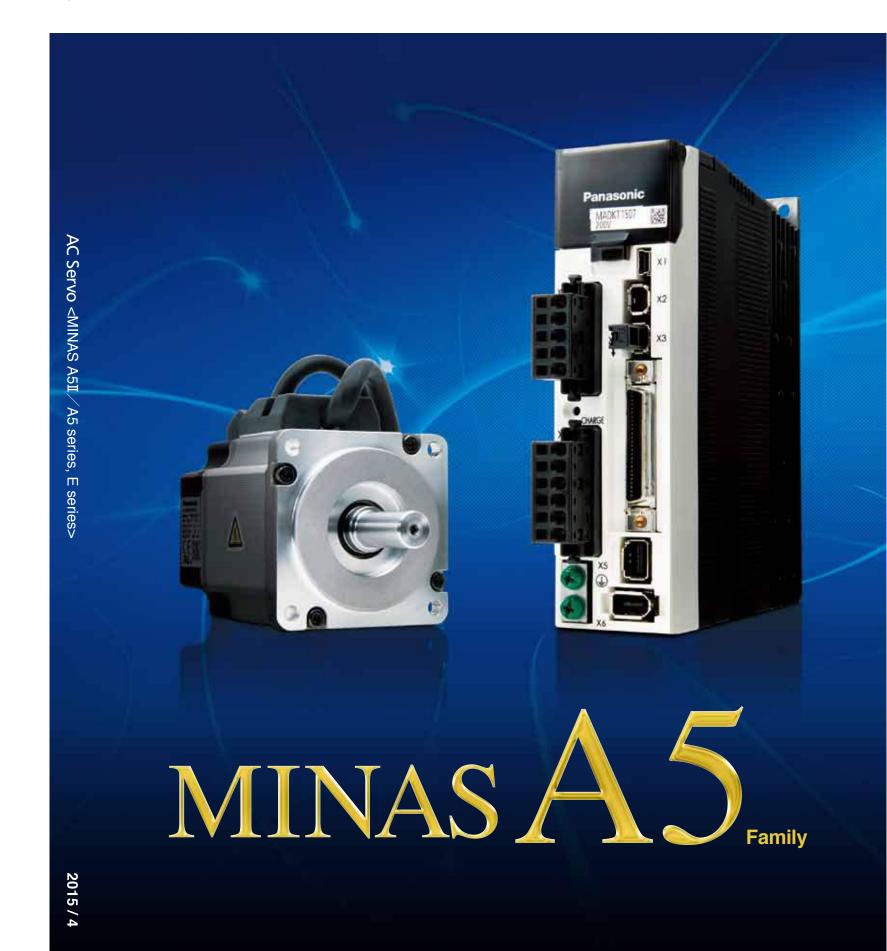
1-1 Morofuku 7-chome, Daito, Osaka 574-0044, Japan Fax: +81-72-870-3151

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

- This product is for industrial equipment. Don't use this product at general household.
- · Printed colors may be slightly different from the actual products.
- Specifications and design of the products are subject to change without notice for the product improvement.

Panasonic

AC Servo MINAS A5 II / A5 series



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





Two-degree-of-freedom control system

All-in-one type

Rated output: 50 W to 15.0 kW

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

All-in-one type

Rated output: 50 W to 15.0 kW

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

Two-degree-of-freedom control system

Position control type

Rated output: 50 W to 5.0 kW

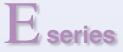
- 20 bit incremental encoder
- Position control (pulse train commands)

Position control type

Rated output: 50 W to 5.0 kW

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

Slim design and position control type





Rated output: 50 W to 400 W

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

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

Linear motor and DD motor control type

- 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



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

General-purpose RS485 communication AE-LINK support type

series

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Surge Absorber for Motor Brake

List of Peripheral Equipments

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Motor Cable

Brake Cable

Interface Cable

Mounting Bracket

Connector Kit-

Reactor

Index-

Sales Office

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Motor Specifications, Description

Wiring Diagram

Safety Function

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



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

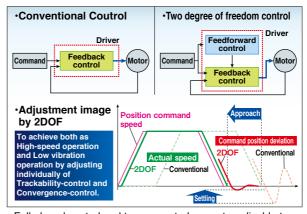


Realizes guick and accurate movement. Fast response & High-precision positioning

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

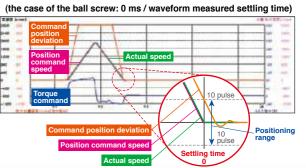


· Full-closed control and torque control are not applicable to 2DOF control system.

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

condition setting Load Stiffness Command response

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.

· Fit gain adjustment window



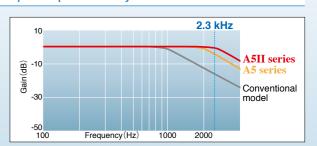
· Automatically proposes various settings

Recone	nerdator setting M	onuti octio	19	
Theory	tresulfrecomes as to	fors Pier	see choose reco	mentako
Adv	etrest objects e full	reach, Ne	espasse pielere	otisky, Midd
Select	Reconstresdeton	Pigidity	Command response[m]	Stadefaute (imp[rec]
195	Minimum stabilizati.	22	0.2	83
F	Designete overeft	22	34	10
M 5	Designeta stecila.	19	15	95
	Migrifically setting	25	34	1.0
	Meson sating		-	

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

) UiC

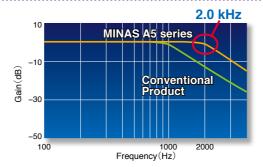


2.0 kHz Frequency Response

Example application Semiconductor production equipment, packaging, etc

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

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





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

Example application Machine tools, textile machinery, etc.

<At incremental type>

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 \5∏. A5 Series 1048576 p/r A4 Series 2500 p/r [1.04 million pulses]



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



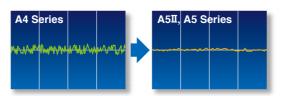




Example application Semiconductor production equipment, textile machinery, etc.

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

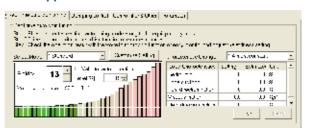
Example application Semiconductor production equipment, food processing machinery, etc.

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

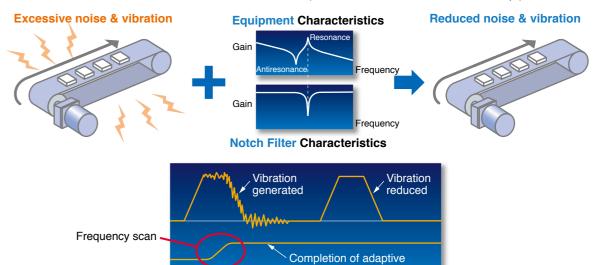
A5II

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.)



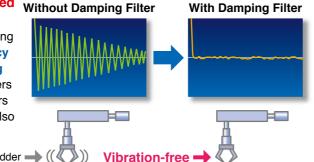
Manual/Auto Damping Filter

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.



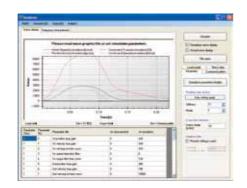


Motion Simulation

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 encod

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

Safe torque off

Complies with European Safety Standards.

Example application Semiconductor and LCD production equipment, etc.

Safe

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.)



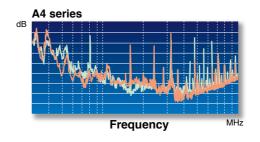
Low noise

Example application

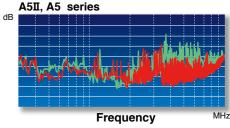
Semiconductor and LCD production equipment, etc. general production machinery for export to the European market

Complies with the European EMC Directive

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







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

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

IP67 enclosure rating for increased environmental resistance

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



IP67

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

Features

MINAS A5 Family









PANATERM Set-up Support Software

A5II A5 A5IIE A5E

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

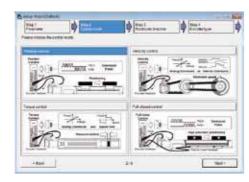
The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A5 Family through the USB interface.

Localized in 4 languages

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

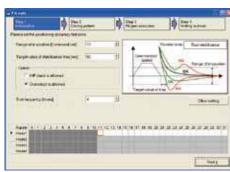
Setup Wizard

This wizard supports fundamental settings in each control mode step by step, includeing reading of default setting. In on-line condition, input data related to each step can be monitored in real time.



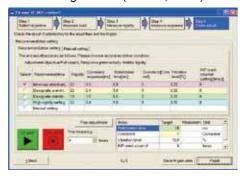
Fit gain

This function automatically searches the best suitable stiffness setting and mode and adjusts the gain once the target in-position range and setting time are set.



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

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



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).

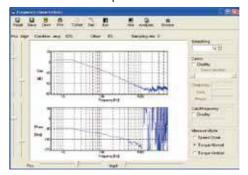
Other New Function

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.

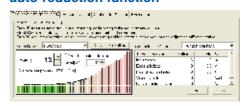
ver data such as emperature. ecords the rotating on.

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.

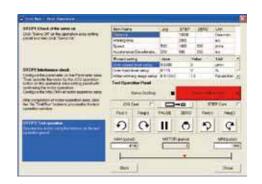


Added New screen for gain adjustment, equipped with stiffness oscillation auto-reduction function



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, A $\rm III$, E or A4 series), consult our distributors.

lardware co	iliguration	
	CPU	Pentium III 512MHz or more
	Memory	256MB or more (512MB recommended)
Personal	Hard disk capacity	Vacancy of 512MB or more recommended
computer		Windows® XP SP3 (32-bit Ver.), Windows® VISTA SP1 (32-bit Ver.)
	OS	Windows® 7 (32-bit Ver., 64-bit Ver.)
		[English, Japanese, Chinese or Korean version]
	Serial communication port	USB port
Dioploy	Resolution	1024 × 768pix or more (desirably 1024 × 768)
Display	Number of colors	24bit colors (TrueColor) or more

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



Command Control Mode A5II A5

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

Full-closed Control

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



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

Regenerative Energy Discharge



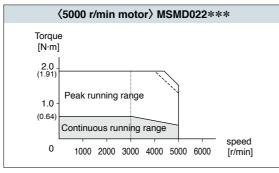
- A regenerative resistor is used to discharge regenerative energy, which is the energy generated when stopping a load with a large moment of inertia or when using this unit in vertical operation. This energy is returned to the driver from the motor.
- · Frame A, B, G and frame H model drivers do not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

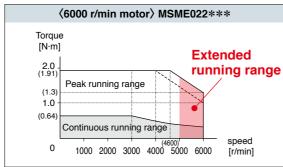
6000-rpm capability

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 A5II A5 A5I

- · With parameter settings, you can select dynamic braking, which shorts servomotor windings U, V and W at Servo-OFF, during positive direction/ negative direction, and during power shutdown and tripping of the circuit breaker for over travel inhibition.
- * The dynamic brake circuit of H-frame is external.
- The desired action sequence can be set up to accommodate your machine requirements.

Parameter Initialization A5II A5 A5IIE



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

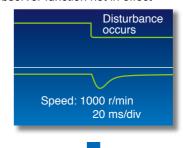
Disturbance Observer A5II A5 A5IIE A5E



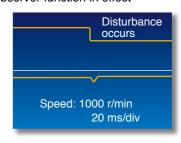


By using a disturbance observer to add an estimated disturbance torque value to the torque canceling command, this function diminishes the impact of the disturbance torque, reduces vibration, and offsets any speed decline.

Disturbance observer function not in effect



Disturbance observer function in effect



Torque Feed Forward A5II A5

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

Friction Torque Compensation



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

3-Step Gain

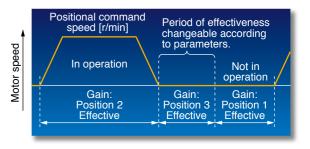


A 3-step gain switch is available in addition to the normal gain switch.

This chooses appropriate gain tunings at both stopping and running.

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

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





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

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

It ends up quicker response of your system.

Input/Output A5II A5 Signal Assignment

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

Torque Limiter Switching A5II A5 A5IIE A5E

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

Applicable international safety standards















			(A5II, A5 series) (A5IIE, A5E series)
		Driver	Motor
	EMC Directives	EN55011 EN61000-6-2 IEC61800-3	_
	Low-Voltage Directives	EN61800-5-1	EN60034-1 EN60034-5
EC Directives	Machinery Directives Functional safety '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

- 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)

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 s 4 × multiplica	•
		SR75	0.01 to 1	3.3
		SR85	0.01 to 1	3.3
Coriol Time (Incremental)	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
	Faces Automotics 0.00	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
	Mit. days Orange at large	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.

MINAS A5 Family

Model Designation

Motor Line-up

MINAS A5 Family

Motor Line-up

IVIC	Motor Line-up																				
					Rated rotational	Rotary	encoder														
	Мо	tor	Voltage	Rated output (kW)	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 typeSmall capacitySuitable for high												
			200 V	0.75	3000 (4500)	Ü	Ü	00	speed application • Suitable for all applications	Bonder Semiconductor production equipment											
Low inertia			100 V 200 V	0.05 0.1 0.2 0.4 3000	0	IP67	Small capacitySuitable for high speed application	Packing machines etc													
nertia	MONE		200 V	0.75	(6000)				Suitable for all applications												
	MSME		400 V	3000		.= (*0)	 Middle capacity Suitable for the machines directly coupled with ball 	• SMT machines • Food machines													
			200 V 400 V	2.0 3.0 4.0 5.0	3000	0	0	IP65 ^(*2)	screw and high stiffness and high repetitive applica- tion	 LCD production equipment etc 											
			400 V	0.4 0.6	(4500)					0.0											
	MDME A	200 V 400 V	1.0 1.5 2 2.0 3.0 (3	2000 (3000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low	• Conveyors • Robots • Machine												
				7.5 (*3)	1500				stiffness machines with belt driven	tool etc											
Midd												•	•		11.0 ^(*3)	(3000) 1500 (2000)					
Middle inertia	MFME (Flat type)		200 V 400 V	1.5 2.5 4.5	2000 (3000)	0	0	IP67	Middle capacity Flat type and suitable for machines with space limitation	Robots Food machines etc											
	MGME (Low speed/ High torque type		200 V 400 V	3.0 4.5 (*3) 6.0 (*3)	1000 (2000)	0	0	IP65 ^(*2)	Middle capacity Suitable for low speed and high torque application	Conveyors Robots Textile machines etc											
	MHMD		100 V 200 V 0.4 3000 (5000)	0	IP65	Leadwire type Small capacity Suitable for low	• Conveyors • Robots														
High i	IIVID		200 V	0.75	3000 (4500)			00	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 manufacturing											
															7.5 (*3)	1500 (3000)				and large load moment of inertia	equipment etc

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

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Servo Motor

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

Symbol 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 outpu
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
08	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		

Symbol Specifications 100 V 200 V 2 4 400 V 100 V/200 V Z common (50 W only)

Voltage specifications

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.

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

Special specifications

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

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

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

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

Design order

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

Motor with reduction gear

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

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

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

Voltage specifications											
Symbol	Specifications										
1	100 V										
2	200 V										
_	200 1										

Rotary encoder specifications

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

Gear ratio, gear type

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

* MHMD 100 W is not prepared.

Motor structure

* *

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

Servo Driver

Speed, Position, Torque, Full-closed type M A D K T 1 5 0 5 *** Position control type

Positi	on contro	I type	M	Α	D	K	T	1	5	0	5	Ε
Frame	symbol *											
Symbol	Frame	Symbol	Frame						Max	.		
MAD	Frame A	MED	Frame E			cur	rent i	rating	3			

	Onci	uc
	curren	t ra
	Symbol	Cu
	T1	

MDD Frame D MHD Frame H * A5IIE, A5E series is up to F-frame.

MBD Frame B MFD Frame F

MCD Frame C MGD Frame G

Series		
Symbol F	Velocity, Position, Torque, Full-Closed type	Position control type
K	A5I series	A5IIE series
Н	A5 series	A5E series

urrent rating 10 A

Supply voltage specifications T2 15 A T3 30 A Symbol Specifications T4 35 A Single phase, 100 V 50 A 75 A 100 A 150 A

300 A

Only position control **Current detector current rating**

Symbol	Specifications	Syl	IOUII	Specifications
05	5 A	4	Ю	40 A
07	7.5 A	6	64	64 A
10	10 A	9	90	90 A
12	12 A	A	۱2	120 A
20	20 A	Е	34	240 A
30	30 A			

Special specifications

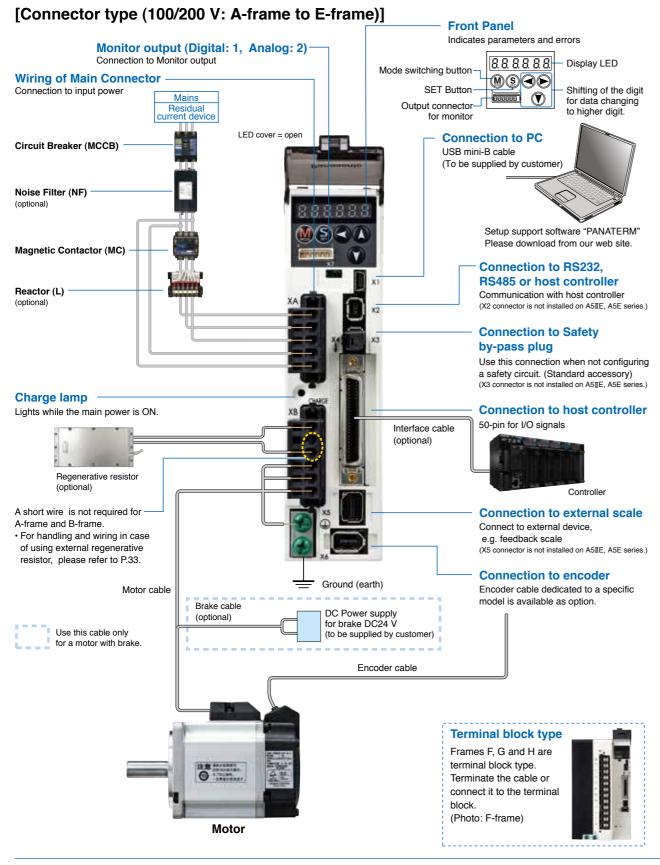
Special specifications

T5 3 3-phase, 200 V 4 3-phase, 400 V T7 5 Single/3-phase, 200 V TA TB

TC

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

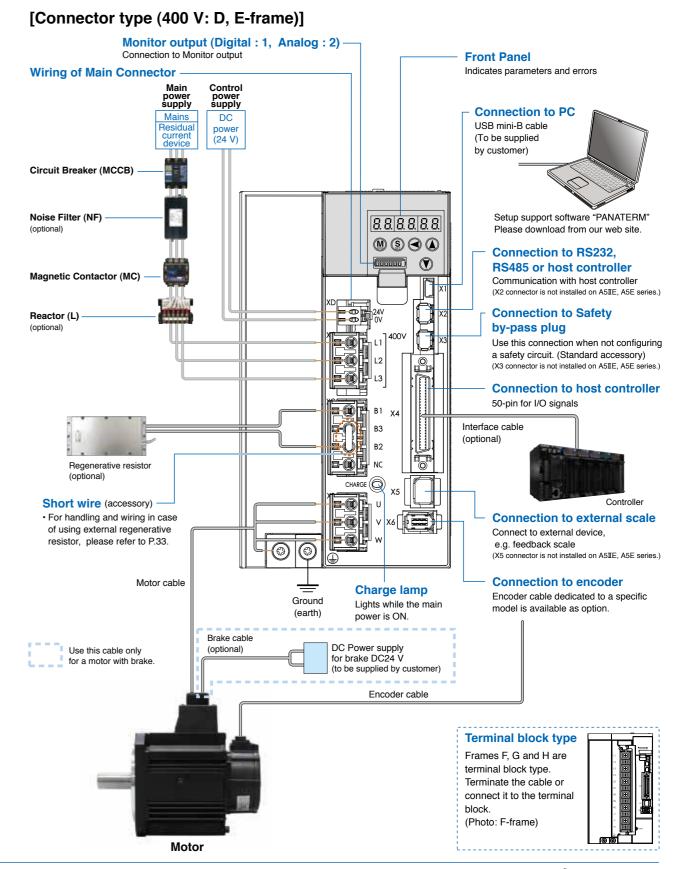
^{*} S: can be used in incremental.



<Caution>

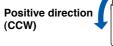
Apply adequate tightening torque to the product mounting screw by taking into consideration strength of the screw and the characteristics of material to which the product is installed. Overtightening can damage the screw and/or material; undertightening can result in loosening.

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



<Note>

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





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
MADH	MSME	Single phase, 100 V	50 W to 100 W	approx. 0.4 kVA		DV0P4170	DV0P4190								
MADK	MSMD MHMD	Single/ 3-phase,	50 W to 200 W	approx. 0.5 kVA		DV0P4170	DV0P4190								
	140145	200 V Single	200 W	approx.	10 A	DV0PM20042 DV0P4170	DV0P1450 DV0P4190			0.75 mm²/				0.75 mm²/	0.28 mm ² to 0.75 mm ² /
MBDH MBDK	MSME MSMD MHMD	100 V Single/ 3-phase,	400 W	0.5 kVA approx.		DV0P4170	DV0P4190		20 A (3P+1a)	AWG18 600 VAC or more				AWG18 600 VAC or more	AWG22 to AWG18 100 VAC
	IVII IIVID	200 V Single		0.9 kVA approx.		DV0PM20042	DV0P1450	-		ormore		0.75 mm²/		ormore	or more
MCDH	MSME MSMD	100 V Single/	400 W	0.9 kVA		DV0PM20042	DV0P4190					AWG18 600 VAC			
MCDK	MHMD	3-phase, 200 V	750 W	approx. 1.3 kVA	15 A							or more			
	MDME MHME		1.0 kW	approx. 1.8 kVA											
	MGME	Single/	0.9 kW	approx. 1.8 kVA approx.			DV0P4190 DV0P1450	DV0P1460	30 A		Conn		Conn		
	MSME MHME	3-phase, 200 V	1.0 kW	1.8 kVA	20 A	DV0P4220			(3P+1a)		ection		ection		
	MDME MFME MSME		1.5 kW	approx. 2.3 kVA							Connection to exclusive connector		Connection to exclusive connector		
MDDK	MDME MDME		400 W	approx. 0.9 kVA approx.							ive cc		ive cc		
WIDDIX	MSME		600 W 750 W	1.2 kVA approx. 1.6 kVA							onnect		nnect		
	MSME MDME	3-phase,	1.0 kW	approx.	10 A	FN258L-16-07	DV0PM20050		20 A	2.0 mm ² / AWG14	Ö	0.52 mm ² / AWG20	Õ	2.0 mm ² / AWG14	
	MHME MGME	400 V	0.9 kW	1.8 kVA	10 A	(Recommended) component	D VOF WIZOUSU		(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 MSME MHME	3-phase,	2.0 kW	approx. 3.3 kVA	30 A	DV0PM20043	DV0P1450	DV0P1460 RJ8035	60 A			0.75 mm²/ AWG18			
MEDH	MFME	200 V	2.5 kW	approx. 3.8 kVA	0071	D VOI WIZOU-IO	D V 01 1400	(Recommended) component *6	(3P+1a)			600 VAC or more			
MEDK	MSME MDME	3-phase,	2.0 kW	approx. 3.3 kVA		FN258L-16-07			30 A			0.52 mm²/ AWG20			
	MHME MFME	400 V	2.5 kW	approx.	15 A	(Recommended) component	DV0PM20050	DV0P1460	(3P+1a)			100 VAC or more			
	MGME		2.0 kW	3.8 kVA approx. 3.8 kVA											
	MDME MHME MSME		3.0 kW	approx. 4.5 kVA					60 A (3P+1a)		11 mm or smaller		11 mm or smaller		
	MGME MDME MHME	3-phase, 200 V	4.0 kW	approx. 6.0 kVA	50 A	DV0P3410	DV0P1450	DV0P1460 RJ8035 (Recommended component)			(O) 	0.75 mm²/ AWG18 600 VAC	φ5.3		
	MSME MFME		4.5 kW	approx. 6.8 kVA				*6	100 A		Terminal block	or more	Terminal block		0.75 mm²/ AWG18
	MGME MDME MHME		5.0 kW	approx. 7.5 kVA					(3P+1a)	3.5 mm²/	M5		M5	3.5 mm²/	100 VAC or more
MFDK	MSME MGME		2.0 kW	approx. 3.8 kVA						AWG12 600 VAC				AWG12 600 VAC	
	MSME MDME									or more	10 mm or		7	or more	
	MGME MHME MSME		3.0 kW	approx. 4.5 kVA		FN258L-30-07					smaller	0.75 mm²/	7 mm or smaller		
	MDME MHME	3-phase, 400 V	4.0 kW	approx. 6.0 kVA	30 A	(Recommended)	DV0PM20050	DV0P1460	60 A (3P+1a)		<u> </u> φ4.3	AWG18 100 VAC or more	<u>φ3.2</u>		
	MFME MGME		4.5 kW	approx. 6.8 kVA							Terminal block M4	of more	Terminal block M3		
	MSME MDME MHME		5.0 kW	approx. 7.5 kVA											
	MDME	3-phase,	7.5 kW	approx. 11 kVA approx.		FS5559-60-34			100 A		11 mm or smaller	0.75 mm²/ AWG18	10 mm or smaller		
	MGME	200 V	6.0 kW	9.0 kVA approx.	60 A	(Recommended) component	DV0P1450		(3P+1a)	5.3 mm ² /		600 VAC or more			
MGDH MGDK	MHME		7.5 kW 7.5 kW	11 kVA approx.		FN258-42-07				AWG10 600 VAC	φ5.3		φ5.3	13.3 mm²/ AWG6	
	MGME	3-phase, 400 V	6.0 kW	approx. 9.0 kVA	30 A	or FN258-42-33	DV0PM20050	DV0D4 400	60 A (3P+1a)	or more	Terminal	0.75 mm ² / AWG18 100 VAC	Terminal	600 VAC or more	
	МНМЕ	400 V	7.5 kW	approx. 11 kVA		(Recommended component)		DV0P1460 RJ8095 (Recommended)	(SF+IA)		block M5	or more	block M5		
			11 kW	approx. 17 kVA	100 A	FS5559-80-34		(Recommended) component T400-61D	450 :		16 mm or	0.75 mm²/	10 mm or		
		3-phase, 200 V	15 kW	approx. 22 kVA	125 A	(Recommended component	DV0P1450	(Recommended component *6	150 A (3P+1a)	13.3 mm²/	smaller	AWG18 600 VAC or more	smaller	21.1 mm ² / AWG4 600 VAC or more	
MHDH MHDK	MDME	3-phase,	11 kW	approx. 17 kVA	50 A	FN258-42-07 or	Divos		100 A	AWG6 600 VAC or more	Δ φ6.4 Terminal	0.75 mm²/ AWG18	Δ φ4.3 Terminal	13.3 mm²/ AWG6 600 VAC or more	
		400 V	15 kW	approx. 22 kVA	60 A	FN258-42-33 (Recommended component)	DV0PM20050		(3P+1a)	*3	block M6	100 VAC or more	block M4	21.1 mm²/ AWG4 600 VAC or more	

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

About circuit breaker and magnetic contactor

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

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

<Remarks>

- 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	Terminal cover fastening screw		
Frame	Terminal name	Nominal size	Fastening torque (N•m)	Nominal size	Fastening torque (N•m)	
F(200 V)	L1, L2, L3, L1C, L2C, B1, B2, B3, NC, U, V, W	M5	1.0 to 1.7			
F(400 V)	24V、0V	M3	0.4 to 0.6	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			
u	L1, L2, L3, B1, B2, NC, U, V, W	M5	2.0 to 2.4	M3	0.3 to 0.5	
Н	L1C, L2C, 24V, 0V, DB1, DB2	M4	0.7 to 1.0	M5	2.0 to 2.5	
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	Connector to host controller (X4)		
Driver frame	Nominal size	Fastening torque (N•m)	Nominal size	Fastening torque (N•m)	
A to E	M4	0.7 to 0.8			
G	M5	1.4 to 1.6	M2.6	0.3 to 0.35	
Н	M6	2.4 to 2.6			

<Caution>

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

		Motor				Driver		Power				Optional par	ts					
	Dower	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series Part No.		capacity	Encode	er Cable		Motor	Cable	Brake Cable	External	Reactor	Noise Filte	
Motor series	Power supply	(W)	Note) 1	Spec. (page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Frame	rated load / (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,8		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	Λ	Approx. 0.4							DV0P4280	DVADAAZ		
	Single phase	100	MSMD011 □ 1 *	51	MAD ◇ T1107	MAD ♦ T1107E	A-frame	Approx. 0.4							DV0F4280	DVUFZZI	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	MFECA 0 * * 0EAM						DV0P4282	DVUFZZO	DV0PM200	
(Leadwire) type		50	MSMD5AZ□1 *	50	MAD ◇ T1505	MAD ♦ T1505E		Approx. 0.5		MFECA 0 * * 0EAE		MFMCA 0 * * 0EED		MFMCB 0 * * 0GET	DV0P4281	D) /2D22=		
3000 r/min	Single	100	MSMD012 ☐ 1 *	52	MAD ◇ T1505	MAD ♦ T1505E	A-frame	Approx. 0.5		Note) 7					DV01 4201	DV0P227 DV0P220	DV0P417	
	phase/ 3-phase	200	MSMD022 □ 1 *	54	MAD ◇ T1507	MAD ◇ T1507E		Approx. 0.5									DV0PM200	
_	200 V	400	MSMD042 ☐ 1 *	56	MBD ◇ T2510	MBD ◇ T2510E	B-frame	Approx. 0.9							DV0P4283	DV0P228		
ow inertia		750	MSMD082 ☐ 1 *	57	MCD ♦ T3520	MCD ◇ T3520E	C-frame	Approx. 1.3								DV0P220	DV0PM20	
10 10 10 10 10 10 10 10		50	MSME5AZ ☐ 1 *	65	MAD 🔷 T1105	MAD \diamondsuit T1105E	A-frame	Approx. 0.4	MFECA	MFECA		MFM 0 * * 0		MFMCB 0 * * 0PJT	DV0P4280	DV0P227		
	Single phase	100	MSME011 □ 1 *	67	MAD \diamondsuit T1107	MAD ◇ T1107E	7 t-liane	Approx. 0.4	O * * 0MJD (For movable, direction of motor shaft) MFECA O * * 0MKD (For movable, direction of motor shaft) MFECA O * * 0MKD (For movable,) (For movable,)	/For movable,\		(For movidirection motor :	vable,\ on of	(For movable, direction of motor shaft	D V 01 4200	DVOI ZZI	DV0P417	
	100 V	200	MSME021 □ 1 *	69	MBD ♦ T2110	MBD ♦ T2110E	B-frame	Approx. 0.5		MFECA	motor shaft /		MFM 0 * * 0	ICA	MFMCB 0 * * 0PKT	DV0P4283	DV0P228	
MSME		400	MSME041 ☐ 1 *	71	MCD ♦ T3120	MCD ◇ T3120E	C-frame	Approx. 0.9		or movable, osite direction of motor shaft (opposite direction of motor shaft)	For movable, opposite direction of motor shaft	For movable, opposite direction of motor shaft	DV0P4282		DV0PM20			
(Connector type		50	MSME5AZ ☐ 1 *	66	MAD \diamondsuit T1505	MAD ◇ T1505E		Approx.	MFECA			MFMCA 0 * * 0RJD		MFMCB 0 * * 0SJT For fixed, direction of motor shaft	DV0P4281	DV0P227		
3000 r/min	Single	100	MSME012 ☐ 1 *	68	MAD \diamondsuit T1505	MAD ◇ T1505E	A-frame	Approx.	0 * * 0TJD For fixed, direction of	0 * * 0TJE (For fixed, (direction of)		For fix direction motor :	on of			DV0P220	DV0P417	
	phase/ 3-phase	200	MSME022 ☐ 1 *	70	MAD \diamondsuit T1507	MAD ◇ T1507E		Approx.	\motor shaft/ MFECA	motor shaft/ MFECA		MFM 0 * * 0		MFMCB 0 * * 0SKT			DV0PM20	
	200 V	400	MSME042 ☐ 1 *	72	MBD \diamondsuit T2510	MBD ◇ T2510E	B-frame	Approx.	O * * OTKD For fixed, opposite direction	0 * * 0TKE For fixed, opposite direction		For fix opposite of of motor	lirection	For fixed, opposite direction of motor shaft	DV0P4283	DV0P228		
		750	MSME082 ☐ 1 *	73	MCD ♦ T3520	MCD ♦ T3520E	C-frame	Approx.	of motor shaft	of motor shaft		Note	9) 6			DV0P220	DV0PM20	
	Single phase	200	MHMD021 □ 1 *	59	MBD \diamondsuit T2110	MBD ◇ T2110E		Approx.							DV0P4283	DV0P228	DV0P417	
MHMD (I eadwire)	100 V	400	MHMD041 □ 1 *	61	MCD ♦ T3120	MCD ♦ T3120E	C-frame	Approx.	MEEGA	MEEGA		3.453.4	104	MENAGE	DV0P4282	DV0P227	DV0PM20	
type	Single	200	MHMD022 □ 1 *	60	MAD \diamondsuit T1507	MAD ◇ T1507E	A-frame	0.5	MFECA 0 * * 0EAM	MFECA 0 * * 0EAE		MFM 0 * * 0		MFMCB 0 * * 0GET		DV0P227 DV0P220	DV0P41	
ភ្លឺៈ 3000 r/min	3-phase	400	MHMD042 □ 1 *	62	MBD \diamondsuit T2510	MBD ◇ T2510E	B-frame	Approx. 0.9		Note) 7	Note) 7					DV0P4283	DV0P228	DV0PM20
	200 V	750	MHMD082 □ 1 *	63	MCD ◇ T3520	MCD ♦ T3520E	C-frame	Approx. 1.3								DV0P220	DV0PM20	

Opposite direction of

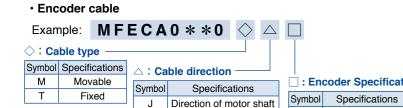
- Note) 2 🔷 : Drivers series K: A5II series H: A5 series
- Note) 3 ♦: Drivers series K: A5IE series H: A5E series
- Note) 4 Because A5IIE, A5E series drivers (dedicated for position control) do not support the 17-bit absolute specification, only 20-bit incremental type can be used in combination.

50 W to 750 W

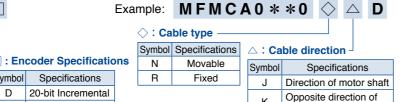
(MSME

: IP67

- Note) 5 Cable length: ** (03: 3 m, 05: 5 m, 10: 10 m, 20: 20 m) (Example. 3 m: MFECA0030EAM)
- Selection of cable for MSME motor (Movable: For application where the cable is movable.) Fixed: For application where the cable is fixed.

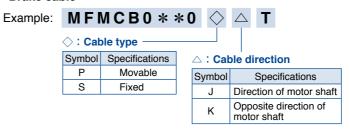


· Motor cable



- 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.

· Brake cable



	Title		Part No.				
Interface Cable			DV0P4360				
			DV0P4120				
			DV0P4121				
Interface Conve	ersion Cab	ole	DV0P4130				
			DV0P4131				
			DV0P4132				
Connector Kit for Power	A-frame	Single row type	DV0PM20032				
Supply Input Connection	to D-frame	Double row	DV0PM20033				
Connector Kit for Motor Connection	A-frame	to D-frame	DV0PM20034				
0			DV0P4290				
Connector Kit for Motor/Encoder		n	DV0P4380				
			DV0PM20035				
Connector Kit for			DV0PM20040				
Motor/Brake Co		Degga	DV0DM20024				
	RS485, Safety	10232	DV0PM20024 DV0PM20025				
	Interface	<u> </u>	DV0P4350				
Connector Kit	External		DV0P4350 DV0PM20026				
	Encoder		DV0PM20026				
		Ionitor Signa					
Battery For Abs			DV0P2990				
Battery Box No		ouei					
Dattery Dox 140	A-frame		DV0P4430 DV0PM20027				
Mounting	B-frame		DV0PM20027				
Bracket	C-frame		DV0PM20029				
	C-II allie		MFECA0**0EAD				
			MFECA0**0EAM				
			MFECA0**0MJD				
	without E	Battery Box	MFECA0**0MKD				
			MFECA0**0TJD				
Encoder Cable			MFECA0**0TKD				
Elicodel Cable			MFECA0**0EAE				
			MFECA0**0MJE				
	with Batt	,	MFECA0**0MKE				
	Note) 8	3	MFECA0**0TJE				
			MFECA0**0TKE				
			MFMCA0**0EED				
			MFMCA0**0NJD				
Motor Cable	without E	Brake	MFMCA0**0NKD				
			MFMCA0**0RJD				
			MFMCA0**0RKD				
	1		MFMCB0**0GET				
			MFMCB0**0PJT				
Brake Cable			MFMCB0**0PKT				
			MFMCB0**0SJT				
			MFMCB0**0SKT				
	50 Ω 25	W	DV0P4280				
	100 Ω 2		DV0P4281				
External	25 Ω 50		DV0P4282				
Regenerative Resistor	50 Ω 50		DV0P4283				
เชอเอเปเ	30 Ω 100		DV0P4284				
	20 Ω 130		DV0P4285				
Reactor	DV0P22 DV0P22	0, DV0P221 3, DV0P224	I, DV0P222, I, DV0P225, I, DV0P20047				
Noise Filter		70, DV0PM 20, DV0PM					
	DV0P34						
Surge	Single p		DV0P4190				
Absorber	3-phase		DV0P1450				

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E 17-bit Absolute

A5 Family Table of Part Numbers and Options

0.4 kW to 5.0 kW IP65 motor

		Motor				Driver		Power			Option	al parts					
lotor series	Power supply	Output (W)	Part No. Note) 1	Rating/	A5II series A5 series Part No. Speed, Position,	A5IIE series A5E series Part No. (Position control)	Frame	capacity (at (rated)	20-bit	17-bit	without	with	Brake Cable	External Regenerative	Reactor Single phase	Noise Filter	
				(page)	Full-Closed type Note) 2	Note) 3,4		(kVA)	Note) 5	Absolute Note) 4,5,8	Brake Note) 5	Brake Note) 5	Note) 5	Hesistor	3-phase		
	phase/			74	·		D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P222	DV0P4220	
	200 V				·	-	- .		MFECA	MFECA	0**2ECD	0**2FCD	_	DV0P4285	DV0P222	DVODNAGO 40	
					<u> </u>	-	⊢ -trame		0**0ESD	0**0ESE				Note) 6		DV0PM20043	
MSME	3-pnase 200 V	4000	MSME402 ☐ C *	78	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	
3000 r/min				-	-	·								•	Note) 7		
		1000	MSME104 ☐ C *	105	MDD 🔷 T3420	MDD ♦ T3420E	D-frame	Approx. 1.8			MFMCD	MFMCE 0**2FCD		DV0PM20048		Recommended	
	3-phase						E-frame		MFECA	MFECA	0 2200	0 21 00	_	DV0PM20049		components	
	400 V							Approx. 4.5	0**0ESE	MEMOA	MEMCA			Note) 7	P.252		
					•	·	F-frame	<u> </u>									
		5000	MSME504 ☐ C *	110	MFD ♦ TA464	MFD ♦ TA464E		Approx. 7.5			0 0201	0 0101		AL III parailor	DVODOOO		
	phase/			80	·	-	D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P222	DV0P4220	
	200 V	1500	MDME152 □ C *	81	MDD ◇ T5540	MDD ◇ T5540E		Approx. 2.3	MFECA	MFECA	0**2ECD	0**2FCD			DV0P222		
	_			82	-			Approx. 4.5 0**0ESD	0**0ESE			_	DV0P4285 Note) 7	DV0P223	DV0PM20043		
										MEMCA	MEMCA		DV0P4285		-		
MDME	200 V						F-frame				0**3ECT	0**3FCT		×2 in parallel	_	DV0P3410	
2000 r/min					-	-		Approx. 0.9					•	Note) 7			
		600 1000	MDME064 \square C * MDME104 \square C *	112 113	MDD ♦ T2407 MDD ♦ T2412	MDD ♦ T2407E MDD ♦ T2412E	D-frame		1.2 1.8 2.3 MFECA 0**0ESD		MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		Recommended	
	3-phase 400 V						E-frame			0**0ESE			_	DV0PM20049	Note) 7	components	
								Approx. 4.5			MFMCA	MFMCA		DV0PM20049		P.252	
							F-frame	Approx. 6 Approx. 7.5			0**3ECT	0**3FCT		×2 in parallel			
MGME	Single phase/ 3-phase 200 V	900	MGME092 □ C *	92	MDD ◇ T5540	MDD ◇ T5540E	D-frame	Approx. 1.8	MFECA 0**0ESD	MFECA 0**0ESE	MFMCD 0**2ECD	MFMCA **2FCD	_	DV0P4284	DV0P228 DV0P221	DV0P4220	
High torque	3-phase 200 V						F-frame	Approx. 3.8 Approx. 4.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P223 DV0P224	DV0P3410	
1000 r/min							D-frame		MEECA	MEECA	MFMCD	MFMCE		DV0PM20048		Recommended	
•	400 V	2000	MGME204 □ C *	126	MFD \diamondsuit T5440	MFD \diamondsuit T5440E	F.	Approx. 3.8					-	DV0PM20049	Note) 7	components	
		3000	MGME304 ☐ C *	127	MFD \diamondsuit TA464	MFD \diamondsuit TA464E	⊢ -trame	Approx. 4.5			0**3ECT	0**3FCT		x2 in parallel	,	P.252	
	Single phase/	1000	MHME102 □ C *	97	MDD \diamondsuit T3530	MDD \diamondsuit T3530E	D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P228/ DV0P222	DV0P4220	
	3-pnase 200 V	1500	MHME152 ☐ C *	98	MDD \diamondsuit T5540	MDD \diamondsuit T5540E		Approx. 2.3	MEEO.	MEECA					DV0PM20047/ DV0P222		
		2000	MHME202 □ C *	99	MED ♦ T7364	MED ◇ T7364E	E-frame	Approx. 3.3	0**0ESD	0**0ESE	MFMCE 0**2ECD	MFMCE 0**2FCD		DV0P4285 Note) 6	DV0P223	DV0PM20043	
МПМЕ	3-phase 200 V						□ trams				MFMCA	MFMCA		DV0P4285	DV0P224 DV0P225	DV0P3410	
2000 r/min							_ r-irame	Арргох. 7.5			0**3ECT	0**3FCT		x2 in parallel	Note) 7	DVUP3410	
							D-frame				MFMCD 0**2FCD	MFMCE 0**2FCD			,		
	3-phase		MHME204 C *			MED \diamondsuit T4430E	E-frame		MFECA	MFECA	MFMCE	MFMCE	1	DV0PM20049	_	Recommended	
	•	_550		.02	5 🗸 1 7700	L5 V 1-1100L			0**0FSD	0**0FSD	0**0ESE	0**2ECD	0**2FCD			Note) 7	components
	400 V	3000	MHME304 ☐ C *	133	MFD \diamondsuit T5440	MFD \diamondsuit T5440E		Approx. 4.5	0 0202	0 OLOL	MFMCA	MFMCA		DV0PM20049	Note) 7	P.252	
	MDME 2000 r/min MGME (Low speed/High torque type) 1000 r/min	Single phase/3-phase 200 V	Name Single phase 1000 3-phase 2000 3000 4000 5000 1500 2000 3-phase 200 V 3000 4000 5000 1500 2000 3-phase 200 V 4000 5000 1500 2000 3-phase 200 V 4000 5000 1500 2000 3-phase 200 V 2000 3000 4000 1500 2000 3-phase 400 V 2000 3000 4000 1500 2000 3000 4000 1500 2000 3000 4000 1500 2000 3000 4000 1500 2000 3000 4000 1500 2000 3000 4000 1500 2000 3000 4000 1500 2000 3000 4000 1500 2000 3000 3000 4000 3-phase 2000 2000 3000 3-phase 2000 3-phase 3-phase 2000 3-phase 2000	Single phase/3-phase 200 V Single phase/400 V Single phase/3-phase 400 V Single phase/3-phase 200 V Single phase/3-phase 200 V Single phase/400 V Single phase/3-phase 200 V Single phase/400 WhME152 C * * * * * * * * * * * * * * * * * *	Single phase/3-phase 200 V Single phase/400 V Single phase/3-phase 200 V Single phase/400 V Single phase/3-phase 200 V S	Notor series Power supply Output supply (W) Part No. Note) 1 Note) 2 Part No. Spec. (page) Part No. Spec. (page) Part No. Note) 2 Note) 2 Note) 2 Note) 2 Note) 3 Note) 3 Note) 2 Note) 3 Note 3 Note) 3 Note 3 Note) 3 Note) 3 Note) 3 Note) 3 Note) 3 Note 3 Note) 3 Note) 3 Note 3 Note) 3 Note	Notor series	Note Power supply Note Part No. Note 1 Note Part No. Note 2 Note Part No. Note 2 Note Part No. Position control byte Note 3.4	Notor series Power supply Dutput Part No. Note) 1 Speech, Position. (page) Part No. (page)		Power supply Output Part No. Note) 1 Note Part No. Note) 1 Note Part No. Note) 2 Note Note) 2 Note Part No. Note Part No. Note Part No. Note Part No. Note) 2 Note Part No. Note Part No. Note Part No. Note) 2 Note Part No. Note Part No. Note Part No. Note) 2 Note Part No. Note Part No. Note Part No. Note) 2 Note Part No. Note Part No.	Notice series Power Notice Power Power Notice Power Power Notice Power Power					

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

<u> </u>

	Title	Part No.			
Interface Cable		DV0P4360			
		DV0P4120			
		DV0P4121			
Interface Conve	rsion Cable	DV0P4130			
		DV0P4131			
		DV0P4132			
	A frame Single row				
Connector Kit	to D-frame Double row	DV0PM20032 DV0PM20033			
for Power	туре	D V 01 1V120033			
Supply Input Connection	E-frame (200 V)	DV0PM20044			
	D-frame (400 V)	DV0PM20051			
	E-frame (400 V)	DV0PM20052			
Connector Kit for Control Power Supply Input Connection	D-frame and E-frame (400 V)	DV0PM20053			
Connector Kit	A-frame to D-frame	DV0PM20034			
for Motor	E-frame (200 V)	DV0PM20046			
Connection	D-frame (400 V)	DV0PM20054			
Connector Kit	E-frame	DV0PM20045			
for Regenerative		DV0PM20055			
Resistor	D-frame (400 V)				
		DV0P4310			
Connector Kit fo		DV0P4320			
Motor/Encoder (Connection	DV0P4330			
		DV0P4340			
	RS485, RS232	DV0PM20024			
	Safety	DV0PM20025			
0	Interface	DV0P4350			
Connector Kit	External Scale	DV0PM20026			
	Encoder	DV0PM20010			
	Analog Monitor Signal	DV0PM20031			
Battery For Abs		DV0P2990			
Battery Box No		DV0P4430			
Mounting Bracket	D-frame	DV0PM20030			
	without Battery Box	MFECA0**0ESD			
Encoder Cable	with Battery Box Note) 8	MFECA0**0ESE			
		MFMCA0**2ECD			
		MFMCD0**2ECD			
		MFMCE0**2ECD			
	without Brake	MFMCF0**2ECD			
		MFMCA0**3ECT			
Motor Cable		IVII IVIOAU ULUI			
Motor Cable		MFMCD0**3ECT			
Motor Cable					
Motor Cable	with Brake	MFMCD0**3ECT			
Motor Cable	with Brake	MFMCD0**3ECT MFMCA0**2FCD			
Motor Cable	with Brake 50 Ω 25 W	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD			
Motor Cable		MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280			
Motor Cable	50 Ω 25 W 100 Ω 25 W	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281			
Motor Cable External	50 Ω 25 W 100 Ω 25 W 25 Ω 50 W	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282			
External Regenerative	50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283			
External	50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W 30 Ω 100 W	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284			
External Regenerative	50 Ω 25 W 100 Ω 25 W 25 Ω 50 W 50 Ω 50 W 30 Ω 100 W 20 Ω 130 W	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4284			
External Regenerative	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	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285			
External Regenerative	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 80 Ω 190 W	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049			
External Regenerative	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	MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225,			
External Regenerative Resistor	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 80 Ω 190 W DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228, DV0P4170, DV0PM2	MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM225, DV0PM20047			
External Regenerative Resistor	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 80 Ω 190 W DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228,	MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM225, DV0PM20047			
External Regenerative Resistor	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 80 Ω 190 W DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228, DV0P4170, DV0PM2	MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM225, DV0PM20047			
External Regenerative Resistor	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 80 Ω 190 W DV0P220, DV0P221, DV0P224, DV0P227, DV0P228, DV0P4170, DV0PM2 DV0P4170, DV0PM2	MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0PM225, DV0PM20047			
External Regenerative Resistor Reactor Noise Filter	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 80 Ω 190 W DV0P220, DV0P221, DV0P223, DV0P224, DV0P227, DV0P228, DV0P4170, DV0PM2 DV0P4220, DV0PM2 DV0P4210, DV0PM2	MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043			
External Regenerative Resistor Reactor Noise Filter	$50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $50 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ $120 \Omega 80 W$ $120 \Omega 90 W$ 120Ω	MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047 0042 0043			

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

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

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

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

Note) 7 Reactor should be prepared by the user.

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.

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

		ı	Motor				Driver		Power			Ор	ional parts					
	Motor series	Power	Output	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series Part No.	Frame	capacity at rated		er Cable		lotor Cable	Brake Cable		Reactor	Noise Filter	
	Wotor series	supply	(W)	Note) 1	(page)	(Speed, Position, Torque, Full-Closed type) Note) 2	(Position control type Note) 3,4	Traine	(kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9	witho Brak Note)	e Brake	Note) 5	Resistor	Single phase 3-phase	Noise Filter	
		Single phase/ 3-phase	1000	MSME102 ☐ 1 *	74	MDD ◇ T5540	MDD ◇ T5540E	D-frame	Approx. 1.8			MEM	D MFMCA		DV0P4284	DV0P228 DV0P222 DV0PM20047	DV0P4220	
		200 V		MSME152 ☐ 1 *	75	MDD \diamondsuit T5540	MDD \diamondsuit T5540E		Approx. 2.3	MFECA	MFECA	0**2E		_	DV0D4005	DV0P222		
					76	MED ◇ T7364	MED ◇ T7364E	E-frame		0**0ETD	0**0ETE				DV0P4285 Note) 7	DV0P223	DV0PM20043	
٥		3-phase 200 V		MSME302 1 * MSME402 1 *	77 78	·	MFD ♦ TA390E MFD ♦ TB3A2E	_	Approx. 4.5 -frame Approx. 6 Approx. 7.5		MFM	CA MFMCA		DV0P4285	DV0P224 DV0P225	. DVODO 440		
Low inertia	MSME		5000	MSME502 1 *	79		MFD \diamondsuit TB3A2E	. F-frame				O**3FCT		x2 in parallel	_	DV0P3410		
ertia	3000 r/min		750	MSME084 1 *		Ť	MDD \diamondsuit T2412E		Approx. 1.6							Note) 8		
			1000		105	MDD \diamondsuit T3420	MDD \diamondsuit T3420E	D-frame		_		MFMO	D MFMCE		DV0PM20048			
		0 =====	1500	MSME154 ☐ 1 *	106	MDD 🔷 T3420	MDD ♦ T3420E		Approx. 4.5 0**0ETD (FECA MFECA		*2ECD 0**2FCD			_	Recommended		
		3-phase 400 V		MSME204 ☐ 1 *	107	MED \diamondsuit T4430	MED ♦ T4430E	E-frame						DV0PM20049	Note) 8	components		
			3000	MSME304 ☐ 1 * MSME404 ☐ 1 *		MFD \diamondsuit TA464	MFD \diamondsuit T5440E MFD \diamondsuit TA464E	F.				CA MFMCA		DV0PM20049		P.252		
			4000 5000	MSME404 1 *		· -	MFD \diamondsuit TA464E	F-trame			0**3E	CT 0**3FCT		x2 in parallel				
		Single phase/			80	MDD ♦ T3530	MDD ♦ T3530E		Approx. 1.8						DV0P228 DV0P222			
		3-phase 200 V	1500	MDME152 □ 1 *	81	MDD ◇ T5540	MDD ♦ T5540E	E-frame Approx. 3. Approx. 4. F-frame Approx. 6	Approx. 2.3	-		MFM0 0**2E			DV0P4284	DV0PM20047 DV0P222	DV0P4220	
			2000	MDME202 □ 1 *	82	MED ◇ T7364	MED ◇ T7364E		Approx. 3.3	MEEGA	MEECA				DV0P4285 Note) 7	DV0P223	DV0PM20043	
				MDME302 1 *		· ·	MFD \diamondsuit TA390E		Approx. 4.5	MFECA 0**0ETD	MFECA 0**0ETE	MFM	CA MFMCA	-	DV0P4285	DV0P224		
		3-phase		MDME402		·	MFD ♦ TB3A2E			-		0**3E			x2 in parallel	DV0P225	DV0P3410	
		200 V		_	86	MGD \diamondsuit TC3B4	MFD V IBSAZE	G-frame	Approx. 7.5 Approx. 11	11 17 22		_	_		DV0P4285 ×3 in parallel	_	Recommended	
	MDME		11000	MDMEC12 ☐ 1 *	87	MHD ♦ TC3B4	_	H-frame	Approx. 17			Note)			DV0PM20058	Note) 8	components P.252	
	2000 r/min		15000			MHD ♦ TC3B4		n-trame	Approx. 22						DV0PM20058		P.252	
	2000 1/111111		400	MDME044 1 *		MDD ◇ T2407	MDD \diamondsuit T2407E		Approx. 0.9	-			MFMCD MFMCE					
			1000	MDME064 ☐ 1 * MDME104 ☐ 1 *		MDD ⟨> T2412	MDD 🔷 T2412F	1)-frame	Approx. 1.2 Approx. 1.8	_					DV0PM20048			
Ĭ				MDME154 [] 1 *					Approx. 2.3	-		0**2E	CD 0**2FCD					
Middle inertia			2000	MDME204 □ 1 *	115	MED \diamondsuit T4430	MED \diamondsuit T4430E	E-frame	Approx. 3.3						DV0PM20049		Recommended	
ine				MDME304 □ 1 *					Approx. 4.5	MFECA	⊣		MFM	CA MFMCA	MEMCA -	DV0PM20049	_	components
a⊟a		400 V		MDME404		-	MFD ♦ TA464E	F-frame		0**0ETD	0**0ETE	0**3E			x2 in parallel	Note) 8	P.252	
				MDME754 □ 1 *		MGD \diamondsuit TB4A2	MFD V TA404E	G-frame	Approx. 7.5 G-frame Approx. 11		_	_		DV0PM20049 ×3 in parallel	_			
			11000	MDMEC14 1 *	120	MHD ♦ TB4A2	_	ш	Approx. 17	-		Note)			DV0PM20059			
			15000	MDMEC54 ☐ 1 *	121	MHD \diamondsuit TB4A2		H-frame	Approx. 22						DV0PW20059			
		Single phase/ 3-phase 200 V	1500	MFME152 □ 1 *	89	MDD \diamondsuit T5540	MDD ◇ T5540E	D-frame	Approx. 2.3		MFECA	MFM0**2E			DV0P4284	DV0PM20047 DV0P222	DV0P4220	
	MFME	3-phase	2500	MFME252 ☐ 1 *	90	MED ◇ T7364	MED ◇ T7364E	E-frame	Approx. 3.8	0**0ETD	0**0ETE	MFM 0**2E	CD 0**2FCD	_	DV0P4285 Note) 7	DV0P224	DV0PM20043	
	(Flat type) 2000 r/min	200 V	4500	MFME452 □ 1 *	91	MFD \diamondsuit TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6.8			MFM(0**3E			DV0P4285 ×2 in parallel	— Note) 8	DV0P3410	
				MFME154 🗌 1 *			MDD \diamondsuit T3420E			-		MFM			DV0PM20048	1	Recommended	
		3-phase 400 V	2500	MFME254 ☐ 1 *	123	MED \diamondsuit T4430	MED ◇ T4430E	E-frame	Approx. 3.8		MFECA 0**0ETE	0**2E			DV0PM20049		components	
		700 V	4500	MFME454 ☐ 1 *	124	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	0**0ETD	U UEIE	MFM0 0**3E			DV0PM20049 ×2 in parallel	Note) 8	P.252		

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: 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 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.

	7 motor) Title		Part No.	Dec		
	litie			Pag		
Interface Cable			DV0P4360			
			DV0P4120			
			DV0P4121	197		
Interface Conve	rsion Cab	le	DV0P4130	137		
			DV0P4131			
			DV0P4132			
	A-frame	Single row type	DV0PM20032			
Connector Kit for Power	to D-frame	Double row	DV0PM20033			
Supply Input	E-frame		DV0PM20044	200		
Connection	D-frame	` '	DV0PM20044	-		
		, ,		-		
Connector Kit for Control Power Supply Input Connection	D-frame E-frame	and	DV0PM20052 DV0PM20053			
Connector Kit	A-frame	to D-frame	DV0PM20034	20		
for Motor	E-frame	(200 V)	DV0PM20046	20		
Connection	D-frame	-	DV0PM20054			
Connector Kit	E-frame	,/	DV0PM20045			
for Regenerative Resistor	D-frame	(400 V)	DV0PM20055			
3	I.	-	DV0PM20036	203		
Connector Vit fo	_		DV0PM20037	200		
Connector Kit fo Motor/Encoder (n	DV0FM20037	204		
Wioton/Enlocation (30111100110			00		
	DO 405		DV0PM20039	20		
	RS485,	RS232	DV0PM20024			
	Safety		DV0PM20025	198		
Connector Kit	Interface)	DV0P4350			
COMMODICATION	External	Scale	DV0PM20026			
	Encoder		DV0PM20010	199		
	Analog M	Ionitor Signal	DV0PM20031			
Battery For Abso	olute Enco	oder	DV0P2990	00.		
Battery Box Not	te) 9		DV0P4430	20		
Mounting Bracket	D-frame		DV0PM20030	20		
	without E	Battery Box	MFECA0**0ETD			
Encoder Cable	with Batt Note) 9	,	MFECA0**0ETE	190		
			MFMCA0**2ECD	19		
			MFMCD0**2ECD			
			MFMCE0**2ECD	19		
	without E	Brake	MFMCF0**2ECD	1		
Motor Cable			MFMCA0**3ECT			
			MFMCD0**3ECT	19		
			MFMCA0**2FCD			
	with Bral	kο	MFMCE0**2FCD	194		
	willi Dial	NG.		10		
	50.0.05	\A/	MFMCA0**3FCT	19		
	50 Ω 25		DV0P4280			
	100 Ω 2		DV0P4281			
External	25 Ω 50		DV0P4282			
Regenerative	50 Ω 50	W	DV0P4283	210		
Resistor	30 Ω 100) W	DV0P4284	-''		
	20 Ω 130) W	DV0P4285			
	120 Ω 80) W	DV0PM20048			
	80 Ω 190) W	DV0PM20049			
Reactor	DV0P22	0, DV0P221, 3, DV0P224, 7, DV0P228,		209		
Noise Filter	DV0P41	70, DV0PM2 20, DV0PM2	0042	250		
INDISE FIILE!	DV0F34			25		
			DV0D4100	∠5		
			DV0P4190			
	Single pl			-		
Surge Absorber	3-phase	(200V)	DV0P1450	250		
Surge Absorber Noise Filter for S	3-phase 3-phase	(200V) (400V)		25 25		

	Motor				Driver		Power				Optional	parts						
		Dawar	Outnut	Part No.	Rating/	A5II series A5 series Part No.	A5IIE series A5E series		capacity	Encode	er Cable		Motor	Cable	Brake Cable	External	Reactor	
	Motor series	Power supply	Output (W)	Note) 1	Spec. (page)	(Speed, Position, Torque, (Full-Closed type) Note) 2	Part No. (Position control type Note) 3,4	Frame	(rated load (kVA)	20-bit Incremental Note) 5	17-bit Absolute Note) 4,5,9		without Brake Note) 5	with Brake Note) 5	Note) 5	Regenerative Resistor	Single phase 3-phase	Noise Filter
		Single phase/ 3-phase 200 V	900	MGME092 □ 1 *	92	MDD \diamondsuit T5540	MDD \diamondsuit 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] [DV0P223	
			3000	MGME302 □ 1 *	94	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 4.5	0**0ETD	0**0ETE		MFMCA 0**3ECT	MFMCA 0**3ECT	_	DV0P4285 ×2 in parallel	DV0P224	DV0P3410
	MGME	3-phase	4500	MGME452 □ 1 *	95	MFD ♦ TB3A2	MFD ♦ TB3A2E	1	Approx. 7.5			0 JLO1	0**3FCT		XZ III parallel			
ואווטטופ ווופונומ	Low speed/ High torque type	200 V	6000	MGME602 □ 1 *	96	MGD ◇ TC3B4	_	G-frame	Approx. 9.0			Note) 6	Note) 6		DV0P4285 ×3 in parallel	Note) 7	Recommended components P.252	
וומ	1000 r/min		900	MGME094 □ 1 *	125	MDD ◇ T3420	MDD \diamondsuit T3420E	D-frame)-frame Approx. 1.8				MFMCD 0**2ECD	MFMCE 0**2FCD		DV0PM20048		
		_	2000	MGME204 ☐ 1 *	126	MFD \diamondsuit T5440	MFD \diamondsuit T5440E	1	Approx. 3.8] [Recommended
		3-phase 400 V	3000	MGME304 ☐ 1 *	127	MFD \diamondsuit TA464	MFD ♦ 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
		100 1	4500	MGME454 ☐ 1 *	128	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5	0 OLID	O OLIL		0 OLO1	0 0101		×2 III paraller	14010) 7	P.252
			6000	MGME604 □ 1 *	129	MGD ♦ TB4A2	_	G-frame	G-frame Approx. 9.0				— Note) 6	Note) 6		DV0PM20049 ×3 in parallel		
		Single phase/	1000	MHME102 □ 1 *	97	MDD ◇ T3530	MDD ◇ T3530E	D. 6	MFECA				MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222	DV0P4220
		3-phase 200 V	1500	MHME152 □ 1 *	98	MDD ◇ T5540	MDD \diamondsuit T5540E	D-irame		3.3 MFECA MFECA			0**2ECD	0**2FCD		DV0F4204	DV0PM20047 DV0P222	DV0F4220
			2000	MHME202 □ 1 *	99	MED ◇ T7364	MED ◇ T7364E	E-frame					MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 8	DV0P223	DV0PM20043
			3000	MHME302 ☐ 1 *	100	MFD \diamondsuit TA390	MFD ♦ TA390E		Approx. 4.5)**0ETE	MFMCA	MEMCA		DV0D4295	DV0P224		
		3-phase	4000	MHME402 ☐ 1 *	101	MFD ♦ TB3A2	MFD ♦ TB3A2E	F-frame	Approx. 6				0**3ECT			DV0P4285 ×2 in parallel	DV0P225	DV0P3410
		200 V	5000	MHME502 ☐ 1 *	102	MFD ♦ TB3A2	MFD ♦ TB3A2E		Approx. 7.5							•		
ngii iiei iia	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			DV0PM20048		
			1500	MHME154 ☐ 1 *	131	MDD 🔷 T3420	MDD ♦ T3420E	D-irame	Approx. 2.3				0**2ECD	MFMCE		D V UF IVIZUU48		
		2 phase		MHME204 □ 1 *	132	MED ◇ T4430	MED ◇ T4430E	E-frame	Approx. 3.3	MFECA	MFECA		MFMCE 0**2ECD	0**2FCD		DV0PM20049		Recommended
		3-phase 400 V		MHME304 ☐ 1 *			MFD \diamondsuit T5440E		Approx. 4.5	0**0ETD	0**0ETE		MFMCA	MFMCA	-	DV0PM20049	Note) 7	components
			4000	MHME404 ☐ 1 *	134	MFD \diamondsuit TA464	MFD ♦ TA464E	F-frame	Approx. 6				0**3ECT	0**3FCT		×2 in parallel	,	P.252
			5000	MHME504 ☐ 1 *	135	MFD \diamondsuit TA464	MFD ♦ TA464E		Approx. 7.5				0 0201	5 5, 5,		paranor		
			7500	MHME754 ☐ 1 *	136	MGD ♦ TB4A2	_	G-frame	Approx. 9.0				— Note) 6	Note) 6		DV0PM20049 x3 in parallel		

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

0.9 kW to 7.5 kW IP67 motor (MGME)

	Title	Part No.			
Interface Cable		DV0P4360			
		DV0P4120			
		DV0P4121			
Interface Conve	rsion Cable	DV0P4130			
interiace conve	TOTOTT CUDIC	DV0P4131			
		DV0P4132			
	Single row	DV0F4132			
Connector Kit	to type	DV0PM20032			
for Power Supply Input	b-irame type	DV0PM20033			
Connection	E-frame (200 V)	DV0PM20044			
	D-frame (400 V)	DV0PM20051			
Connector Kit for Control Power	D-frame and	DV0PM20052 DV0PM20053			
Supply Input Connection	E-frame (400 V)				
Connector Kit	A-frame to D-frame	DV0PM20034			
for Motor	E-frame (200 V)	DV0PM20046			
Connection	D-frame (400 V)	DV0PM20054			
Connector Kit	E-frame	DV0PM20045			
for Regenerative	D-frame (400 V)	DV0PM20055			
Resistor	5 Haine (700 V)				
		DV0PM20036			
Connector Kit fo	•	DV0PM20037			
Motor/Encoder (Johnection	DV0PM20038			
		DV0PM20039			
	RS485, RS232	DV0PM20024			
	Safety	DV0PM20025			
Connector Kit	Interface	DV0P4350			
Commodor Nit	External Scale	DV0PM20026			
	Encoder	DV0PM20010			
	Analog Monitor Signal	DV0PM20031			
Battery For Abso		DV0P2990			
Battery Box Not	te) 9	DV0P4430			
Mounting Bracket	D-frame	DV0PM20030			
	without Battery Box	MFECA0**0ETD			
Encoder Cable	with Battery Box Note) 9	MFECA0**0ETE			
	11010) 0	MFMCA0**2ECI			
	110.07 0	MFMCA0**2ECD			
	110107 0	MFMCA0**2ECD MFMCD0**2ECD			
	,				
	without Brake	MFMCD0**2ECD			
Motor Cable	,	MFMCD0**2ECD MFMCE0**2ECD			
Motor Cable	,	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD			
Motor Cable	,	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT			
Motor Cable	,	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT			
Motor Cable	without Brake	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD			
Motor Cable	without Brake	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD			
Motor Cable	without Brake with Brake	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT			
Motor Cable	without Brake with Brake 50 Ω 25 W	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280			
External	without Brake with Brake 50 Ω 25 W 100 Ω 25 W	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281			
External Regenerative	without Brake with Brake	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283			
External Regenerative	without Brake with Brake	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCE0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284			
External Regenerative	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	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285			
External Regenerative	without Brake with Brake	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0PM20048			
External Regenerative	without Brake with Brake	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**3ECT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4283 DV0P4284 DV0P4285 DV0PM20048 DV0PM20049			
External Regenerative Resistor	without Brake with 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, DV0P221 DV0P223, DV0P224 DV0P227, DV0P228	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0P222, DV0P225, DV0PM20047			
External Regenerative Resistor Reactor	without Brake with 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, DV0P221 DV0P223, DV0P224 DV0P227, DV0P228	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047			
External Regenerative Resistor Reactor	without Brake with Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ $20 \Omega 130 W$	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047			
Motor Cable External Regenerative Resistor Reactor	without Brake with Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ $20 \Omega 130 W$ $20 $	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCA0**3ECT MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047			
External Regenerative Resistor Reactor	without Brake with Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $80 \Omega 190 W$ $20 \Omega 130 W$ $20 $	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0P225, DV0PM20047			
External Regenerative Resistor Reactor Noise Filter	without Brake with Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $120 \Omega 90 W$ 120	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**3FCT MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4281 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PM20049 DV0P222, DV0P225, DV0PM20047			
External Regenerative Resistor Reactor	without Brake with Brake $50 \Omega 25 W$ $100 \Omega 25 W$ $25 \Omega 50 W$ $30 \Omega 100 W$ $20 \Omega 130 W$ $120 \Omega 80 W$ $120 \Omega 90 W$ 120	MFMCD0**2ECD MFMCE0**2ECD MFMCF0**2ECD MFMCA0**3ECT MFMCD0**3ECT MFMCA0**2FCD MFMCA0**2FCD MFMCA0**3FCT DV0P4280 DV0P4281 DV0P4282 DV0P4283 DV0P4284 DV0P4285 DV0P4285 DV0PM20048 DV0PP222, DV0P225, DV0PM20047			

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

Note) 3 ♦: Drivers series K: A5IE 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 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.

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

	100.1/	Main	circuit	Single phase, 100 V to 120 V						
	100 V	Contro	l 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						
Inpu		circuit	E-frame to H-frame	3-phase, 200 V to 230 V +10 % 50 Hz/60 Hz						
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 circuit	D-frame to H-frame	DC 24 V ± 15 %						
		tempe	erature	Ambient temperature: 0 °C to 55 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation*1)						
Env	vironment	nent humidity		Both operating and storage : 20 % to 85 %RH (free from condensation*1)						
			tude	Lower than 1000 m						
	Vibration			5.88 m/s² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)						
Co	Control method			IGBT PWM Sinusoidal wave drive						
En	Encoder feedback			17-bit (131072 resolution) absolute encoder, 7-wire serial 20-bit (1048576 resolution) incremental encoder, 5-wire serial						
25. D	A/B phase			A/B phase, initialization signal defferential input.						
	edback scale dback		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						
Pe	Control	cianal	Input	General purpose 10 inputs The function of general-purpose input is selected by parameters.						
Parallel I	Control	sigriai	Output	General purpose 6 outputs The function of general-purpose output is selected by parameters.						
I/O ca	Analog	signal	Input	3 inputs (16Bit A/D : 1 input, 12Bit A/D : 2 inputs)						
connector	7 ti lalog t	orgi idi	Output	2 outputs (Analog monitor: 2 output)						
ctor	Pulse si	gnal	Input	2 inputs (Photo-coupler input, Line receiver input)						
	. 3.00 01	Jw.	Output	4 outputs (Line driver: 3 output、open collector: 1 output)						
	mmunicat	ion	USB	Connection with PC etc.						
	mmunicat iction	ion	RS232	1:1 communication						
			RS485	1 : n communication up to 31 axes to a host.						
Sa	fety functi	on		Used for functional safety.						
Fro	Front panel			(1) 5 keys (2) LED (6-digit) (3) Connector for monitor (Analog monitor output (2ch), Digital monitor output (1ch))						
Re	generatio	n		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.)						
Dy	namic bra	ke		A-frame to G-frame: Built-in (external resistor is also available to G-frame) H-frame: External only						
Со	ntrol mode	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 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				
Pos	Pulse	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)				
Position control	input	Electronic gear (Division/Multiplication of	1/1000 times to 1000 times				
tro		command pulse) 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.				
		us Speed Observer	Available				
	Damping Co		Available				
	2DOF setting		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.				
Speed	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)				
ed	input	Torque limit command input	Individual torque limit for both positive and negative direction is enabled.				
cor		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.				
	Soft-start/do	own function	Individual setup of acceleration and deceleration is enabled, with 0 s to 10 s/1000 r/min. Sigmoid acceleration/deceleration is also enabled.				
	Zero-speed	clamp	Speed zero clamp input is enabled.				
	Instantaneo	us Speed Observer	Available				
<u> </u>	Speed Conf	trol filter	Available				
	2DOF setting	igs	Only available at A5II Series				
히	Control inpu	ıt	Speed zero clamp, Torque command sign input etc.				
ą	Control outp	out	Speed arrival etc.				
Torque control*2	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/rated torque Default)				
ιŠ	Speed limit	function	Speed limit value with parameter is enabled.				
	Control inpu	ıt	(1) Deviation counter clear (2) Command pulse inhibition(3) Command dividing gradual increase switching (4) Damping control switching etc.				
	Control outp		Full-closed positioning complete etc.				
F		Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver : 4 Mpps				
승	Pulse	Input pulse signal format	Differential input				
Full-closed control *2	input	Electronic gear (Division/ Multiplication of command pulse)	1/1000 times to 1000 times				
<u>0</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.				
	feedback so		1/40 times to 160 times				
1	Damping Co	ontrol	Available				
			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				
0	Auto tuning		accordance with the rigidity setting.				
Com		encoder feedback pulse					
Common		encoder feedback pulse Hard error	accordance with the rigidity setting.				
Common	Division of e		accordance with the rigidity setting. Set up of any value is enabled (encoder pulses count is the max.). Over-voltage, under-voltage, over-speed, over-load,				

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

A5IIE, A5E series (Position control type)

		400.1/	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	000.1/	circuit	E-frame to F-frame	3-phase, 200 V to 230 V +10 % 50 Hz/60 Hz					
		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					
		400 V	Control circuit	D-frame to F-frame	DC 24 V ± 15 %					
Basic			tempe	erature	Ambient temperature: 0 °C to 50 °C (free from freezing) Storage temperature: -20 °C to 65 °C (Max.temperature guarantee: 80 °C for 72 hours free from condensation 1)					
sic Sp	Environment		hum	nidity	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)					
, o	Cor	ntrol meth	nod		IGBT PWM Sinusoidal wave drive					
	Enc	coder feed	dback		20-bit (1048576 resolution) incremental encoder, 5-wire serial					
	Pa	Control	oignal	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.					
		Analag	اممما	Input	none					
	connector	Analog	sigriai	Output	2 outputs (Analog monitor: 2 output)					
	ctor	D. I		Input	2 inputs (Photo-coupler input, Line receiver input)					
		Pulse si	gnaı	Output	4 outputs (Line driver: 3 output, open collector: 1 output)					
	Communication function USB			USB	Connection with PC etc.					
	Fro	nt panel			(1) 5 keys (2) LED (6-digit) (3) Analog monitor output (2ch)					
	Reg	generatio	n		A, B-frame: no built-in regenerative resistor (external resistor only) C-fram to F-frame: Built-in regenerative resistor (external resistor is also enabled.)					
	Dyr	namic bra	ke		Built-in					
	Cor	ntrol mod	е		(1) Position control (2) Internal velocity control (3) Position/ Internal velocity control					

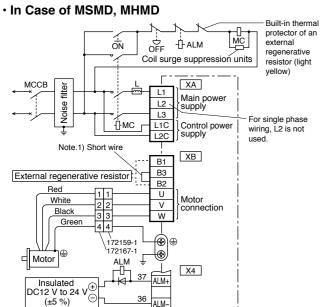
^{*1} Air containing water vapor will become saturated with water vapor as the temperature falls, causing dew.

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		Control inpu	ut	(1) Deviation counter clear (2) Command pulse inhibitation (3) Electric gear (4) Damping control switching etc.				
		Control outp	out	Positioning complete (In-position) etc.				
			Max. command pulse frequency	Exclusive interface for Photo-coupler: 500 kpps Exclusive interface for line driver: 4 Mpps				
	Position control	Pulse input	Input pulse signal format	Differential input ((1) Positive and Negative direction, (2) A and B-phase, (3) Command and direction)				
			Electronic gear (Division/ Multiplication of command pulse)	1/1000 times to 1000 times				
П			Smoothing filter	Primary delay filter or FIR type filter is adaptable to the command input				
Function		Instantaneo	us Speed Observer	Available				
ă		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.				
	င္ပ	Division of e	encoder feedback pulse	Set up of any value is enabled (encoder pulses count is the max.).				
	Common	Protective	Hard error	Over-voltage, under-voltage, over-speed, over-load, over-heat, over-current and encoder error etc.				
		function	Soft error	Excess position deviation, command pulse division error, EEPROM error etc.				
		Traceability	of alarm data	The alarm data history can be referred to.				

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

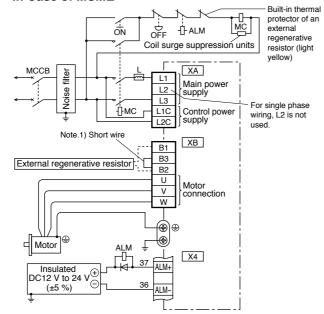
In Case of Single phase, A-frame to D-frame, 100 V / 200 V type



· In Case of MSME

and Terminal Block

Wiring to Connector, XA, XB, XC, XD



Note.1)

Frame No.	Short wire		Connection of the connector XB	
	(Accessory)		In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.
A-frame B-frame		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	Shorted between B2-B3 with an attached short wire

Note.1)

Built-in thermal

protector of an

regenerative

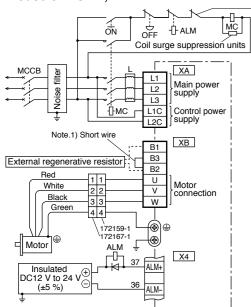
resistor (light

external

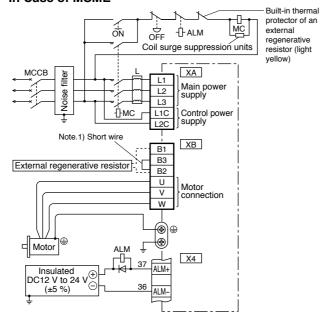
Frame	Short wire	Built-in regenerative resistor	Connection of the connector XB		
	(Accessory)		In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
A-frame B-frame		Always open between B2-B3 Connect an external regenerative resistor between B1-B2	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

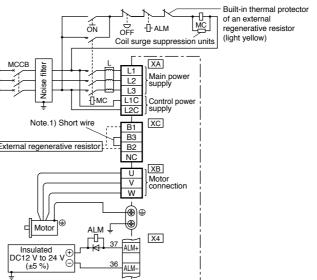
Frame	Short wire	Built-in regenerative resistor	Connection of the connector XB		
No.	(Accessory)		In case of using an external regenerative resistor.	In case of not using an external regenerative resistor.	
A-frame B-frame		without	Always open between B2-B3 Connect an external regenerative resistor between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

Note.1)

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

of an external OFF - ALM ON (light yellow) Coil surge suppression units Terminal block MCCB b Main power External regenerative resistor Note.1) Short bar Motor connection Motor X4 Insulated DC12 V to 24 V

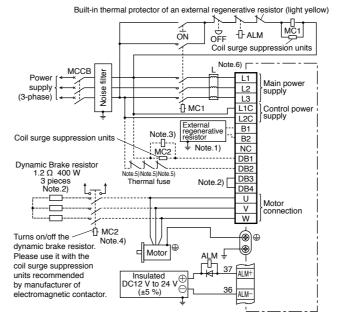
Note.1)

(±5 %)

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	

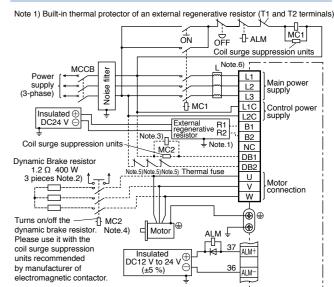
In Case of 3-phase, G-frame, 200 V type

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



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.
G-frame	without	without	Connect an external regenerative resistor between B1-B2	Open between B1-B2

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	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.
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	



Note.1) About regenerative resistor

Frame	Short bar (Accessory)	Built-in regenerative resistor	Connection of terminal block		
No.			In case of using an external regenerative resistor.	In case of not using an external regenerative resisto	
H-frame	e 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	2) About	dynamic b	orake resistor
_		Built-in	

	-	-			
F	Short bar	Built-in	Connection of terminal block		
Frame 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	

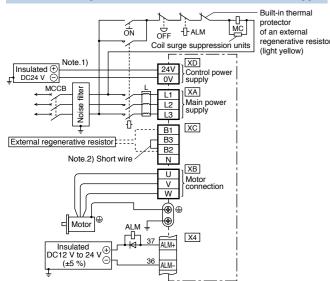
<common for G & H frame>

- 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.

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

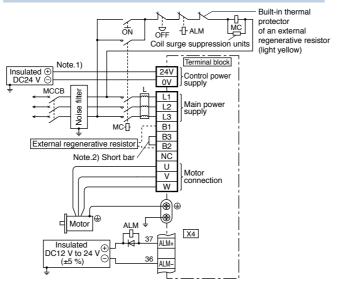
In Case of 3-phase, D-frame and E-frame, 400 V type



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

		,				
	F	Short wire (Accessory)	Built-in regenerative resistor	Connection of the connector XC		
	Frame No.			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 register between B1-B2.	Shorted between B2-B3 with an attached short wire	

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



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

	•			
Frame	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.
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

Insulated (

Motor)

In case of using

Terminal R1, R2 connect to B1, B2
Terminal T1, T2 connection as show

above Terminal 24 V,0 V connect to DC pov

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

In case of using

Connect external dynamic brake

resistor. an external dynamic brake resistor. an external dynamic brake resistor.

supply of DC24 V E terminal connect to the ground

DC24 V

Power supply (Neutral point)
The AC voltage across DB1 and DB2 must be 300 V or below.

-

Turns on/off the

3 pieces Note.2) L

dvnamic brake resistor.

Please use it with the

coil surge suppression

Note.1) About regenerative resistor

Note.2) About dynamic brake resistor

without

without

units recommended by manufacturer of Note.5)

OFF TALM

24V

W

In case of not using

In case of not using

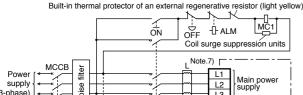
· Open between DB1-DB2

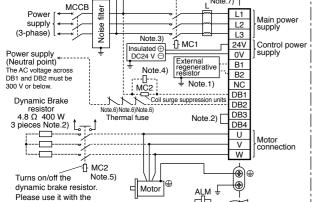
∯ MC1

tive R1

Coil surge suppression units

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





Nota 1)	Ahout	regenerative	racieta

coil surge suppression

by manufacturer of

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.			
G-frame	without	without	Connect an external regenerative resistor between B1-B2	Open between B1-B2			
Note.2	Note.2) About dynamic brake resistor						

Insulated

Frame	Short bar	Built-in dynamic brake resistor.	Connection of terminal block			
No.	(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

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.

Wiring to the Connector, X3 (Excluding A5IIE, A5E Series)

Outline Description of Safe Torque Off (STO)

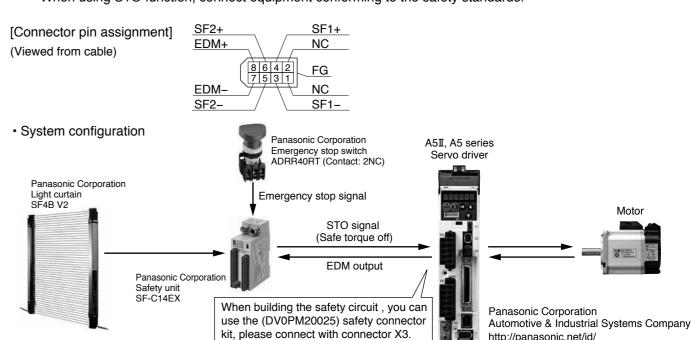
The safe torque off (STO) function is a safety function that shuts the motor current and turns off motor output torque by forcibly turning off the driving signal of the servo driver internal power transistor. For this purpose, the STO uses safety input signal and hardware (circuit).

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

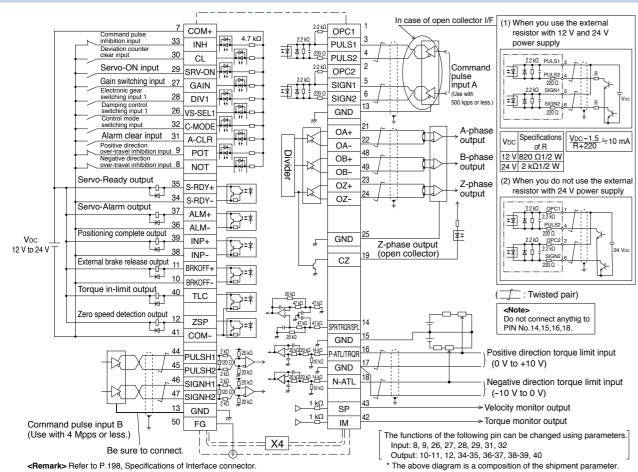
This is an alarm condition and the 7-seg LED on the front panel displays the error code number.

Safety Precautions

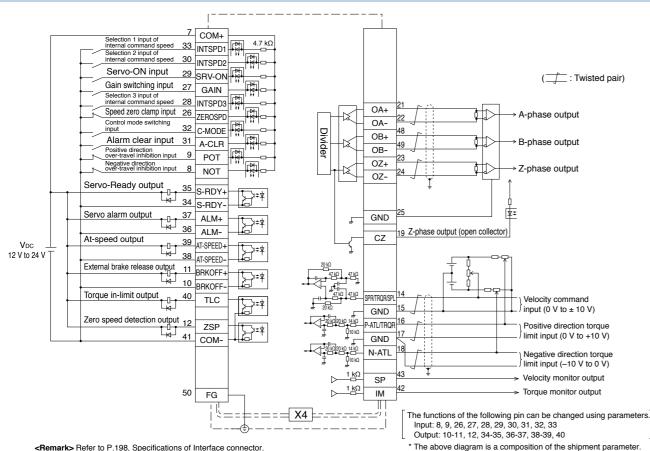
- · When using the STO function, be sure to perform equipment risk assessment to ensure that the system conforms to the safety requirements.
- · Even while the STO function is working, the following potential safety hazards exist. Check safety in risk assessment.
- · The motor may move when external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

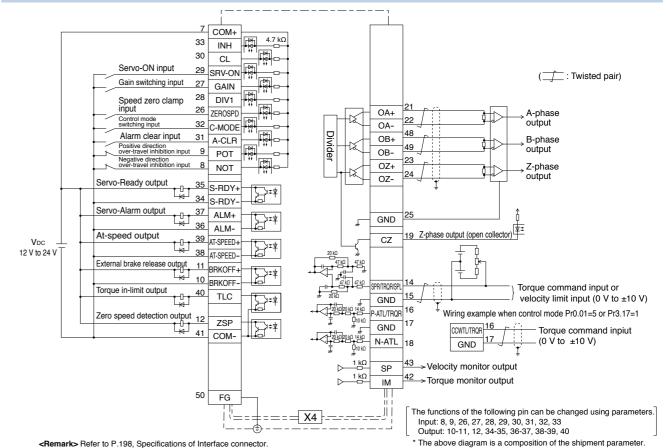


Wiring Example of Velocity Control Mode (Excluding A5IIE, A5E series)

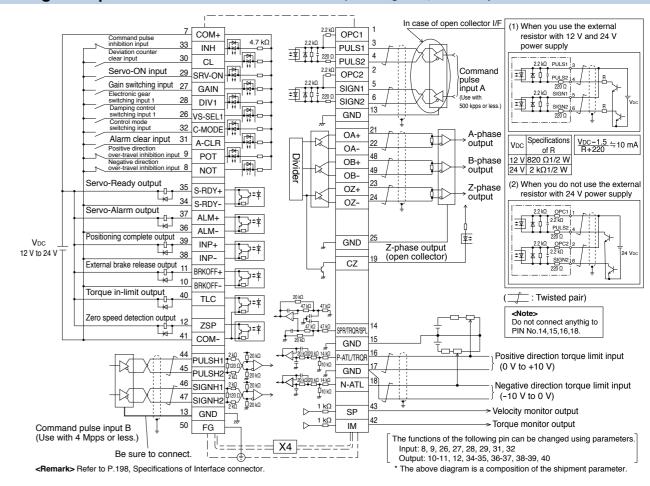


The above diagram is a composition of the shipment parameter.

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, X6

A5 Family

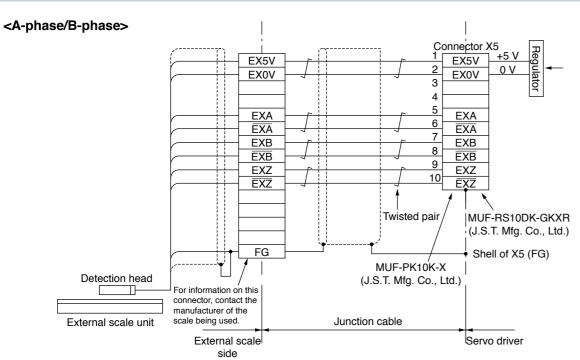
Applicable External Scale

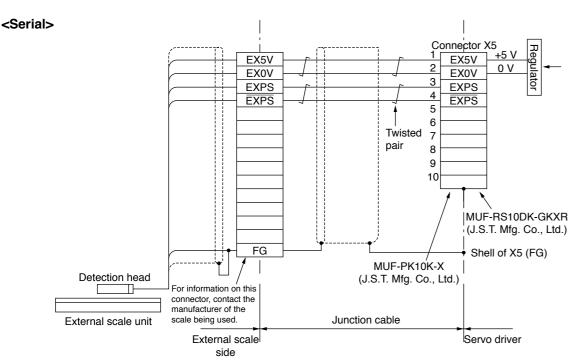
The manufacturers applicable external scales for this product are as follows.

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

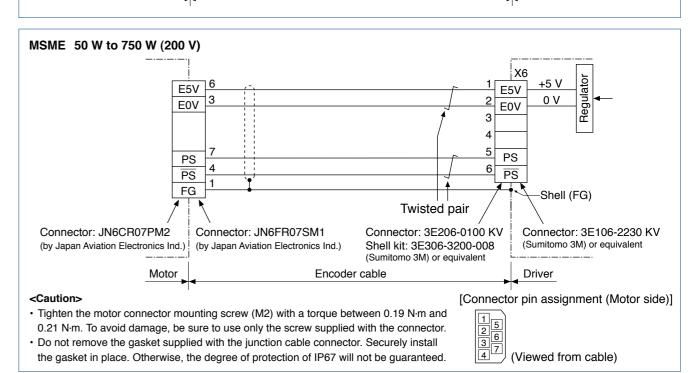
- DR. JOHANNES HEIDENHAIN GmbH
- Fagor Automation S.Coop.
- · Magnescale Co., Ltd.
- Mitutoyo Corporation
- Nidec Sankyo Corporation
- Renishaw plc
- * For the details of the external scale product, contact each company.

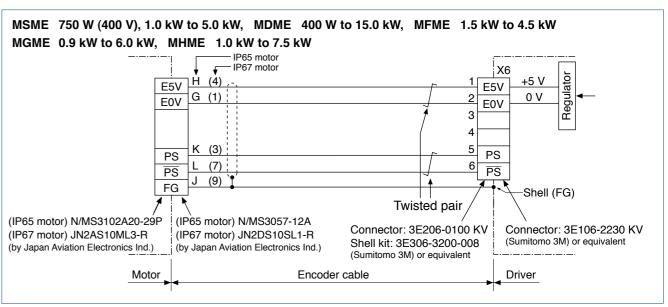
Wiring Diagram of X5





In Case of 20-bit Incremental Encoder MSMD 50 W to 750 W, MHMD 200 W to 750 W X6 White +5 V E5V E5V 2 <u>E0V</u> Black 0 V E0V Light blue PS PS Purple PS PS FG -Shell (FG) Twisted pair 172168-1 172160-1 Connector: 3E206-0100 KV Connector: 3E106-2230 KV (by Tyco Electronics) (by Tyco Electronics) (Sumitomo 3M) or equivalent Shell kit: 3E306-3200-008 Motor (Sumitomo 3M) or equivalent Motor Encoder cable Driver





[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.

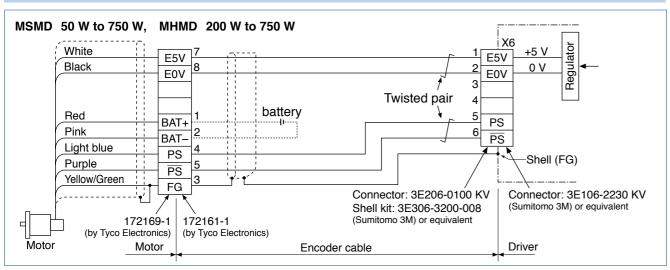
Japan Molex Inc.

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

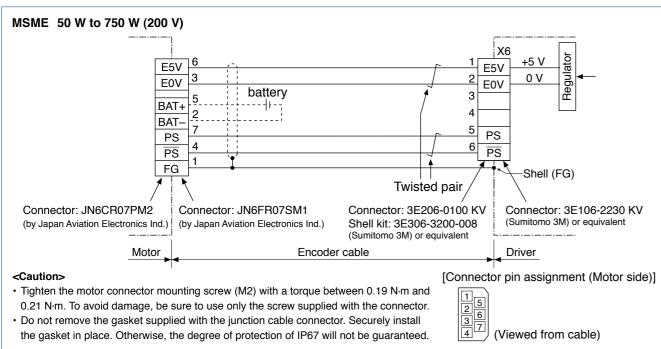
Dimensions of Driver

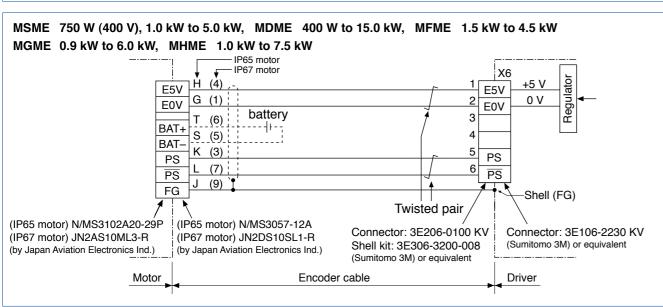
A5 Family

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



Wiring to the Connector, X6



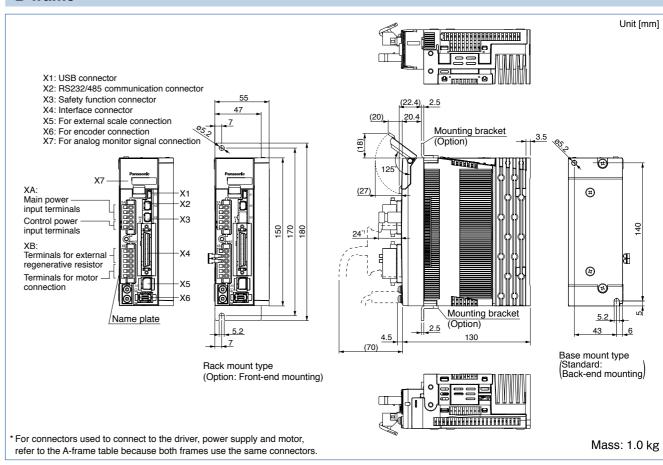


[Connector pin assignment] Refer to P.186, P.187 "Specifications of Motor connector".

A-frame Unit [mm] X1: USB connector X2: RS232/485 communication connector X3: Safety function connector X4: Interface connector X5: For external scale connection X6: For encoder connection Mounting bracket X7: For analog monitor signal connection (Option) **₹** 🚱 XA: Main power input terminals -X2 Control power -X3 Terminals for external Terminals for motor connection -X5 **¬**⊚-Mounting bracket 5.2 Name plate (Option) 5.2 _28 __6 Rack mount type Base mount type (Option: Front-end mounting) (Standard: Back-end mounting) Connector of driver side J.S.T. Mfg. Co., Ltd. J.S.T. Mfg. Co., Ltd. Connector XA S05B-F32SK-GGXR Connector XB S06B-F32SK-GGXR Connector X1 UB-M5BR-DMP14-4S (or equin ent) J.S.T. Mfg. Co., Ltd. 1-2040537-1 (or equivalent) Connector X3 2040537-1 (or equivalent Tyco Electronics Mass: 0.8 kg Connector X4 10250-52A2PF (or equivalent Sumitomo 3M J.S.T. Mfg. Co., Ltd. Connector of power and motor side (Attached to the driver) | A5II.A5 | A5IIE.A5E Connector X5 MUF-RS10DK-GKXR (or equivalent) Connector XA 05JFAT-SAXGF J.S.T. Mfg. Co., Ltd. Connector X6 3E106-2230 KV (or equivalent) Sumitomo 3M

B-frame

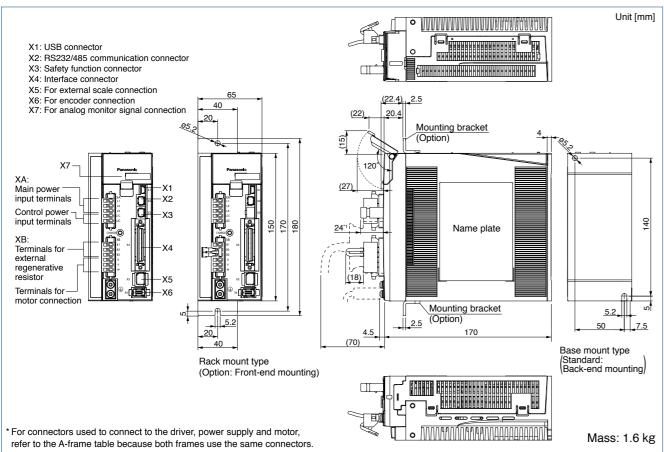
Connector X7 530140610 (or equivalent



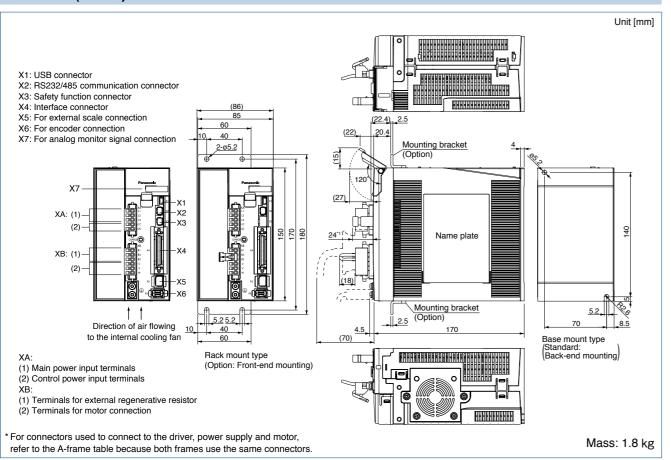
C-frame

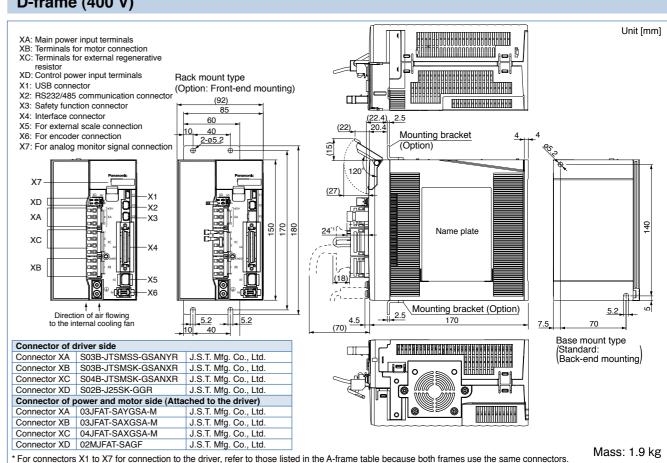
• The size of A5II, A5 series and A5IIE, A5E series is same.

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

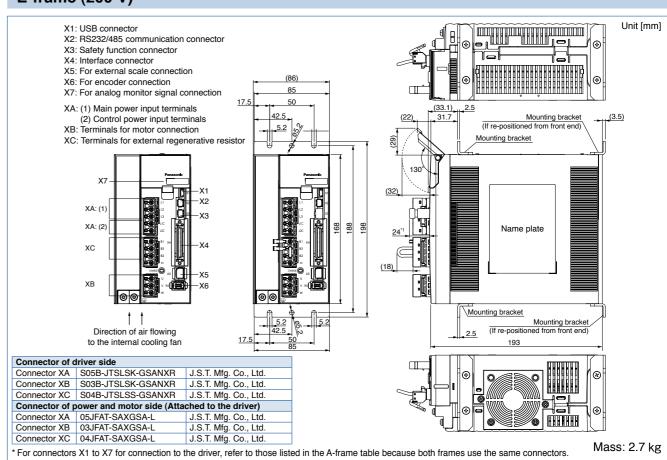


D-frame (200 V)



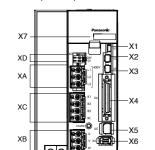


E-frame (200 V)

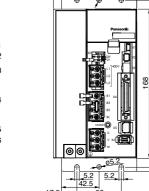


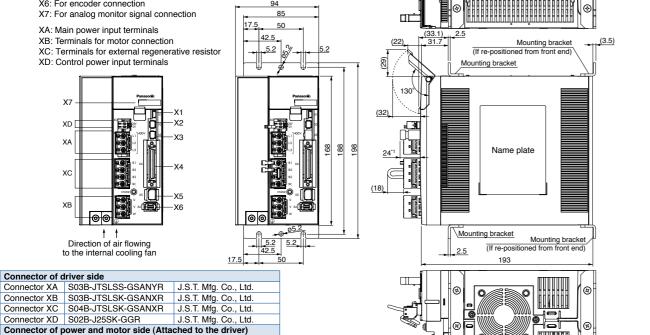
E-frame (400 V)

- 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





Mass: 2.7 kg

• 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.

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

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

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

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

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

F-frame (200 V/400 V)

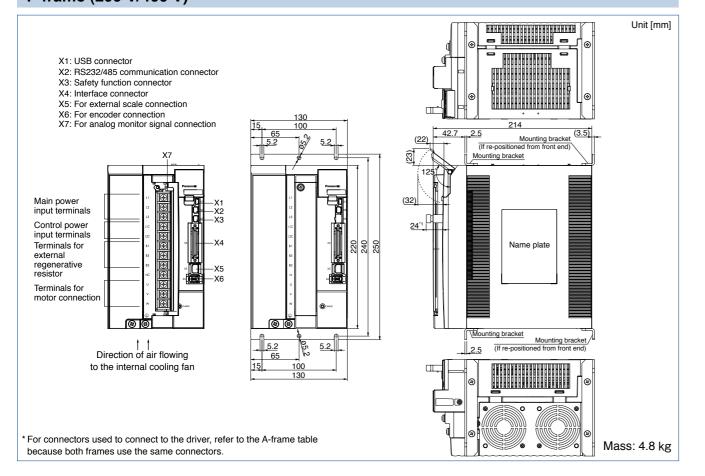
Connector XD S02B-J25SK-GGR

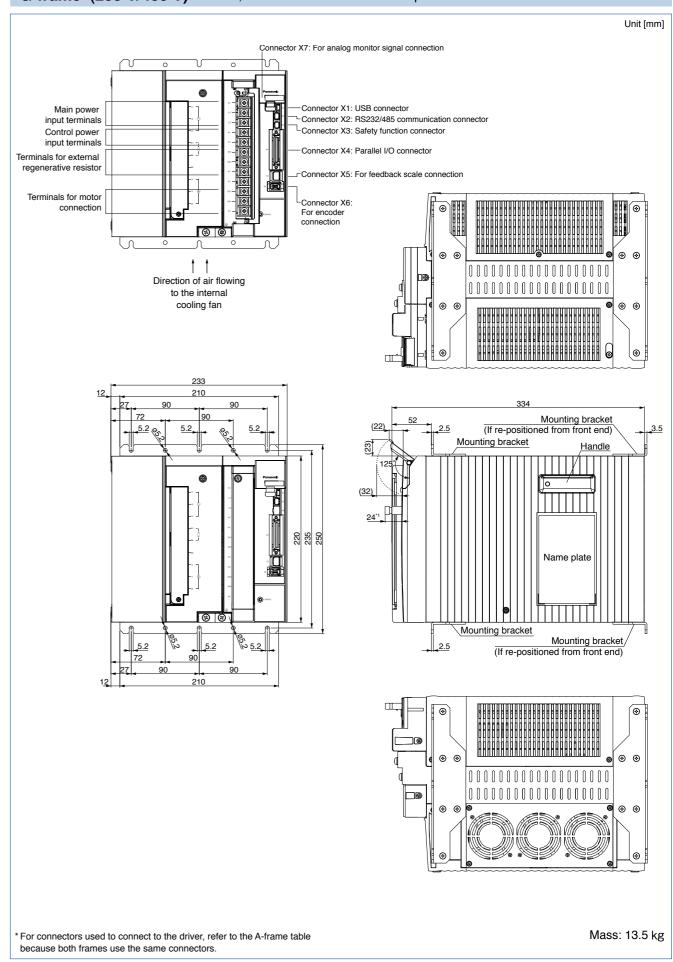
Connector XA 03JFAT-SAYGSA-L

Connector XB 03JFAT-SAXGSA-L

Connector XC 04JFAT-SAXGSA-L

Connector XD 02MJFAT-SAGF





H-frame (200 V/400 V)

Features/Lineup

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......

MSME (200 V)

MDME (200 V) 1.0 kW to 15.0 kW.

MFME (200 V) 1.5 kW to 4.5 kW

MGME (200 V) 0.9 kW to 6.0 kW

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

dimensions..

1.0 kW to 7.5 kW

Motors with Gear Reducer

Type and Specifications...... P.141

Model No. designation...... P.142 The combination of the driver

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

Environmental Conditions.... P.182

Notes on [Motor specification]

and the motor.....

Dimensions of Motor......

Motor Specification

Permissible Load at

Built-in Holding Brake

Description

Output Shaft...

page.

750 W to 5.0 kW.

1.0 kW to 7.5 kW

1.0 kW to 5.0 kW.

50 W to 750 W

Motor Contents

. P.74

. P.80

. P.89

. P.92

. P.97

P.104

.. P.130

P.137

.P.144

P.182

Features

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

Motor Lineup

Small capacity



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

MDME

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

(from 7.5 kW) Rated output IP65: 400 W to 5.0 kW IP67: 400 W to 15.0 kW Enclosure: IP65, IP67

: 1500 r/min



MFME (Flat type)* Middle inertia

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



(Low speed/ High torque type) Middle inertia

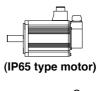
Max. speed: 2000 r/min Rated speed: 1000 r/min Rated output IP65: 0.9 kW to 3.0 kW IP67: 0.9 kW to 6.0 kW Enclosure: IP65, IP67



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

: 1500 r/min(7.5 kW) Rated output IP65: 1.0 kW to 5.0 kW IP67: 1.0 kW to 7.5 kW Enclosure: IP65, IP67

Middle capacity motor has the IP67 type.



Compact

(IP67 type motor) Part No.: **M ME****** *

C: IP65 motor 1: IP67 motor

X3: Safety functi	ake resister
261	21" 270 200 30.5
Name plate Name plate	(32)
↑ ↑ Direction of air flowing	266 4 200 30.5 Mount Base mount type
to the internal cooling fan	(Back-end mounting)

A5IE, A5E series is out of the lineup.

For analog monitor signal connection

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

Unit [mm]

Mass: 21.0 kg

For connectors used to connect to the driver, refer to the A-frame table

because both frames use the same connectors

Specifications

			AC1	00 V		
Motor model	IP65		MSMD5AZG1□	MSMD5AZS1		
Wiotor model		IP67		-	_	
Ammliaabla	Model	A5II, A5	series	MAD	T1105	
Applicable driver *2	No.	A5IIE, A	5E series	MAD ⊘T1105E	_	
unver	Fr	ame sym	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	orake	Without option		No limit Note)2		
frequency (times/	min) Note)1	n) 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 brake		0.027		
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 sing	le turn	1048576	131072	

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

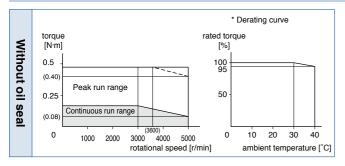
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

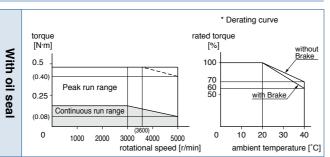
• Permissible load (For details, refer to P.183)

. .	Radial load P-direction (N)	147
During assembly	Thrust load A-direction (N)	88
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.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

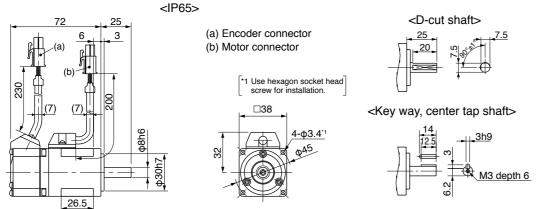
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

Mass: 0.32 kg <Without Brake>



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

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

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

Specifications

				AC200 V			
		IP65			MSMD5AZG1□	MSMD5AZS1	
Motor mod	*1		IP67		-	_	
A		Model	A5 I I, A5	series	MAD	T1505	
Applicable driver	*2	No.	A5IIE, A	5E series	MAD ⊘T1505E	-	
unver		Fr	ame sym	bol	A-fr	ame	
Power sup	ply c	apacit	y	(kVA)	0	.5	
Rated outp	ut			(W)	5	0	
Rated torq	ue			(N·m)	0.	16	
Momentary	/ Ma	x. peal	k torque	(N·m)	0.48		
Rated curr	ent		(.	A(rms))	1.1		
Max. curre	nt		((A(o-p))	4.7		
Regenerati	ve br	ake	Without	option	n No limit Note)2		
frequency (ti	mes/m	in) Note)1	DV0P4281		No limit Note)2		
Rated rota	tiona	l spee	d	(r/min)	3000		
Max. rotati	onal	speed		(r/min)	5000		
Moment of	iner	tia	Without	brake	0.025		
of rotor (×1	0 ⁻⁴ k	(g·m²)	With brake		0.027		
Recommer ratio of the				tia Note)3	30 times or less		
Rotary end	odei	speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Re	solutio	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.

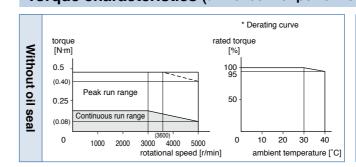
0.29 or more
35 or less
20 or less
0.3
1 or more
24±1.2

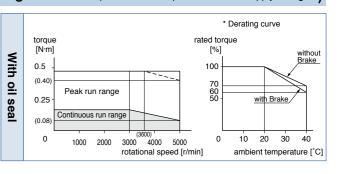
• Permissible load (For details, refer to P.183)

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

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

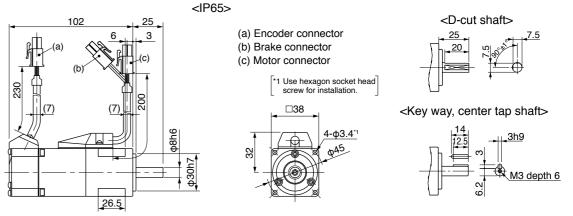
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





Dimensions

Mass: 0.53 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.

Motor Specifications

Specifications

			AC100 V			
Mataumaadal		IP65		MSMD011G1	MSMD011S1	
Motor model		IP67		-	-	
Ammliaalala	Model	A5II, A5	series	MAD	T1107	
Applicable driver *2	No.	A5IIE, A	5E series	MAD ⊘T1107E	_	
unven	Fr	ame sym	bol	A-fra	ame	
Power supply	capacit	y	(kVA)	0	4	
Rated output			(W)	10	00	
Rated torque			(N·m)	0.:	32	
Momentary M	ax. peal	k torque	(N·m)	0.95		
Rated current		(A(rms))	1.7		
Max. current		((A(o-p))	7.2		
Regenerative I	orake	Without option		No limit Note)2		
frequency (times/	min) Note)1	ote)1 DV0P4280		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	ıl speed		(r/min)	5000		
Moment of ine	ertia	Without brake		0.051		
of rotor (×10 ⁻⁴	kg·m²)	With b	orake	0.054		
Recommende ratio of the loa		0	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.

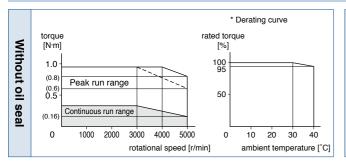
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

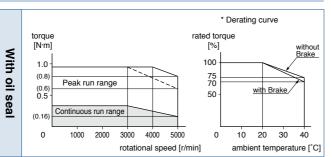
Permissible load (For details, refer to P.183)

	Radial load P-direction (N)	147
During assembly	Thrust load A-direction (N)	88
document	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 AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

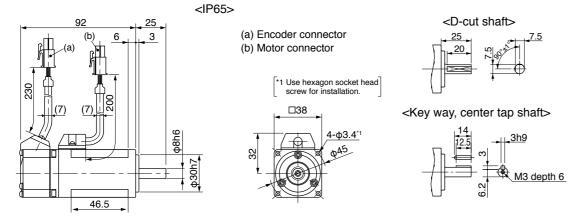




Dimensions

<Cautions>

Mass: 0.47 kg <Without Brake>



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

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

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

Specifications

			AC2	00 V	
Motor mada	- I	IP65		MSMD012G1□	MSMD012S1
Motor mode	∂ I ⊧1	IP67		-	-
A	Model	A5II, A5	series	MAD	T1505
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1505E	_
unvoi	F	rame sym	bol	A-fr	ame
Power supp	oly capacit	ty	(kVA)	0.	.5
Rated outpo	ut		(W)	10	00
Rated torqu	ie		(N·m)	0.:	32
Momentary	Max. pea	k torque	(N·m)	0.95	
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 (tim	nes/min) Note)1	DV0P4281		No limit Note)2	
Rated rotati	ional spee	ed	(r/min)	3000	
Max. rotation	nal speed	i	(r/min)	5000	
Moment of	inertia	Without	t brake	0.051	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	0.054	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per			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.

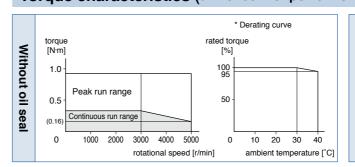
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

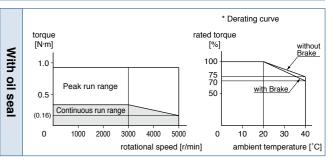
• Permissible load (For details, refer to P.183)

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

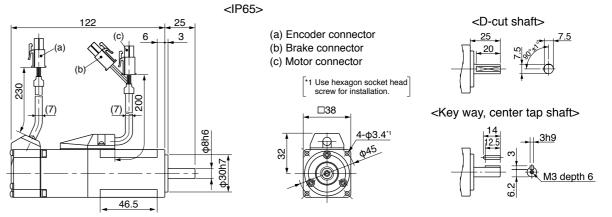
Torque characteristics (at AC200 V of power voltage)





Dimensions

<With Brake> Mass: 0.68 kg



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

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

Specifications

			AC1	00 V	
IP65			MSMD021G1□	MSMD021S1	
Motor model *1		IP67		-	_
A south a shift	Model	A5II, A5	series	MBD<	T2110
Applicable driver *2	No.	A5IIE, A5	E series	MBD ⊘T2110E	_
divoi	Fr	ame syml	bol	B-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))	2.5	
Max. current (A(o-p))			10.6		
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4	4283	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 (×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 encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per singl	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.

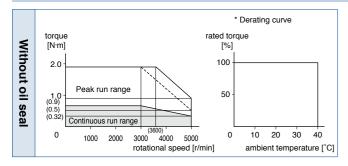
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

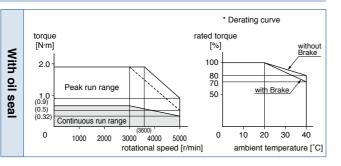
Permissible load (For details, refer to P.183)

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

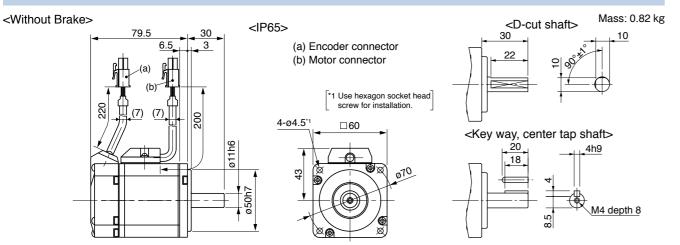
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

[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 200 W [Low inertia, Small capacity]

Specifications

					AC2	00 V
Makananadal		IP65		MSMD022G1□	MSMD022S1	
Motor mod	ei *1		IP67		-	-
Ammiinahin	1	Model	A5 I I, A5	series	MAD	T1507
Applicable driver	*2	No.	A5IIE, A	5E series	MAD ⊘T1507E	_
diivei		Fr	ame sym	bol	A-fr	ame
Power supp	ply c	apacity	y	(kVA)	0	.5
Rated outp	ut			(W)	20	00
Rated torqu	ue			(N·m)	0.	64
Momentary	/ Max	x. peal	k torque	(N·m)	1.91	
Rated curre	ent		(A(rms))	1.6	
Max. curre	nt			(A(o-p))	6.9	
Regenerativ	ve br	ake	Without	option	No limit Note)2	
frequency (tir	mes/mi	n) Note)1	DV0P	4283	No limit Note)2	
Rated rotat	tiona	l spee	d	(r/min)	3000	
Max. rotation	onal	speed		(r/min)	5000	
Moment of	inert	tia	Without	t brake	0.14	
of rotor (×1	0 ⁻⁴ k	g·m²)	With b	orake	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		
Resolution			n per sing	le turn	1048576	131072

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

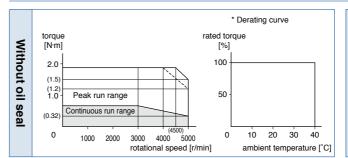
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

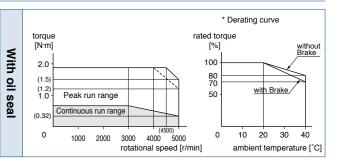
• Permissible load (For details, refer to P.183)

During assembly	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.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

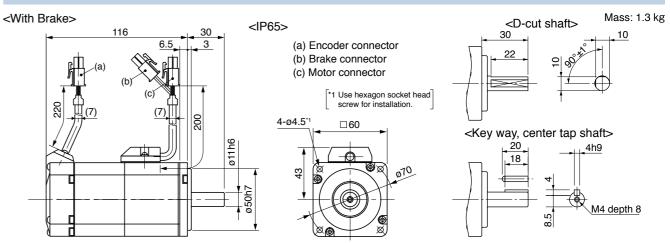
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





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	-	-		
Annliachla	Model	A5II, A5 series	MCD<	T3120		
Applicable driver *2	No.	A5IE, A5E series	MCD⇔T3120E	-		
dilvoi	Fi	rame symbol	C-fr	ame		
Power supply	capacit	y (kVA)	0.	.9		
Rated output		(W)	40	00		
Rated torque		(N·m)	1.	.3		
Momentary M	lax. pea	k torque (N·m)	3.8			
Rated curren	t	(A(rms))	4.6			
Max. current		(A(o-p))	19.5			
Regenerative	brake	Without option	No limi	t Note)2		
frequency (times	/min) Note)1	DV0P4282	No limit Note)2			
Rated rotation	nal spee	d (r/min)	3000			
Max. rotation	al speed	(r/min)	5000			
Moment of in	ertia	Without brake	0.26			
of rotor (×10	4 kg·m²)	With brake	0.28			
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encod	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
F	Resolution per single turn			131072		

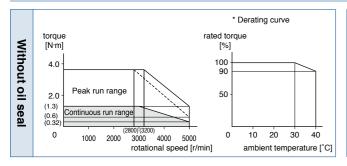
• Brake specifications (For details, refer to P.183) This brake will be released when it is energized. Do not use this for braking the motor in motion.

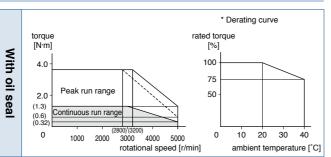
Permissible load (For details, refer to P.183)

	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.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

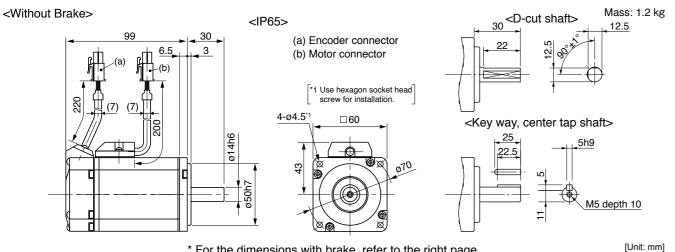
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)





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

			AC200 V		
		IP65		MSMD042G1□	MSMD042S1
Motor mod	*1	IP67		-	-
A I' l. I .	Mod	el A5II, A5	series	MBD ♦ T2510	
Applicable driver	*2 No.	A5IIE, A	A5IIE, A5E series MBD \(\rightarrow T2510E \)		-
unven		Frame sym	ıbol	B-frame	
Power sup	ply capa	city	(kVA)	0	.9
Rated outp	out		(W)	40	00
Rated torq	ue		(N·m)	1.	.3
Momentary	Max. pe	ak torque	(N·m)	3.8	
Rated curr	ent	((A(rms))	2.6	
Max. current (A(o-p))			11.0		
Regenerati	ve brake	Without	option	No limit Note)2	
frequency (ti	mes/min) Not	DV0P	4283	No limit Note)2	
Rated rota	tional spe	eed	(r/min)	3000	
Max. rotati	onal spe	ed	(r/min)	5000	
Moment of	inertia	Without	t brake	0.26	
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per sir		ion per sind	ale turn	1048576	131072

200 V MSMD 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.

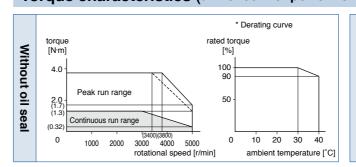
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

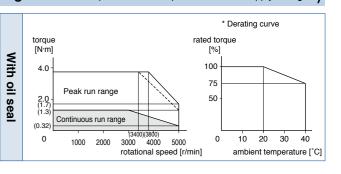
• Permissible load (For details, refer to P.183)

	During assembly 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

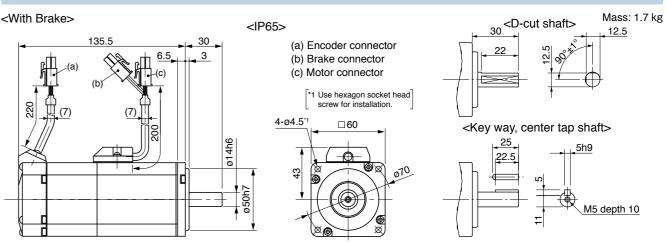
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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



* 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.

Specifications

			AC200 V	
Mataria		IP65	MSMD082G1□	MSMD082S1□
Motor model *1		IP67	-	-
A	Model	A5II, A5 series	MCD<	T3520
Applicable *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_
unver	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	1	.3
Rated output		(W)	7!	50
Rated torque		(N·m)	2.4	
Momentary M	ax. peal	k torque (N·m)	7.1	
Rated current		(A(rms))	4.0	
Max. current (A(o-p))		17.0		
Regenerative I	orake	Without option	No limit Note)2	
frequency (times	min) Note)1	DV0P4283	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	al speed	(r/min)	4500	
Moment of ine	ertia	Without brake	0.87	
of rotor (×10 ⁻²	kg·m²)	With brake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
Resolution per single turn		1048576	131072	

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

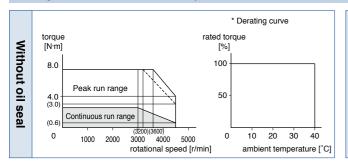
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

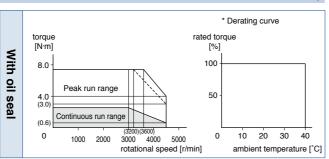
• Permissible load (For details, refer to P.183)

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

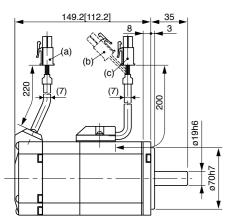
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

<IP65>

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

With brake/ 3.1 kg <D-cut shaft> <Key way, center tap shaft>

Mass: Without brake/ 2.3 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.

MEMO

Specifications

			AC100 V		
Matau maadal	IP65		MHMD021G1□	MHMD021S1	
Motor model *1		IP67		-	-
Amaliandala	Model	A5II, A5 serie	s	MBD<	T2110
Applicable driver *2	No.	A5IIE, A5E s	eries	MBD ⊘T2110E	_
divei	Fr	ame symbol		B-fra	ame
Power supply	capacit	y (k	VA)	0	.5
Rated output			(W)	20	00
Rated torque		(N	l·m)	0.64	
Momentary M	ax. peal	k torque (N	l·m)	1.91	
Rated current (A(rms))			2.5		
Max. current (A(o-p))			10.6		
Regenerative brake Without option		No limit Note)2			
frequency (times/	min) Note)1	DV0P4283		No limit Note)2	
Rated rotational speed (r/min)		3000			
Max. rotationa	l speed	(r/n	nin)	5000	
Moment of ine	rtia	Without bra	ke	0.42	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	Э	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		ote)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per single tu	rn	1048576	131072

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

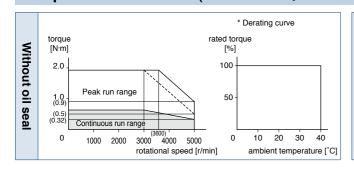
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

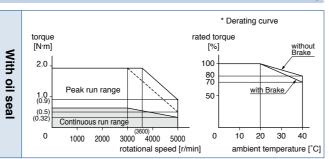
Permissible load (For details, refer to P.183)

	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

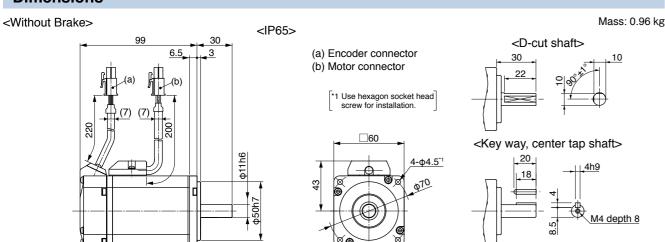
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

[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			
		IP65		MHMD022G1□	MHMD022S1	
Motor mode *	•	IP67		-	-	
A	Model	A5II, A5	series	MAD	T1507	
Applicable driver *	No.	A5IIE, A5E series		MAD ⊘T1507E	_	
unvoi	Fi	rame sym	bol	A-fra	ame	
Power supp	ly capacit	у	(kVA)	0	.5	
Rated outpu	ıt		(W)	20	00	
Rated torqu	е		(N·m)	0.0	64	
Momentary	Max. pea	k torque	(N·m)	1.91		
Rated curre	nt	(A(rms))	1.6		
Max. curren	t		(A(o-p))	6	.9	
Regenerative	e brake	Without option		No limit Note)2		
frequency (tim	es/min) Note)1	DV0P4283		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	30	3000	
Max. rotatio	nal speed		(r/min)	5000		
Moment of i	nertia	Without brake		0.42		
of rotor (×10) ⁻⁴ kg·m²)	With brake		0.45		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single turn			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.

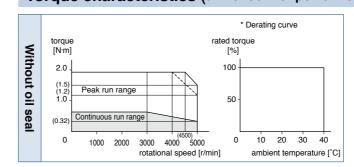
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

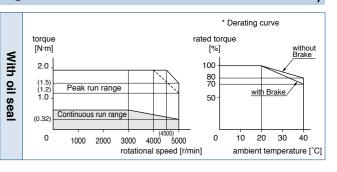
• Permissible load (For details, refer to P.183)

	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

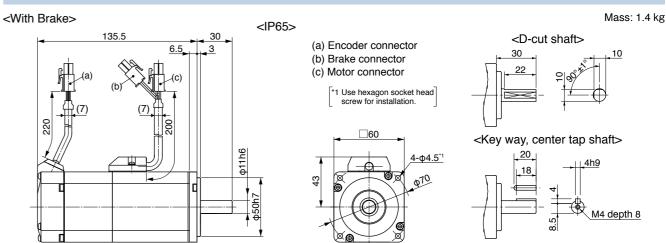
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable 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			
IP65			MHMD041G1□	MHMD041S1		
Motor model *1		IP67		-	-	
A	Model	A5II, A5	series	MCD<	T3120	
Applicable 42	No.	A5IIE, A5E series		MCD ♦T3120E	-	
unvei	Fr	ame symb	ool	C-fra	ame	
Power supply	capacit	у	(kVA)	0.	9	
Rated output			(W)	40	00	
Rated torque			(N·m)	1.	3	
Momentary Ma	ax. peal	k torque	(N·m)	3.8		
Rated current		(/	A(rms))	4.6		
Max. current		(.	A(o-p))	19.5		
Regenerative b	rake	Without	option	No limi	No limit Note)2	
frequency (times/r	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 (×10 ⁻⁴	kg·m²)	With b	rake	0.70		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
R	esolutio	n per singl	e turn	1048576	131072	

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

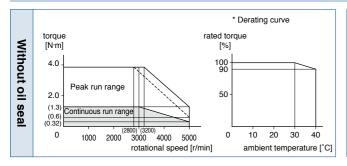
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

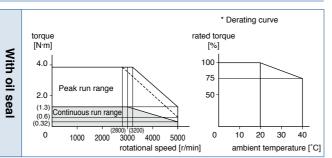
• Permissible load (For details, refer to P.183)

	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

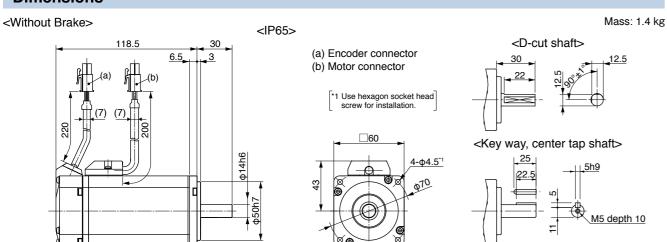
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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



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

Motor Specifications

Specifications

			AC2	AC200 V		
		IP65		MHMD042G1□	MHMD042S1	
Motor mode	:1	IP67		-	-	
A	Model	A5II, A5	series	МВО	T2510	
Applicable driver *	No.	A5IIE, A5E series		MBD ⊘T2510E	-	
unven	Fı	rame sym	bol	B-fra	ame	
Power supp	ly capacit	у	(kVA)	0	.9	
Rated outpu	ut		(W)	40	00	
Rated torqu	е		(N·m)	1.	3	
Momentary	Max. pea	k torque	(N·m)	3.8		
Rated curre	nt	(A(rms))	2.6		
Max. curren	t		(A(o-p))	11	.0	
Regenerative	e brake	Without option		No limi	t Note)2	
frequency (tim	es/min) Note)1	DV0P4283		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	3000		
Max. rotatio	nal speed		(r/min)	5000		
Moment of i	nertia	Without brake		0.67		
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		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			
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.

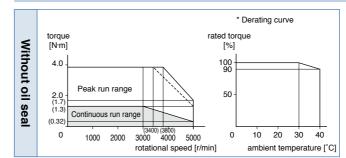
1.27 or more
50 or less
15 or less
0.36
1 or more
24±1.2

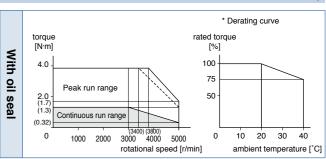
• Permissible load (For details, refer to P.183)

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

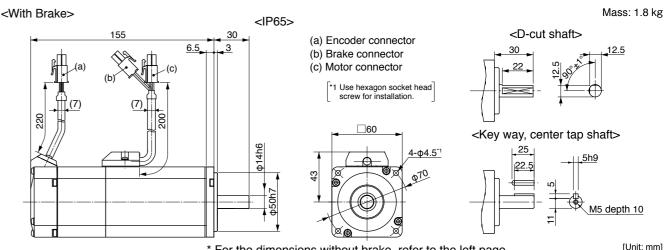
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

<Cautions> Reduce the moment of inertia ratio if high speed response operation is required. Dimensions are subject to change without notice. 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	AC200 V		
IP65		IP65	MHMD082G1	MHMD082S1		
Motor model		IP67	-	_		
	Model	A5II, A5 series	MCD<	T3520		
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_		
unver	Fr	ame symbol	C-fr	ame		
Power supply	capacit	y (kVA)	1	.3		
Rated output		(W)	7!	50		
Rated torque		(N·m)	2	.4		
Momentary Ma	ax. peal	k torque (N·m)	7.1			
Rated current		(A(rms))	4.0			
Max. current		(A(o-p))	17	17.0		
Regenerative b	orake	Without option	No lim	it Note)2		
frequency (times/	min) Note)1	DV0P4283	No limit Note)2			
Rated rotation	al spee	d (r/min)	3000			
Max. rotationa	ıl speed	(r/min)	4500			
Moment of ine	ertia	Without brake	1.51			
of rotor ($\times 10^{-4}$	kg·m²)	With brake	1.61			
Recommended moment of inertia ratio of the load and the rotor Note)3			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.

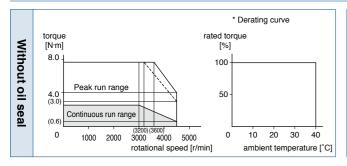
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

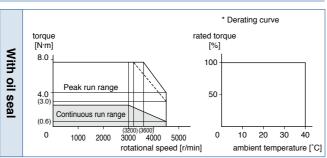
• Permissible load (For details, refer to P.183)

	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

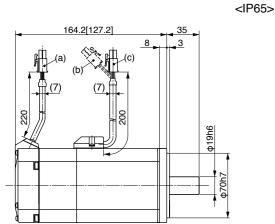
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

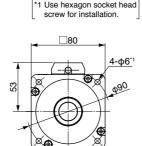


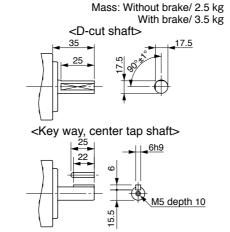


Dimensions



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





* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

MEMO

A5 Family

Specifications

			AC1	00 V
Motor model		-	-	
*1		IP67	MSME5AZG1□	MSME5AZS1
A II I- I -	Model	A5II, A5 series	MAD	T1105
Applicable *2	No.	A5IIE, A5E series	MAD ⊘T1105E	-
unver	Fr	ame symbol	A-fra	ame
Power supply of	capacit	y (kVA)	0	.4
Rated output		(W)	5	0
Rated torque		(N·m)	0.	16
Momentary Ma	ıx. peal	torque (N·m)	0.48	
Rated current (A(rms))		1.1		
Max. current (A(o-p))		4.7		
Regenerative brake Without option		No limi	t Note)2	
frequency (times/m	nin) Note)1	DV0P4280	No limit Note)2	
Rated rotationa	al spee	d (r/min)	3000	
Max. rotational	speed	(r/min)	6000	
Moment of iner	rtia	Without brake	0.025	
of rotor (×10 ⁻⁴ kg·m²) With brake		With brake	0.027	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
Rotary encoder specifications Note)5		fications 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.)

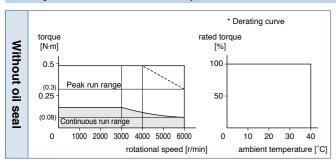
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

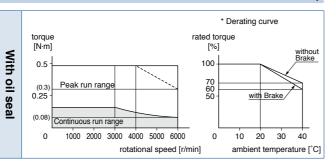
During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
During	Radial load P-direction (N)	68.6
operation	Thrust load A, B-direction (N)	58.8

- 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.>)



<Cautions>

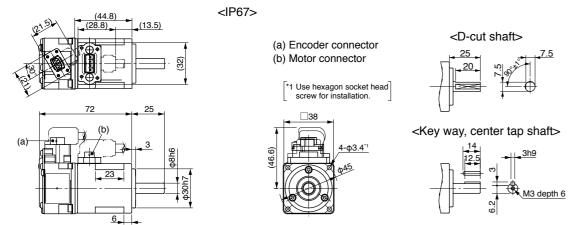


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

· 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.

Dimensions are subject to change without notice. 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
Mataumada		IP65		-	-
Motor mode	}I ⊧1	IP67		MSME5AZG1	MSME5AZS1
	Mode	A5II, A5	series	MAD	T1505
Applicable driver *	No.	A5IIE, A	5E series	MAD ⊘T1505E	-
ulivei	F	rame sym	ibol	A-fr	ame
Power supp	ly capaci	ty	(kVA)	0	.5
Rated outpo	ut		(W)	5	0
Rated torqu	ie		(N·m)	0.	16
Momentary	Max. pea	k 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 (tim	nes/min) Note)	DV0P4280		No limit Note)2	
Rated rotational spee		ed	(r/min)	3000	
Max. rotation	nal spee	d	(r/min)	6000	
Moment of	inertia	Without	t brake	0.0	25
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	0.0	27
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications N		Note)5	20-bit Incremental	17-bit Absolute	
		on per sinc	ıle turn	1048576	131072

200 V MSME 50 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.

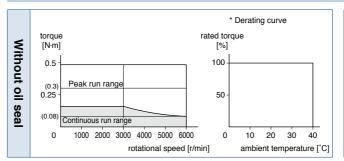
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

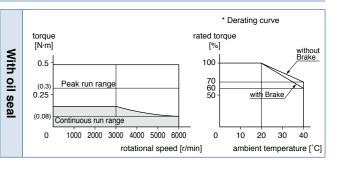
• Permissible load (For details, refer to P.183)

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

Torque characteristics (at AC200V of power voltage)





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

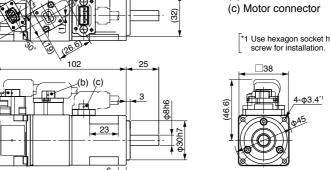
· Motor cables for opposite to output shaft cannot be used with 50 W motor.

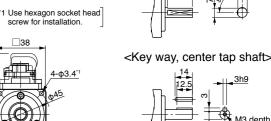
(a) Encoder connector
(b) Brake connector
(c) Motor connector

25

25

7.5





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

[Unit: mm]

Mass: 0.51 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.

A5 Family

Motor Specifications

Specifications

			AC1	00 V
IP65		-	-	
Motor model *1		IP67	MSME011G1□	MSME011S1
Amaliaabla	Model	A5II, A5 series	MAD	T1107
Applicable driver *2	No.	A5IIE, A5E series	MAD ⊘T1107E	-
unver	Fr	ame symbol	A-fr	ame
Power supply	capacit	y (kVA)	0	.4
Rated output		(W)	1(00
Rated torque		(N·m)	0.	32
Momentary Ma	ax. peal	k torque (N·m)	0.95	
Rated current (A(rms))		1.6		
Max. current (A(o-p))		6.9		
Regenerative brake Without option		No lim	t Note)2	
frequency (times/r	frequency (times/min) Note)1 DV0P4280		No limit Note)2	
Rated rotation	Rated rotational speed (r/min)		3000	
Max. rotationa	l speed	(r/min)	6000	
Moment of ine	Moment of inertia Without brake		0.051	
of rotor ($\times 10^{-4}$	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 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.

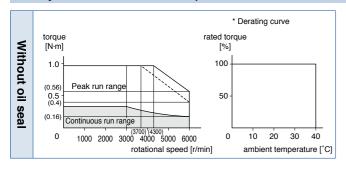
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

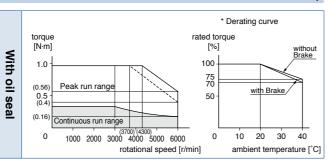
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	Thrust load B-direction (N)	117.6
During	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 AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



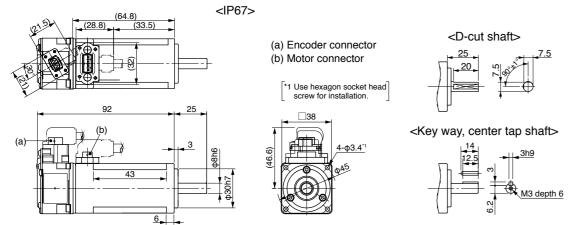


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

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

Mass: 0.46 kg

[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 100 W [Low inertia, Small capacity]

Specifications

			AC2	00 V	
Motor model		IP65		-	-
*1		IP67		MSME012G1□	MSME012S1
A 1: 1- 1 -	Model	A5 I I, A5	series	MAD	T1505
Applicable driver *2	No.	A5IIE, A	5E series	MAD ⊘T1505E	_
divei	Fi	rame sym	bol	A-fr	ame
Power supply	y capacit	у	(kVA)	0.	.5
Rated output	t		(W)	10	00
Rated torque)		(N·m)	0.3	32
Momentary M	Иах. pea	k torque	(N·m)	0.95	
Rated currer	nt	(A(rms))	1.1	
Max. current (A(o-p))			4.	.7	
Regenerative	brake	Without	Vithout option No limit Note)2		t Note)2
frequency (time	s/min) Note)1	DV0P	4280	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotation	al speed		(r/min)	6000	
Moment of in	ertia	Without	brake	0.051	
of rotor (×10 ⁻⁴ kg·m²) With brake		rake	0.054		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			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.

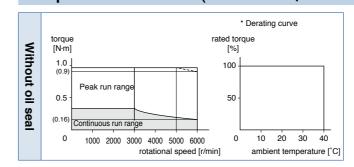
Static friction torque (N·m)	0.29 or more
Engaging time (ms)	35 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.3
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

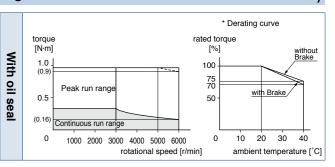
• Permissible load (For details, refer to P.183)

During assembly	Radial load P-direction (N)	147
	Thrust load A-direction (N)	88
	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 AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

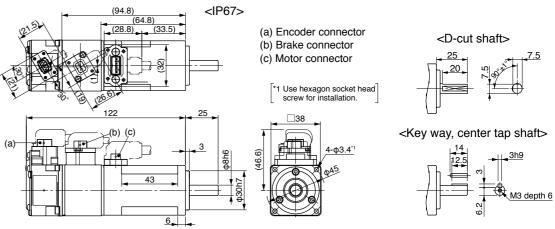




Dimensions < In Case of With Brake, Cable direction to output shaft.>

· 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.

Specifications

			AC100 V	
Motor model	IP65		-	-
*1	IP67		MSME021G1□	MSME021S1
Applicable driver *2	Model	A5II, A5 series	MBD ⊘ T2110	
	No.	A5IIE, A5E series	MBD⇔T2110E	-
	Frame symbol		B-frame	
Power supply	er supply capacity (kVA) 0.5		.5	
Rated output (W)			200	
Rated torque (N·m)			0.64	
Momentary Max. peak torque (N·m)			1.91	
Rated current (A(rms))			2.5	
Max. current		(A(o-p))	10.6	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/min) Note)1 DV0P428		DV0P4283	No limit Note)2	
Rated rotation	tational speed (r/min)		3000	
Max. rotationa	l speed	(r/min)	6000	
Moment of ine	rtia	Without brake	0.14	
of rotor (×10 ⁻⁴	kg·m²) With brake		0.16	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
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.

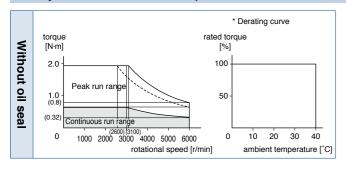
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

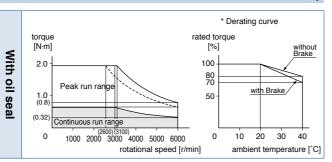
Permissible load (For details, refer to P.183)

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

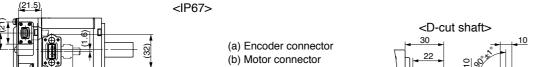
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

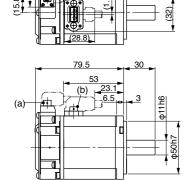
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



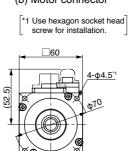


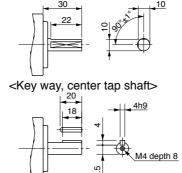
Dimensions < In Case of Without Brake, Cable direction to output shaft.>





<Cautions>





Mass: 0.78 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.

Specifications

					AC200 V		
Motor model		IP65			-	-	
		IP67		MSME022G1□	MSME022S1		
	1	Model	A5II, A5	series	MAD ◇T1507		
Applicable driver	*2	No.	A5IIE, A5E series		MAD ⊘T1507E	-	
unver		Frame symbol		A-frame			
Power sup	ply c	apacity	/	(kVA)	0	.5	
Rated outp	out			(W)	200		
Rated torq	ue			(N·m)	0.0	64	
Momentary	у Мах	x. peal	torque	(N·m)	1.91		
Rated curr	ent		(.	A(rms))	1.5		
Max. curre	nt		((A(o-p))	6.5		
Regenerati	ve br	ake	Without option		No limit Note)2		
frequency (times/min) Note)1		n) Note)1	DV0P4283		No limit Note)2		
Rated rotational speed (r/min)		(r/min)	3000				
Max. rotational speed (r/min)		(r/min)	6000				
Moment of	inert	tia	Without	brake	0.	14	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		(g·m²)	With b	rake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less					
Rotary end	oder	specif	ications	Note)5	20-bit Incremental	17-bit Absolute	
Resolutio		n per single turn		1048576	131072		

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

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

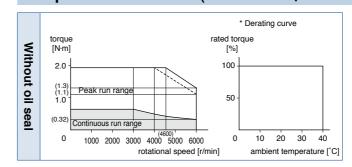
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

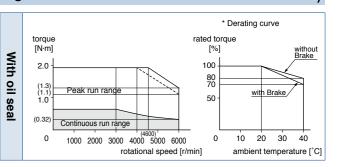
During assembly	Radial load P-direction (N)	392
	Thrust load A-direction (N)	147
assembly	Thrust load B-direction (N)	196
During operation	Radial load P-direction (N)	245
	Thrust load A, B-direction (N)	98

- 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.
- *3 \(\triangle\) in number of applicable driver represents the series. For more information about the part number, please refer to P.16.

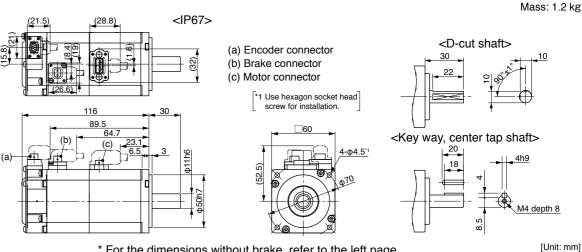
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)



<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.

<Cautions>

Specifications

ratio of the load and the rotor

Rotary encoder specifications

Resolution per single turn

Brake specifications (For 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

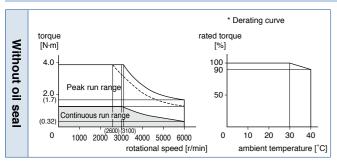
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

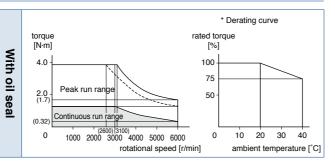
Torque characteristics (at AC100 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

17-bit

Absolute

131072



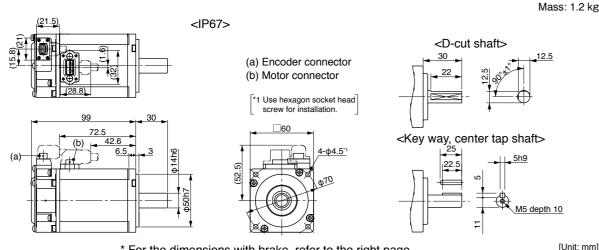


Dimensions < In Case of Without Brake, Cable direction to output shaft.>

20-bit

Incremental

1048576



* 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.

<u> </u>			AC2	00 V
Motor model		IP65	-	-
*1		IP67	MSME042G1□	MSME042S1□
Amaliaabla	Model	A5II, A5 series	MBD ⊘ T2510	
Applicable driver *2	No.	A5IIE, A5E series	MBD ⊘T2510E	_
unvei	Fr	ame symbol	B-fra	ame
Power supply	capacit	y (kVA)	0	.9
Rated output		(W)	40	00
Rated torque		(N·m)	1.	.3
Momentary M	ax. peal	k torque (N·m)	3.8	
Rated current		(A(rms))	2.4	
Max. current		(A(o-p))	10.2	
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)	60	00
Moment of ine	rtia	Without brake	0.3	26
of rotor (×10 ⁻⁴	kg·m²)	With brake	0.28	
Recommended moment of inertia ratio of the load and the rotor Note)3		30 times or less		
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.

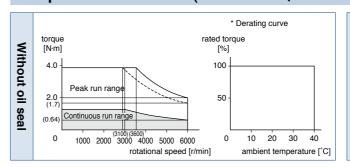
,	,
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

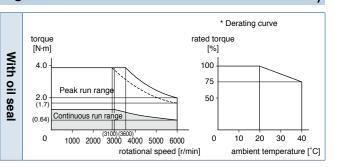
• Permissible load (For details, refer to P.183)

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

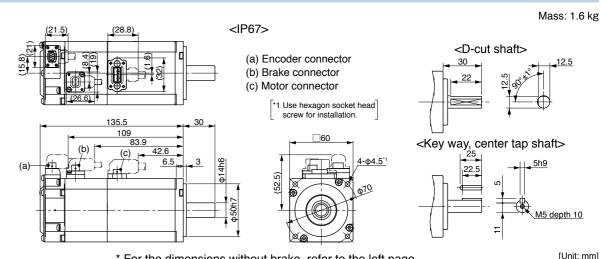
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

A5 Family

Motor Specifications

Specifications

			AC2	00 V
Mataumandal	IP65		_	_
Motor model *1		IP67	MSME082G1□	MSME082S1
A 1: 1.1	Model	A5II, A5 series	MCD<	T3520
Applicable driver *2	No.	A5IIE, A5E series	MCD ⊘T3520E	_
unver	Fr	ame symbol	C-fr	ame
Power supply	capacit	y (kVA)	1	.3
Rated output		(W)	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	Max. current (A(o-p))		17.4	
Regenerative b	rake	Without option	No limit 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	0.87	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3		20 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	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.

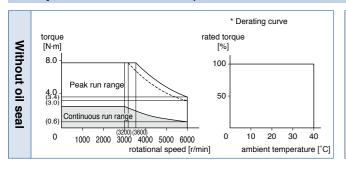
Static friction torque (N·m)	2.45 or more
Engaging time (ms)	70 or less
Releasing time (ms) Note)4	20 or less
Exciting current (DC) (A)	0.42
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

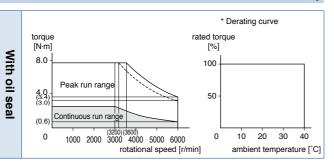
• Permissible load (For details, refer to P.183)

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

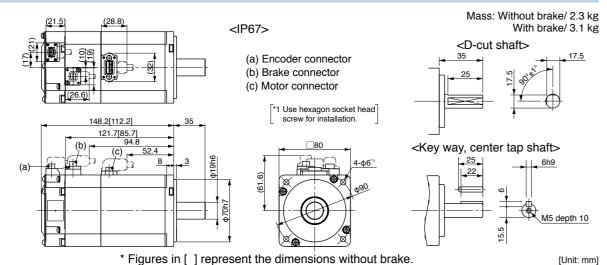
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver 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 < In Case of With Brake, Cable direction to output shaft.>



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

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

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

Specifications

				AC2	00 V
M-4	-1	IP65		MSME102GC□	MSME102SC
Motor mode	*1	IP67		MSME102G1□	MSME102S1
	Model	A5Ⅱ, A5	series	MDD<	T5540
Applicable driver	*2 No.	A5IIE, A	5E series	MDD ◇T5540E	-
unver	F	rame sym	bol	D-fr	ame
Power supp	oly capacit	у	(kVA)	1.	.8
Rated outp	ut		(W)	10	00
Rated torqu	ıe		(N·m)	3.	18
Momentary	Max. pea	k torque	(N·m)	9.55	
Rated curre	ent	(A(rms))	6.6	
Max. current (A(o-p))			2	8	
Regenerativ	e brake	Without	option	on No limit Note)2	
frequency (tir	mes/min) Note)1	DV0P4284		No limit Note)2	
Rated rotat	ional spee	d	(r/min)	3000	
Max. rotation	onal speed	ĺ	(r/min)	5000	
Moment of	inertia	Without	brake	2.03	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enc	oder speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution		n per sing	le turn	1048576	131072

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

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

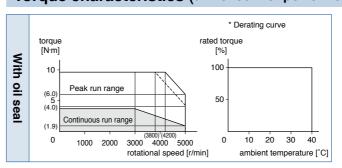
,	,
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
Releasing time (ms) Note)4 Exciting current (DC) (A) Releasing voltage (DC) (V)	15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

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

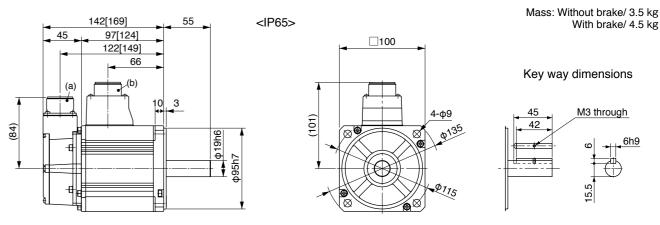
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	490
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- 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 \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
Mataumaadal			MSME152GC□	MSME152SC□	
Motor model		IP67		MSME152G1	MSME152S1
	Model	A5 I I, A5	series	MDD ◇ T5540	
Applicable *2	No.	A5IIE, A5E series		MDD ♦ T5540E	_
unver	Fr	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. peal	k torque	(N·m)	14.3	
Rated current (A(rms))		8.2			
Max. current (A(o-p))		35			
Regenerative b	orake	Without option		No limit Note)2	
frequency (times/	min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	5000	
Moment of ine	rtia	Without	brake	2.84	
of rotor (×10 ⁻⁴	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
R	esolutio	n per sing	le turn	1048576	131072

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

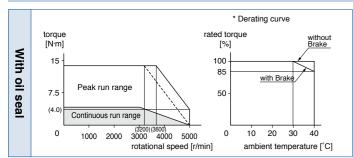
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

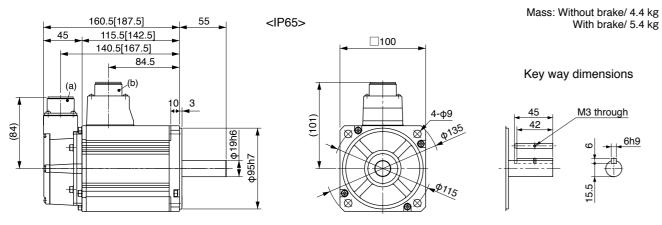
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- 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 \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	
M - t - · · · · - · d - l		IP65		MSME202GC□	MSME202SC
Motor mode	.	IP67		MSME202G1□	MSME202S1
	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 suppl	ly capacit	у	(kVA)	3	.3
Rated outpu	t		(W)	20	00
Rated torque	е		(N·m)	6.:	37
Momentary I	Max. peal	k torque	(N·m)	19.1	
Rated currer	nt	(A(rms))	11.3	
Max. current	t	((A(o-p))	4	8
Regenerative	e brake	Without	option	No limit Note)2	
frequency (time	es/min) Note)1	DV0P4285		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	3000	
Max. rotation	nal speed		(r/min)	5000	
Moment of in	nertia	Without brake		3.68	
of rotor (×10) ⁻⁴ kg·m²)	With brake		4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Resolution per single turn			le turn	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.

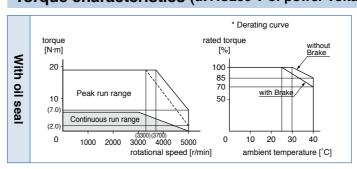
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

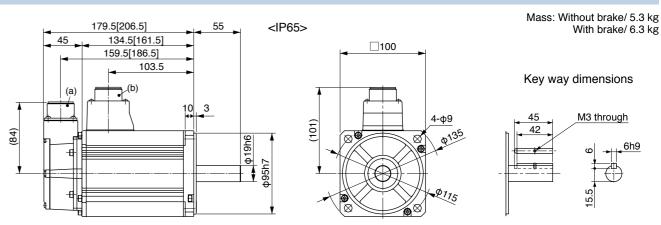
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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



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



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

[Unit: mm]

			AC2	00 V	
Motor model	IP65		MSME302GC□	MSME302SC□	
*1		IP67	MSME302G1□	MSME302S1□	
A 1: 1- 1 -	Model	A5II, A5 series	MFD<	TA390	
Applicable 42	No.	A5IIE, A5E series	MFD ⊘TA390E	_	
dilvei	Fr	ame symbol	F-fr	ame	
Power supply	capacit	y (kVA)	4	.5	
Rated output		(W)	30	000	
Rated torque		(N·m)	9.	55	
Momentary Ma	ax. peal	k torque (N·m)	28.6		
Rated current		(A(rms))	18.1		
Max. current	ax. 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)	50	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	er speci	fications 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.

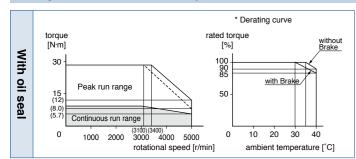
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

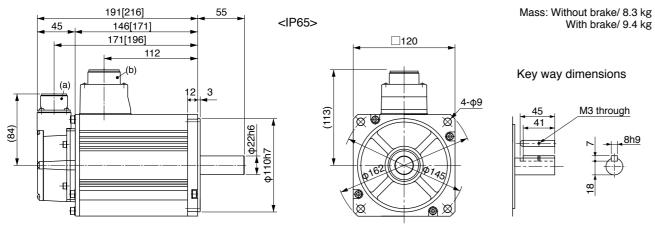
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

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

Specifications

			AC2	00 V		
		IP65		MSME402GC□	MSME402SC	
Motor mode	ÐI ⊧1	IP67		MSME402G1□	MSME402S1	
	Model	Model A5II, A5 series		MFD ⊘TB3A2		
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-	
unven	F	rame sym	bol	F-fra	ame	
Power supp	oly capacit	у	(kVA)	6	.0	
Rated outp	ut		(W)	40	00	
Rated torqu	ie		(N·m)	12	2.7	
Momentary	Max. pea	k torque	(N·m)	38	3.2	
Rated curre	ent	(A(rms))	19.6		
Max. currer	nt	((A(o-p))	8	3	
Regenerativ	e brake	Without	thout option No limit Note)2		t Note)2	
frequency (tin	nes/min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotat	ional spee	d	(r/min)	3000		
Max. rotation	nal speed	I	(r/min)	4500		
Moment of	inertia	Without	brake	12	12.9	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	14	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	
	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.

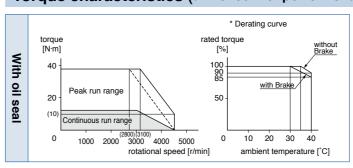
•	
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

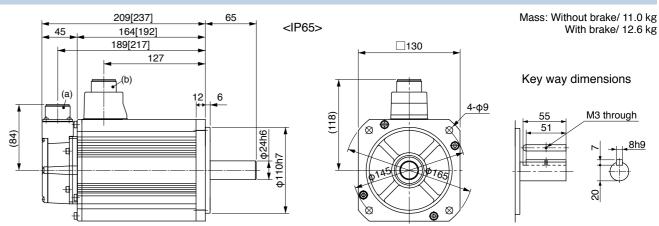
	Radial load P-direction (N)	980
During assembl	Thrust load A-direction (N)	588
assembl	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operatio	Thrust load A, B-direction (N)	343

- 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.>)



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



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

[Unit: mm]

			AC2	00 V	
Motor model			MSME502GC□	MSME502SC□	
*1		IP67		MSME502G1□	MSME502S1
Ammliaabla	Model	A5II, A5 series		MFD ⊘TB3A2	
Applicable driver *2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
anver	Fr	ame sym	bol	F-fra	ame
Power supply	capacit	у	(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/r	min) Note)1	DV0P4285×2		No limit Note)2	
Rated rotation	al spee	d	(r/min)	3000	
Max. rotationa	l speed		(r/min)	4500	
Moment of ine	rtia	Without	brake	17.4	
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	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 sing	le turn	1048576	131072

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

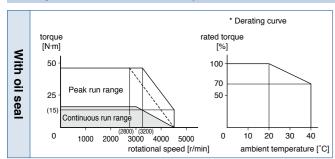
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

During assembly	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

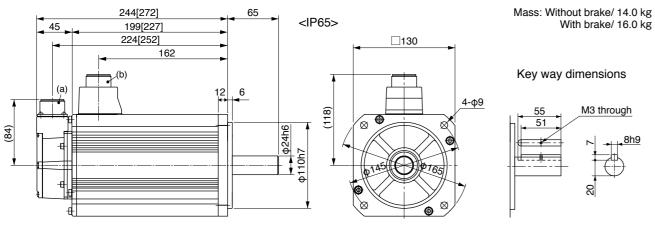
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC2	00 V	
Matarasadal		IP65		MDME102GC	MDME102SC
Motor mode	•	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	ıt		(W)	10	00
Rated torqu	е		(N·m)	4.	77
Momentary	Max. peal	k torque	(N·m)	14.3	
Rated current (A(rms))			5.7		
Max. current (A(o-p))			2	4	
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)	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		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.

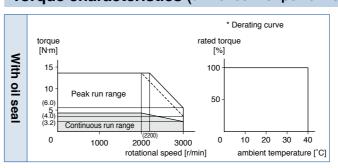
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

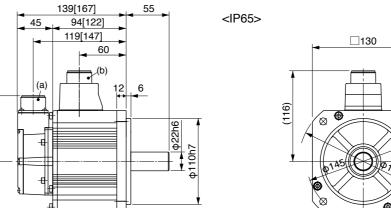
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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



Key way dimensions

Mass: Without brake/ 5.2 kg

With brake/ 6.7 kg

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

[Unit: mm]

			AC2	00 V	
Motor model		IP65	MDME152GC	MDME152SC	
*1		IP67	MDME152G1□	MDME152S1	
Annliachla	Model	A5II, A5 series	MDD ⊘ T5540		
Applicable driver *2	No.	A5IE, A5E series	MDD ⊘T5540E	_	
anvoi	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 Ma	Momentary Max. peak torque (N·m)			21.5	
Rated current	Rated current (A(rms))		9.4		
Max. current (A(o-p))			40		
Regenerative b	Regenerative brake Without option		No limit Note)2		
frequency (times/n	nin) Note)1	DV0P4284	No limi	t Note)2	
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	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	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.

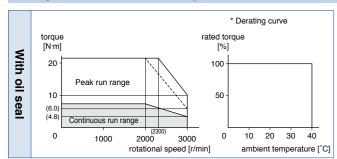
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

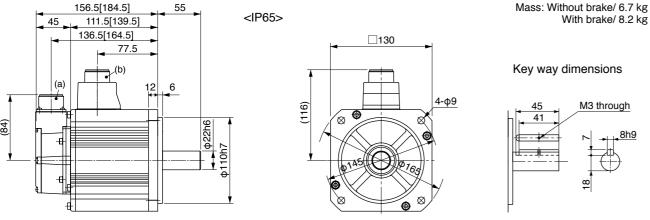
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC2	00 V	
Mataumandal		IP65		MDME202GC	MDME202SC	
Motor mode	₽I *1	IP67		MDME202G1	MDME202S1	
Annlinable	Model	A5II, A5	series	MED◇	T7364	
Applicable driver	No.	A5IIE, A	5E series	MED ⊘T7364E	_	
divei	F	rame sym	ibol	E-fra	ame	
Power supp	oly capacit	ty	(kVA)	3	.3	
Rated outp	ut		(W)	20	00	
Rated torqu	ıe		(N·m)	9.	55	
Momentary	Max. pea	k torque	(N·m)	28.6		
Rated current (A(rms))			11.5			
Max. currer	nt		(A(o-p))	4	49	
Regenerativ	e brake	Without	option	n No limit Note)2		
frequency (tir	nes/min) Note)	DV0P4285		No limit Note)2		
Rated rotat	ional spee	ed	(r/min)	2000		
Max. rotation	onal speed	i	(r/min)	3000		
Moment of	inertia	Without	t 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)5		20-bit Incremental	17-bit Absolute			
Resolution per single 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.

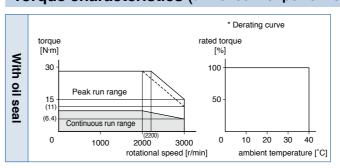
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

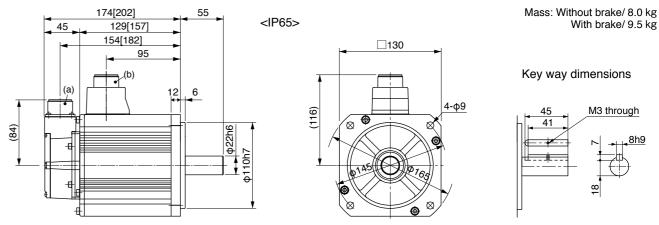
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



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



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

[Unit: mm]

A5 Family

Motor model				00 V
		IP65	MDME302GC□	MDME302SC
*1		IP67	MDME302G1□	MDME302S1
Amaliaabla	Model	A5II, A5 series	MFD<	TA390
Applicable driver *2	No.	A5IIE, A5E series	MFD ⊘TA390E	_
divei	Fr	ame symbol	F-fra	ame
Power supply of	capacity	y (kVA)	4.	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	.3
Momentary Ma	ıx. peal	torque (N·m)	43.0	
Rated current (A(rms))			17.4	
Max. current		(A(o-p))	7	4
Regenerative br	rake	Without option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0P4285×2	No limit Note)2	
Rated rotationa	al spee	d (r/min)	2000	
Max. rotational	speed	(r/min)	3000	
Moment of iner	rtia	Without brake	12.9	
of rotor ($\times 10^{-4}$ k	kg·m²)	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	
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.

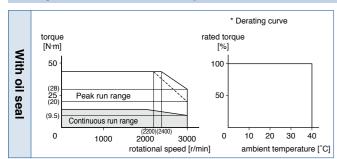
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

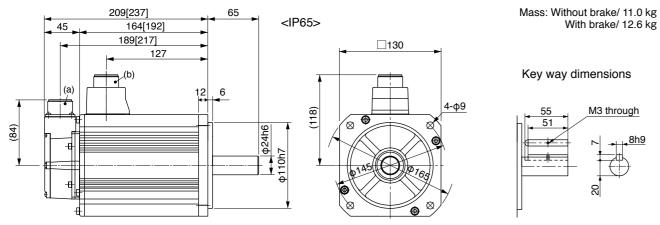
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC2	00 V
		IP65		MDME402GC	MDME402SC
Motor mode *	:1	IP67		MDME402G1□	MDME402S1
A 1: 1-1	Model	A5 I I, A5	series	MFD♦	TB3A2
Applicable driver *	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	-
unven	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)	19).1
Momentary	Max. peal	k torque	(N·m)	57.3	
Rated curre	nt	(A(rms))	21.0	
Max. curren	t	((A(o-p))	89	
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)	2000	
Max. rotatio	nal speed		(r/min)	3000	
Moment of i	nertia	Without	brake	37.6	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	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		20-bit Incremental	17-bit Absolute		
Resolution per single 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.

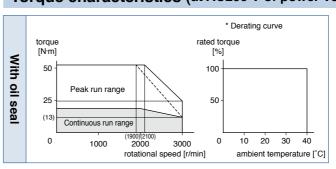
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

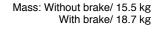
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) in number of applicable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

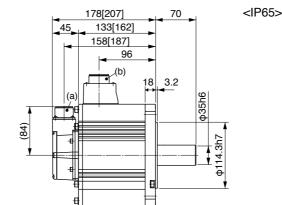
Torque characteristics (at AC200 V of power voltage < Dotted line represents the torque at 10 % less supply voltage.>)

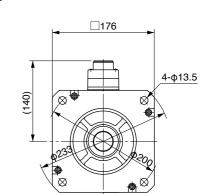


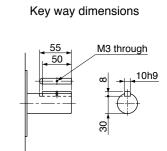
Dimensions

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









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

[Unit: mm]

				AC2	00 V
			MDME502GC	MDME502SC□	
Motor model *1		IP67		MDME502G1□	MDME502S1
Amaliaabla	Model	A5II, A5 ser	ries	MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5E	series	MFD ⊘TB3A2E	_
unver	Fr	ame symbo	ol	F-fra	ame
Power supply	capacit	y	(kVA)	7.	.5
Rated output			(W)	50	00
Rated torque			(N·m)	23	3.9
Momentary Ma	ax. peal	k torque	(N·m)	71.6	
Rated current		(A(rms))	25.9	
Max. current (A(o-p))			110		
Regenerative b	rake	Without or	otion	120	
frequency (times/r	min) Note)1	DV0P428	5×2	No limit Note)2	
Rated rotation	al spee	d (r	/min)	2000	
Max. rotationa	l speed	(r	/min)	3000	
Moment of ine	rtia	Without b	rake	48.0	
of rotor ($\times 10^{-4}$	kg·m²)	With bra	ke	53.3	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
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.

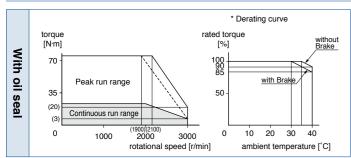
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

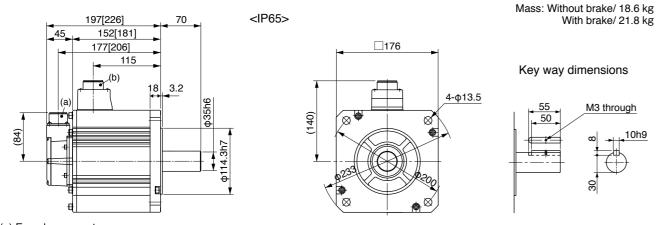
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- 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 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
		IP65		-	-
Motor mode *	.	IP67		MDME752G1	MDME752S1
A	Model	A5 I I, A5	series	MGD♦	TC3B4
Applicable driver *	No.	A5IIE, A	5E series	-	_
diivoi	Fr	ame sym	bol	G-fr	ame
Power supp	ly capacit	y	(kVA)	1	1
Rated outpu	ıt		(W)	75	00
Rated torque	е		(N·m)	47	7.8
Momentary	Max. peal	k torque	(N·m)	119	
Rated curre	nt	(A(rms))	44.0	
Max. current (A(o-p))			16	65	
Regenerative	e brake	Without	option	No limi	it Note)2
frequency (time	es/min) Note)1	DV0P4	285×3	No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1500	
Max. rotation	nal speed		(r/min)	3000	
Moment of in	nertia	Without	brake	101	
of rotor (×10) ⁻⁴ kg·m²)	With b	orake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			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.

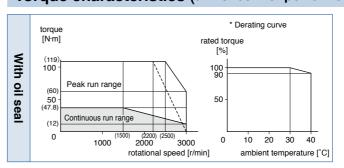
,	,
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

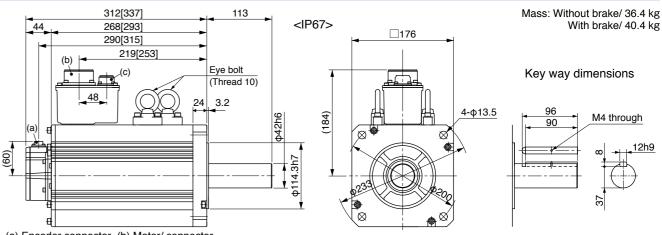
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

A5 Family

Motor Specifications

Specifications

			AC2	00 V	
IP65		-	-		
Motor model *1		IP67	MDMEC12G1	MDMEC12S1	
A	Model		MHD◇	TC3B4	
Applicable driver *2	No.	A5IIE, A5E series	_	_	
unver	Fr	ame symbol	H-fr	ame	
Power supply	capacity	y (kVA)	1	7	
Rated output		(W)	110	000	
Rated torque		(N·m)	70	0.0	
Momentary Ma	Momentary Max. peak torque (N·m)			175	
Rated current		(A(rms))	54.2		
Max. current		(A(o-p))	203		
Regenerative b	rake	Without option	No limit Note)2		
frequency (times/n	nin) Note)1	DV0PM20058	No limit Note)2		
Rated rotation	al spee	d (r/min)	1500		
Max. rotational	speed	(r/min)	2000		
Moment of ine	rtia	Without brake	212		
of rotor ($\times 10^{-4}$	kg·m²)	With brake	220		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Re	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.

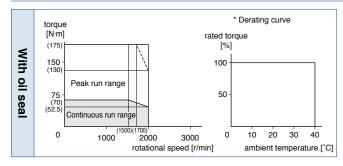
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

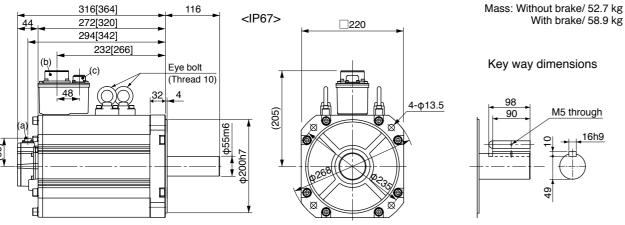
During assembly	Radial load P-direction (N)	4508
	Thrust load A-direction (N)	1470
	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

- 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 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.

[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 - t - · · · · · · · · · · · · · · · · · ·		IP65		-	-
Motor mode	ÐI ⊧1	IP67		MDMEC52G1□	MDMEC52S1
A 1: 1- 1	Model	A5 I I, A5	series	MHD♦TC3B4	
Applicable driver	No.	A5IIE, A	5E series	-	-
unven	Fi	ame sym	bol	H-fr	ame
Power supp	oly capacit	y	(kVA)	2	2
Rated outp	ut		(W)	150	000
Rated torqu	ıe		(N·m)	95	i.5
Momentary	Max. pea	k torque	(N·m)	224	
Rated current (A(rms))		66.1			
Max. current (A(o-p))		236			
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tin	nes/min) Note)1	DV0PM20058		No limit Note)2	
Rated rotational speed (r/min)		(r/min)	1500		
Max. rotation	nal speed		(r/min)	2000	
Moment of	inertia	Without	brake	302	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	311	
Recommen ratio of the			tia Note)3	10 times	s or less
Rotary encoder specifications Note)5 Resolution per single turn		20-bit Incremental	17-bit Absolute		
		n per sing	le 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.

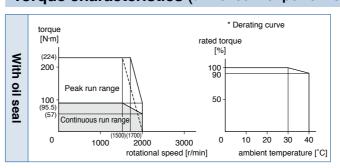
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

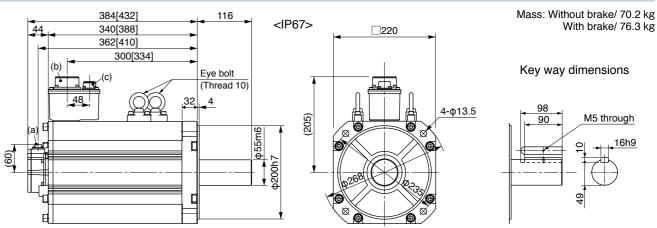
Radial load P-direction (N)	4508
Thrust load A-direction (N)	1470
Thrust load B-direction (N)	1764
Radial load P-direction (N)	2254
Thrust load A, B-direction (N)	686
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

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



Dimensions



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

[Unit: mm]

-				
			AC2	00 V
Motor model	IP65		-	-
*1		IP67	MFME152G1□	MFME152S1
A 11 11	Model	A5II, A5 series	MDD<	T5540
Applicable *2	No.	A5IIE, A5E series	MDD \diamondsuit T5540E	_
unvei	Fr	ame symbol	D-fr	ame
Power supply	capacity	y (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 frequency (times/min) Note)1 Without option DV0P4284		10	00	
		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	18.2	
of rotor (×10 ⁻⁴	kg·m²)	With brake	23.5	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
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.

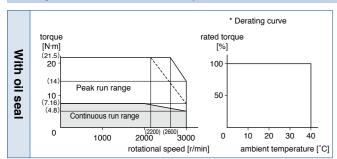
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

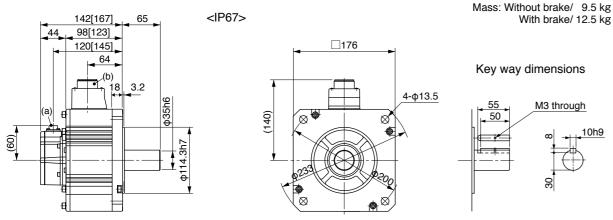
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- 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	
		IP65		-	-	
Motor mod	*1		IP67		MFME252G1□	MFME252S1
A	М	odel	A5II, A5 series		MED ⊘T7364	
Applicable driver	*2 No).	A5IIE, A5E series		MED ⊘T7364E	_
unver		Fr	ame sym	bol	E-fra	ame
Power sup	ply cap	acit	y	(kVA)	3	.8
Rated outp	ut			(W)	25	00
Rated torqu	ue			(N·m)	11	.9
Momentary	/ Max.	peal	k torque	(N·m)	30.4	
Rated curre	ent		(.	A(rms))	13.4	
Max. current (A(o-p))		57				
Regenerativ	ve brak	æ	Without	option	75	
frequency (tir			DV0P4285		No limit Note)2	
Rated rotat	tional s	pee	d	(r/min)	2000	
Max. rotation	onal sp	eed		(r/min)	3000	
Moment of	inertia		Without	brake	35.8	
of rotor (×10 ⁻⁴ kg·m ²)		With b	rake	45.2		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary encoder specifications Note)5		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.

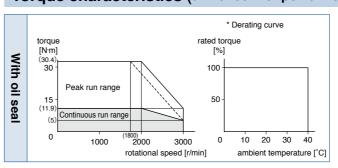
,	,
Static friction torque (N·m)	21.6 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
Exciting voltage (DC) (V)	24±2.4

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

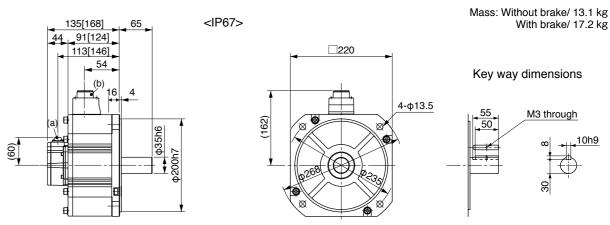
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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

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

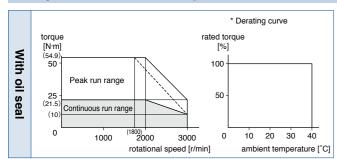
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

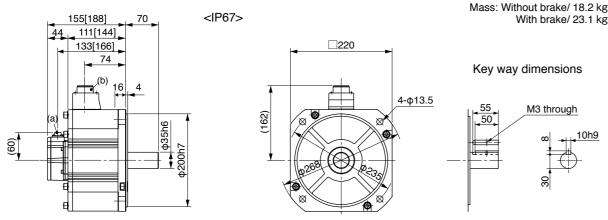
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

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

Specifications

				AC2	00 V
		IP65		MGME092GC□	MGME092SC
Motor model		IP67		MGME092G1□	MGME092S1
	Model	A5II, A5	series	MDD<	T5540
Applicable driver *2	No.	A5IIE, A5E series		MDD \diamondsuit T5540E	_
unver	Fr	ame sym	bol	D-fr	ame
Power supply	capacity	y	(kVA)	1.	8
Rated output			(W)	90	00
Rated torque			(N·m)	8.	59
Momentary M	ax. peal	k torque	(N·m)	19.3	
Rated current		(A(rms))	7.6	
Max. current (A(o-p))			24		
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4284		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	6.	70
of rotor (×10 ⁻⁴ kg·m ²)		With b	orake	7.9	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			1048576	131072	

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

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

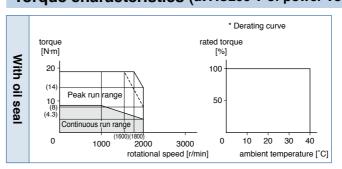
,	,
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

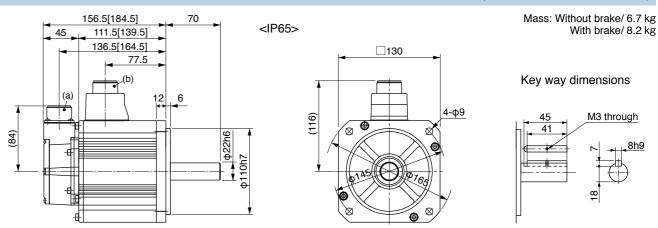
Radial load P-direction (N)	980
Thrust load A-direction (N)	588
Thrust load B-direction (N)	686
Radial load P-direction (N)	686
Thrust load A, B-direction (N)	196
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

- 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.139.)



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

[Unit: mm]

				AC2	00 V
IP65		MGME202GC□	MGME202SC□		
Motor model *1		IP67		MGME202G1□	MGME202S1
A !! - -	Model	A5II, A5 serie	es	MFD<	TA390
Applicable driver *2	No.	A5IIE, A5E s	series	MFD ⊘TA390E	_
unver	Fr	ame symbol		F-frame	
Power supply	capacit	y (k	(AV	3.	8
Rated output			(W)	20	00
Rated torque		(1)	√m)	19.1	
Momentary M	ax. peal	k torque (N	√m)	47.7	
Rated current (A(rms))			ns))	17.0	
Max. current (A(o-p))		60			
Regenerative brake		Without opt	ion	No limit Note)2	
frequency (times/	min) Note)1	DV0P4285	/0P4285×2 No limit Note)2		t Note)2
Rated rotation	al spee	d (r/r	min)	1000	
Max. rotationa	l speed	(r/r	min)	2000	
Moment of ine	rtia	Without bra	ake	30.3	
of rotor (×10 ⁻⁴ kg·m²) With brake		e	35.6		
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			ırn	1048576	131072

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

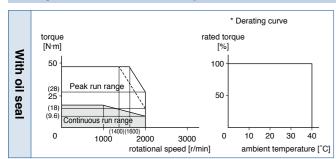
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

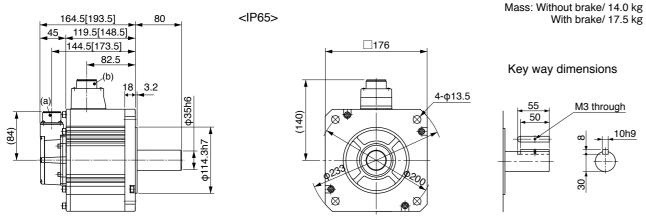
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

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

			AC2	00 V
Motor model		IP65	MGME302GC□	MGME302SC□
*1		IP67	MGME302G1□	MGME302S1□
A 1: 1- 1	Model	A5II, A5 series	MFD◇	TB3A2
Applicable driver *2	No.	A5IE, A5E series	MFD ⊘TB3A2E	_
unver	Fr	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. peal	k torque (N·m)	71.7	
Rated current		(A(rms))	22.6	
Max. current (A(o-p))		8	0	
Regenerative brake Without option frequency (times/min) Note)1 DV0P4285x2		Without option	No limi	it Note)2
		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	48.4	
of rotor (×10 ⁻⁴	of rotor (×10 ⁻⁴ kg·m²) With brake		53.7	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	1048576	131072

Specifications

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

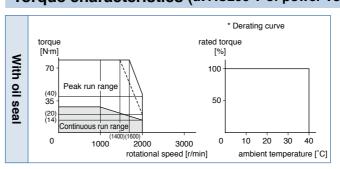
•	
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

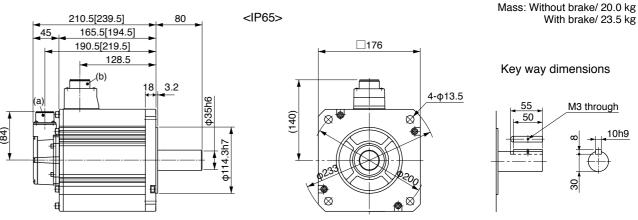
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1470
	Thrust load A, B-direction (N)	490

- 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 \(\triangle\) 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
IP65		-	-	
Motor model *1		IP67	MGME452G1□	MGME452S1
A mustic a late	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)	7.	.5
Rated output		(W)	45	00
Rated torque		(N·m)	43	3.0
Momentary Ma	ax. peal	k torque (N·m)	107	
Rated current		(A(rms))	29.7	
Max. current (A(o-p))			11	10
Regenerative brake Without option		No limi	t Note)2	
		DV0P4285×2	No limi	t Note)2
Rated rotation	al spee	d (r/min)	1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	79.1	
of rotor (×10 ⁻⁴	kg·m²)	With brake	84.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less	
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
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.

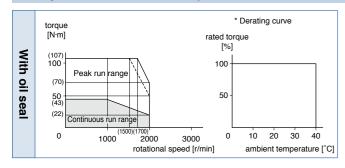
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

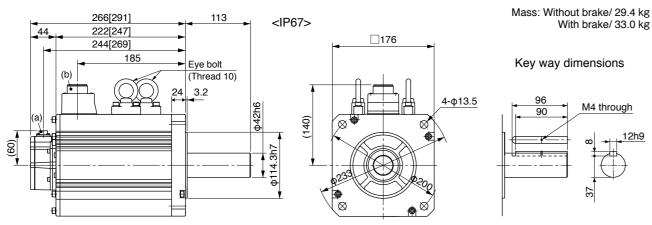
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1470
	Thrust load A, B-direction (N)	490

- 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.

Specifications

				AC2	00 V
Mataumada		IP65		-	-
Motor mode	?I ⊧1	IP67		MGME602G1□	MGME602S1
	Model	A5II, A5	series	MGD◇	TC3B4
Applicable driver *	No.	A5IIE, A	5E series	_	_
diivoi	F	rame sym	bol	G-fr	ame
Power supp	ly capacit	У	(kVA)	9.	.0
Rated outpo	ut		(W)	60	00
Rated torqu	ie		(N·m)	57	'.3
Momentary	Max. pea	k torque	(N·m)	143	
Rated curre	ent	(A(rms))	38.8	
Max. current (A(o-p))		149			
Regenerativ	e brake	Without	option	No limit Note)2	
frequency (tim	nes/min) Note)1	DV0P4285×4		No limit Note)2	
Rated rotati	onal spee	ed	(r/min)	1000	
Max. rotation	nal speed	l	(r/min)	2000	
Moment of	inertia	Without	brake	101	
of rotor (×10	0 ⁻⁴ kg·m²)	With b	orake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			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.

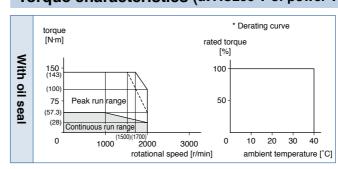
1	,
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

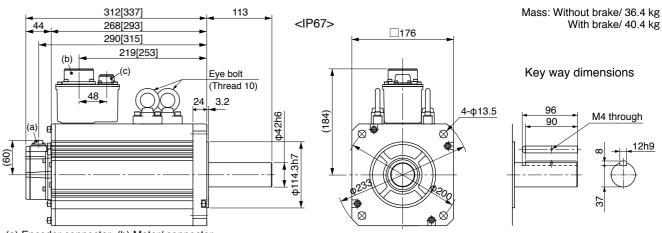
Radial load P-direction (N)	2058
Thrust load A-direction (N)	980
Thrust load B-direction (N)	1176
Radial load P-direction (N)	1764
Thrust load A, B-direction (N)	588
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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

				00 V
IP65		IP65	MHME102GC	MHME102SC
Motor model *1		IP67	MHME102G1□	MHME102S1
Annliachla	Model	A5II, A5 series	MDD<	T3530
Applicable 42	No.	A5IIE, A5E series	MDD ⊘T3530E	_
diver	Fr	ame symbol	D-fr	ame
Power supply	capacit	y (kVA)	1.	.8
Rated output		(W)	10	00
Rated torque		(N·m)	4.	77
Momentary Ma	ax. peal	k torque (N·m)	14.3	
Rated current		(A(rms))	5.7	
Max. current (A(o-p))			24	
Regenerative b	rake	Without option	83	
frequency (times/i	min) Note)1	DV0P4284	No limit Note)2	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	24.7	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
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.

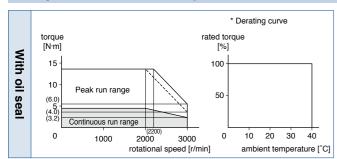
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

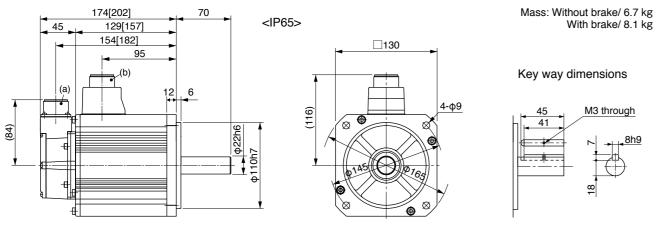
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.

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.

Specifications

			AC2	00 V	
M - t - · · · · - · - d - l		IP65		MHME152GC	MHME152SC
Motor model		IP67		MHME152G1	MHME152S1
A II I. I .	Model	del A5II, A5 series		MDD ◇ T5540	
Applicable driver *2	No.	A5IIE, A5E series		MDD ◇T5540E	_
unven	Fr	ame sym	bol	D-fr	ame
Power suppl	y capacit	y	(kVA)	2	.3
Rated output	t		(W)	15	00
Rated torque)		(N·m)	7.	16
Momentary I	Max. peal	k torque	(N·m)	21.5	
Rated currer	nt	(A(rms))	9.4	
Max. current (A(o-p))		4	0		
Regenerative	brake	Without	option	22	
frequency (time	s/min) Note)1	DV0P4284		130	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotation	nal speed		(r/min)	3000	
Moment of ir	nertia	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 encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
	Resolution per single turn			1048576	131072

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

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

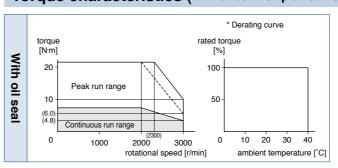
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

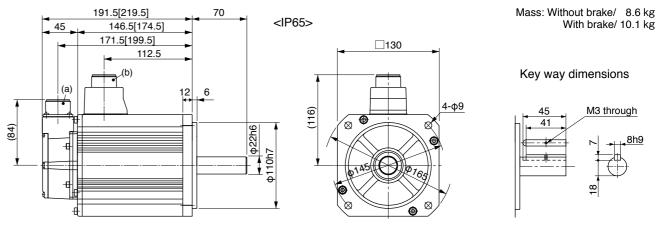
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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
I		IP65	MHME202GC	MHME202SC
Motor model *1		IP67	MHME202G1□	MHME202S1
Amuliaahla	Model	A5II, A5 series	MED◇	T7364
Applicable 42	No.	A5IIE, A5E series	MED ⊘T7364E	_
dilvei	Fı	ame symbol	E-fra	ame
Power supply	capacit	y (kVA)	3	.3
Rated output		(W)	20	00
Rated torque		(N·m)	9.	55
Momentary Ma	ax. pea	k torque (N·m)	28.6	
Rated current		(A(rms))	11.1	
Max. current (A(o-p))			47	
Regenerative b	rake	Without option	45	
frequency (times/	min) Note)1	DV0P4285	142	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	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	Rotary encoder specifications 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.

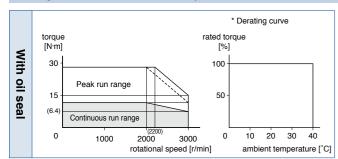
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

During assembly 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

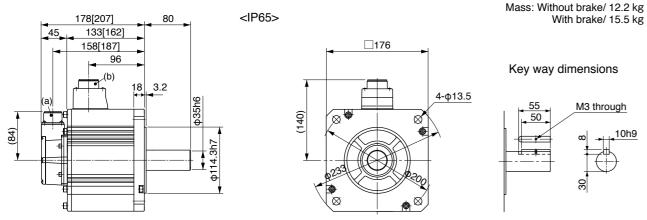
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver 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.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	
Mataumaad	-1	IP65		MHME302GC□	MHME302SC	
Motor mode	₽I *1	IP67		MHME302G1	MHME302S1	
A 1: 1- 1	Model	A5II, A5	series	MFD◇	MFD ⊘TA39 0	
Applicable driver	No.	A5IIE, A	5E series	MFD ⊘TA390E	_	
divei	F	rame sym	ıbol	F-fr	ame	
Power supp	oly capacit	у	(kVA)	4	.5	
Rated outp	ut		(W)	30	00	
Rated torqu	ıe		(N·m)	14	.3	
Momentary	Max. pea	k torque	(N·m)	43.0		
Rated curre	ent	(A(rms))	16.0		
Max. currer	nt		(A(o-p))	68		
Regenerativ	e brake	Without option 19		9		
frequency (tin	nes/min) Note)1	DV0P4285×2		142		
Rated rotat	ional spee	d	(r/min)	2000		
Max. rotation	onal speed	l	(r/min)	3000		
Moment of	inertia	Without	t brake	90.5		
of rotor (×10 ⁻⁴ kg·m²) With brak		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 sin			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.

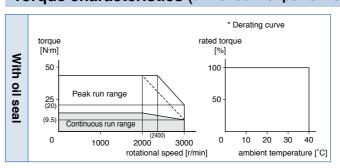
,
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

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

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

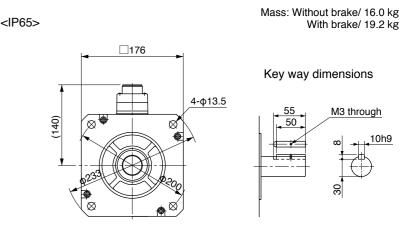
Dimensions

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]

				AC2	00 V
Motor model			MHME402GC	MHME402SC	
*1		IP67		MHME402G1□	MHME402S1
A	Model	A5II, A5 s	eries	MFD♦	TB3A2
Applicable driver *2	No.	A5IIE, A5E series		MFD ⊘TB3A2E	-
unver	Fr	ame symb	ol	F-fra	ame
Power supply	capacit	у	(kVA)	6	.0
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))	21.0	
Max. current (A(o-p))			4(o-p))	89	
Regenerative brake Without option			option	1	7
frequency (times/i	min) Note)1	DV0P42	85×2	125	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	112	
of rotor ($\times 10^{-4}$	kg·m²)	With bi	rake	114	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single	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.

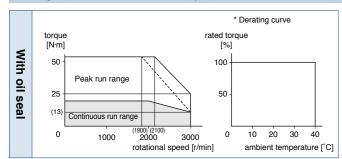
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

	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

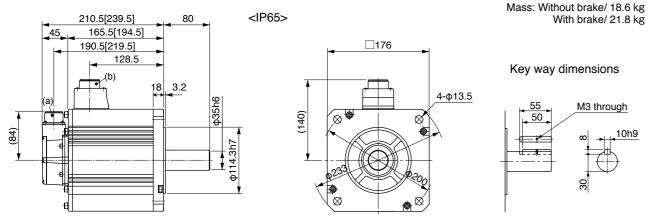
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \bigcirc in number of applicable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

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

Dimensions are subject to change without notice. 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		MHME502GC	MHME502SC	
Motor mode	€I *1		IP67		MHME502G1	MHME502S1
Amaliaahla		Model	A5II, A5	series	MFD♦	TB3A2
Applicable driver	*2	No.	A5IIE, A	5E series	MFD ⊘TB3A2E	_
anvoi		Fr	ame sym	bol	F-fra	ame
Power supp	ply c	apacity	y	(kVA)	7.	5
Rated outp	ut			(W)	50	00
Rated torqu	ue			(N·m)	23	.9
Momentary	Max	x. peal	k torque	(N·m)	71.6	
Rated curre	ent		(A(rms))	25.9	
Max. current (A(o-p))			11	0		
Regenerativ	e br	ake	Without	option	10	
frequency (tin	nes/mi	n) Note)1	DV0P4285×2		76	
Rated rotat	iona	l spee	d	(r/min)	2000	
Max. rotation	onal	speed		(r/min)	3000	
Moment of	iner	tia	Without	brake	162	
of rotor (×10 ⁻⁴ kg·m²) With brake		orake	164			
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute			
Resolution per single			le 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.

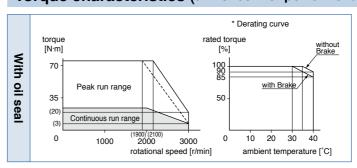
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

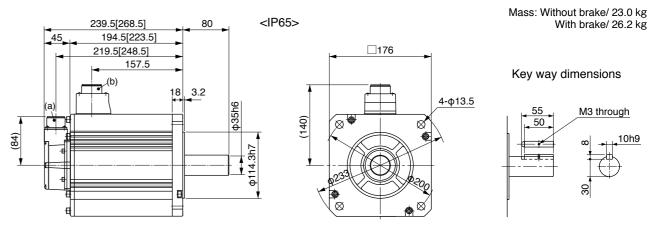
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- 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 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
		IP65	-	-
Motor mode	•	IP67	MHME752G1□	MHME752S1
A	Model	A5II, A5 series	MGD ⊘TC3B 4	
Applicable driver *	No.	A5IE, A5E series	_	_
anvoi	Fr	ame symbol	G-fr	ame
Power supp	ly capacit	y (kVA)	1	1
Rated output	ıt	(W)	75	00
Rated torqu	е	(N·m)	47.8	
Momentary	Max. peal	k torque (N·m)	119	
Rated curre	nt	(A(rms))	44.0	
Max. current (A(o-p))			165	
Regenerative	e brake	Without option	No limit Note)2	
frequency (time	es/min) Note)1	DV0P4285×4	No limit Note)2	
Rated rotation	onal spee	d (r/min)	1500	
Max. rotatio	nal speed	(r/min)	3000	
Moment of i		Without brake	273	
of rotor (×10 ⁻⁴ kg·m ²) With brake		With brake	279	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less	
Rotary enco	der speci	fications Note)5	20-bit Incremental	17-bit Absolute
	Resolution per single turn			131072

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

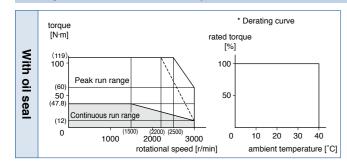
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.41±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

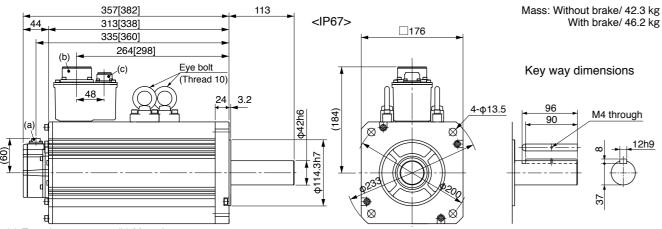
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
assembly	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

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

Specifications

			AC4	00 V		
		IP65		MSME084GC□	MSME084SC	
Motor mode *		IP67		MSME084G1□	MSME084S1	
A II In I .	Model	A5 I I, A5	series	MDD<	T2412	
Applicable driver **	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	_	
unver	Fr	ame sym	bol	D-fr	ame	
Power suppl	y capacit	y	(kVA)	1.	.6	
Rated outpu	t		(W)	75	50	
Rated torque	Э		(N·m)	2.:	39	
Momentary I	Max. peal	k torque	(N·m)	7.16		
Rated currer	nt	(A(rms))	2.4		
Max. current (A(o-p))			1	0		
Regenerative	e brake	Without	option	No limit Note)2		
frequency (time	es/min) Note)1	DV0PM20048		No limit Note)2		
Rated rotation	onal spee	d	(r/min)	3000		
Max. rotation	nal speed		(r/min)	5000		
Moment of in	nertia	Without	brake	1.61		
of rotor (×10	With b	rake	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				1048576	131072	

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

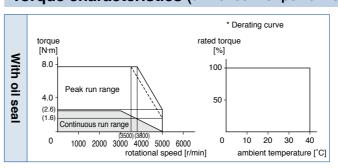
•	
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

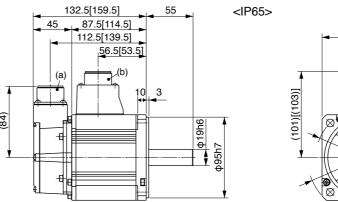
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- 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 \(\triangle\) 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.)

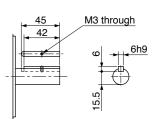


□100

With brake/ 4.1 kg

Mass: Without brake/ 3.1 kg

Key way dimensions



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

[Unit: mm]

A5 Family

				AC4	00 V
Matauralah		IP65	MSME104	4GC□	MSME104SC□
Motor model		IP67	MSME10	4G1□	MSME104S1□
	Model	A5II, A5 series		MDD ⊘ T3420	
Applicable driver *2	No.	A5IIE, A5E serie	s MDD \diamondsuit T3	3420E	_
unven	Fr	ame symbol		D-fr	ame
Power supply	capacit	y (kVA)	1	.8
Rated output		(W)	10	00
Rated torque		(N·m)	3.	18
Momentary M	lax. peal	k torque (N⋅m)	9.55	
Rated current	:	(A(rms)	3.3	
Max. current (A(o-p)))	14	
Regenerative	brake	Without option		No limit Note)2	
frequency (times	/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	nal spee	d (r/mir)	3000	
Max. rotation	al speed	(r/mir)	5000	
Moment of inc	ertia	Without brake		2.03	
of rotor (×10 ⁻⁴	¹ kg·m²)	With brake		2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3				15 times or less	
Rotary encoder specifications Note)5			20-b Increme	••	17-bit Absolute
F	Resolutio	n per single turn	10485	76	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.

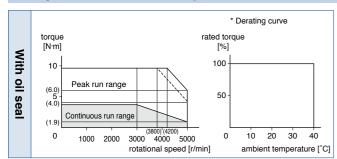
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

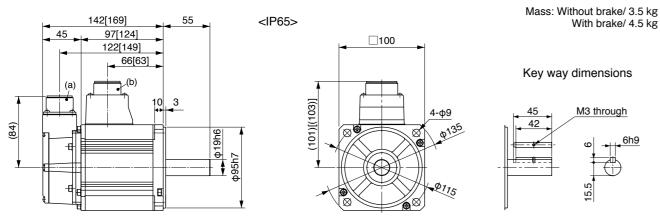
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

					AC4	00 V
Manager		IP65		MSME154GC□	MSME154SC	
Motor mod	*1		IP67		MSME154G1□	MSME154S1
Annlinable	1	Model	A5II, A5	series	MDD<	T3420
Applicable driver	*2	No.	A5IIE, A	5E series	MDD ⊘T3420E	_
unver		Fr	ame sym	bol	D-fr	ame
Power sup	ply c	apacit	/	(kVA)	2	.3
Rated outp	ut			(W)	15	00
Rated torqu	ue			(N·m)	4.	77
Momentary	/ Max	x. peal	c torque	(N·m)	14.3	
Rated curre	ent		(A(rms))	4.2	
Max. curre	nt			(A(o-p))	18	
Regenerativ	ve br	ake	Without	option	No limit Note)2	
frequency (tir	mes/mi	n) Note)1	DV0PM	20048	No limit Note)2	
Rated rotat	tiona	l spee	d	(r/min)	30	00
Max. rotation	onal	speed		(r/min)	5000	
Moment of	inert	tia	Without	brake	2.84	
of rotor ($\times 10^{-4} \text{ kg} \cdot \text{m}^2$)		g·m²)	With b	orake	3.17	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute	
Resolution			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.

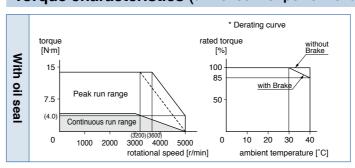
7.8 or more
50 or less
15 or less
0.81±10 %
2 or more
24±2.4

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

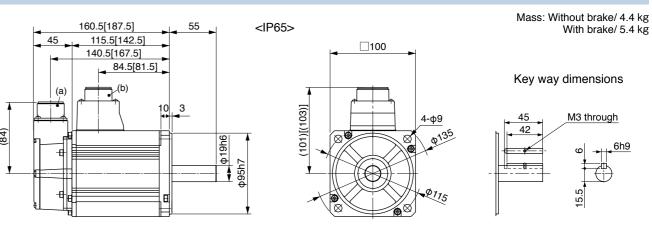
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- 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.>)



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
Motor model		IP65		MSME204GC□	MSME204SC□
*1		IP67		MSME204G1□	MSME204S1
Amalianda	Model	A5II, A5 series		MED ◇T4430	
Applicable *2	No.	A5IIE, A	5E series	MED ⊘T4430E	-
unver	Fr	ame sym	ıbol	E-fra	ame
Power supply of	capacit	y	(kVA)	3	.3
Rated output			(W)	20	00
Rated torque			(N·m)	6.:	37
Momentary Ma	ax. peal	k torque	(N·m)	19.1	
Rated current (A(rms))			5.7		
Max. current (A(o-p))			24		
Regenerative brake Without option		option	No limi	t Note)2	
frequency (times/m	nin) Note)1	DV0PM20049		No limit Note)2	
Rated rotations	al spee	d	(r/min)	3000	
Max. rotational	speed		(r/min)	5000	
Moment of ine	rtia	Withou	t brake	3.68	
of rotor ($\times 10^{-4}$	kg·m²)	With I	orake	4.01	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute
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.

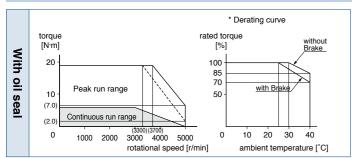
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

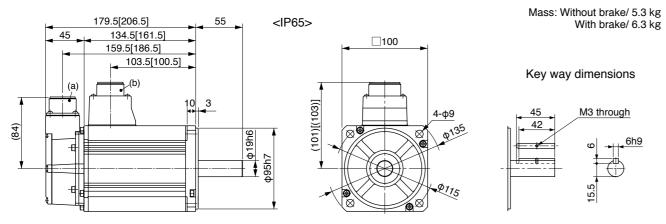
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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.137.)



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

[Unit: mm]

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

Specifications

			AC4	00 V	
		IP65		MSME304GC□	MSME304SC
Motor mode	9I ⊧1	IP67		MSME304G1□	MSME304S1
	Model	A5II, A5	series	MFD◇	T5440
Applicable driver	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	-
unven	F	rame sym	bol	F-fra	ame
Power supp	oly capacit	ty	(kVA)	4.	.5
Rated outp	ut		(W)	30	00
Rated torqu	ie		(N·m)	9.	55
Momentary	Max. pea	k torque	(N·m)	28.6	
Rated curre	ent	(A(rms))	9.2	
Max. current (A(o-p))			3	9	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)	DV0PM20049×2		No limit Note)2	
Rated rotat	ional spee	ed	(r/min)	3000	
Max. rotation	nal speed	i	(r/min)	5000	
Moment of	inertia	Without	brake	6.50	
of rotor (×1	0 ⁻⁴ kg·m²)	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	
Resolutio		n per sina	le turn	1048576	131072

400 V MSME 3.0 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.

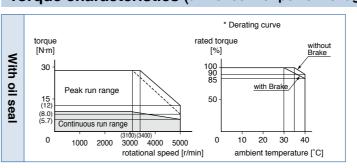
•	•
Static friction torque (N·m)	11.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

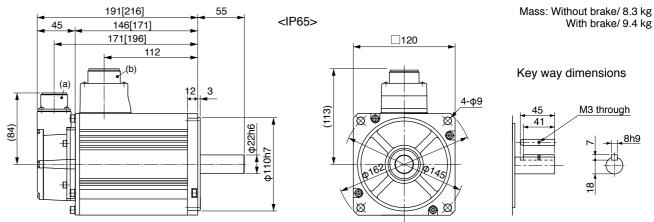
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \(\triangle\) 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
Matarasasas		IP65	MSME404GC□	MSME404SC□
Motor model *1		IP67	MSME404G1□	MSME404S1□
	Model	A5II, A5 series	MFD⇔	TA464
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	6	.8
Rated output		(W)	40	00
Rated torque		(N·m)	12	2.7
Momentary Ma	ax. peal	torque (N·m)	38.2	
Rated current		(A(rms))	9.9	
Max. current		(A(o-p))	4	2
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	nin) Note)1	DV0PM20049×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	3000	
Max. rotationa	l speed	(r/min)	4500	
Moment of ine	rtia	Without brake	12.9	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
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.

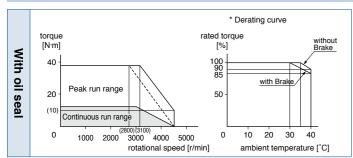
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

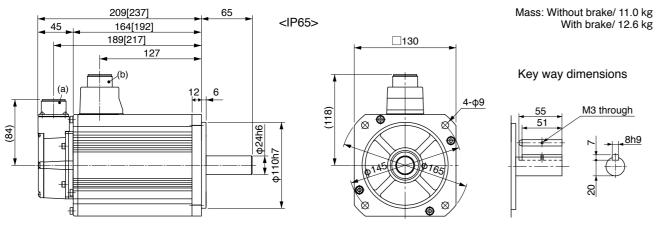
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



(a) Encoder connector

Dimensions

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

[Unit: mm]

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

Specifications

				AC4	00 V
Matanada		IP65		MSME504GC□	MSME504SC
Motor mode *	:1	IP67		MSME504G1□	MSME504S1
A 1: 1-1	Model	A5 I I, A5	series	MFD◇	TA464
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unvoi	Fı	ame sym	bol	F-fra	ame
Power supp	ly capacit	y	(kVA)	7.	.5
Rated outpu	ut		(W)	50	00
Rated torqu	е		(N·m)	15	i.9
Momentary	Max. pea	k torque	(N·m)	47.7	
Rated curre	nt	(A(rms))	12.0	
Max. current (A(o-p))			5	1	
Regenerative	e brake	Without	option	35	57
frequency (tim	es/min) Note)1	DV0PM20049×2		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	17.4	
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		18.6	
Recommended moment of inertia ratio of the load and the rotor Note)3		15 times	s or less		
Rotary enco	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
Resolution per single turn			1048576	131072	

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

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

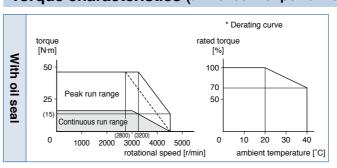
,	,
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

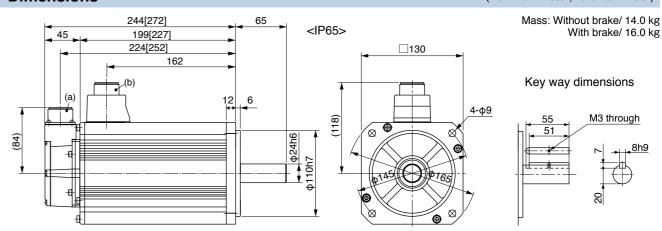
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- 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 \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]

			AC4	00 V	
Makanasadal		IP65		MDME044GC	MDME044SC
Motor model *1		IP67		MDME044G1	MDME044S1
Ammliaabla	Model	A5II, A5 s	series	MDD<	T2407
Applicable driver *2	No.	A5IIE, A5	E series	MDD ⊘T2407E	_
anver	Fr	ame symb	ool	D-fr	ame
Power supply	capacit	y	(kVA)	0	.9
Rated output			(W)	40	00
Rated torque			(N·m)	1.9	91
Momentary Ma	ax. peal	k torque	(N·m)	5.73	
Rated current		(A	A(rms))	1.2	
Max. current		(/	A(o-p))	4.9	
Regenerative b	rake	Without	option	No limi	t Note)2
frequency (times/r	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 bi	rake	1.93	
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 singl	e turn	1048576	131072

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

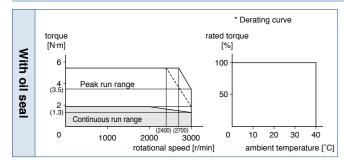
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

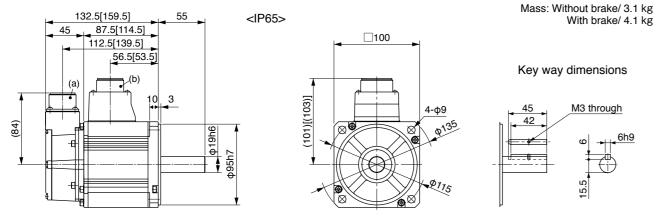
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

Torque characteristics (at 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.

111

[Unit: mm]

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

Specifications

				AC4	00 V
		IP65		MDME064GC	MDME064SC
Motor mod	ei *1	IP67		MDME064G1□	MDME064S1
Annlinable	Mode	A5II, A5	series	MDD<	T2407
Applicable driver	*2 No.	A5IIE, A	5E series	MDD ⊘T2407E	_
divei	ı	rame sym	ibol	D-fr	ame
Power sup	ply capac	ity	(kVA)	1.	.2
Rated outp	ut		(W)	60	00
Rated torqu	ne		(N·m)	2.	86
Momentary	Max. pe	ak torque	(N·m)	8.59	
Rated curre	ent	((A(rms))	1.5	
Max. curre	nt		(A(o-p))	6.5	
Regenerativ	ve brake	Without	toption	on No limit Note)2	
frequency (tir	mes/min) Note	DV0PM	120048	No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	2000	
Max. rotation	onal spee	d	(r/min)	3000	
Moment of	inertia	Withou	t brake	2.03	
of rotor (×10 ⁻⁴ kg·m ²)) With I	orake	2.35	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary enc	oder spec	cifications	Note)5	20-bit Incremental	17-bit Absolute
	Resoluti	on per sing	ale 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.

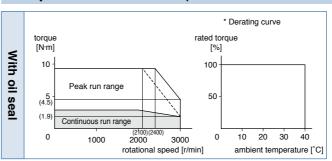
1 0	,
Static friction torque (N·m)	2.5 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.70±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

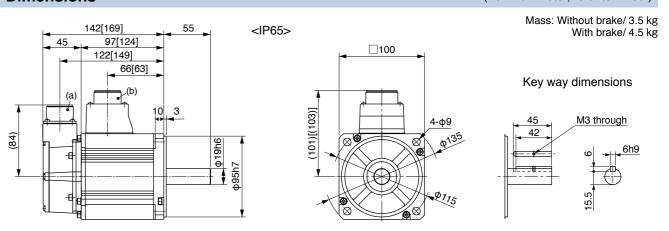
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A, B-direction (N)	196

- 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 \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]

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

Motor Specifications

A5 Family

Specifications

				AC4	00 V
Motor model		IP65		MDME104GC	MDME104SC
*1		IP67		MDME104G1□	MDME104S1
Annlinable	Model	del A5II, A5 series		MDD<	T2412
Applicable driver *2	No.	A5IIE, A5	E series	MDD \diamondsuit T2412E	_
unver	Fr	ame syml	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))		2.8			
Max. current (A(o-p))			12		
Regenerative brake Without option		option	No limit Note)2		
frequency (times/r	min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	4.60	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	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
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.

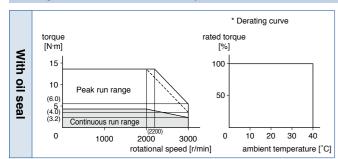
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

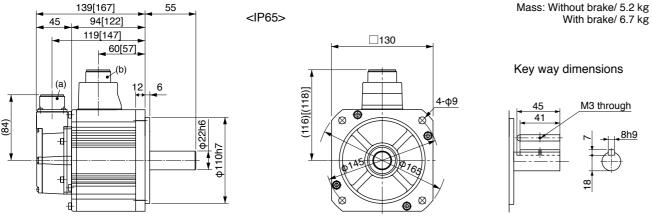
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

				AC4	00 V
Mataxaaal	-1	IP65		MDME154GC	MDME154SC
Motor mode	ÐI ⊭1	IP67		MDME154G1□	MDME154S1
A 1: 1- 1	Mode	A5II, A5	series	MDD<	T3420
Applicable driver	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	F	rame sym	bol	D-fra	ame
Power supp	oly capaci	ty	(kVA)	2.	.3
Rated outp	ut		(W)	15	00
Rated torqu	ıe		(N·m)	7.	16
Momentary	Max. pea	ık torque	(N·m)	21	.5
Rated curre	ent	(A(rms))	4.7	
Max. currer	nt		(A(o-p))	20	
Regenerativ	e brake	Without option		No limit Note)2	
frequency (tin	nes/min) Note)	DV0PM20048		No limit Note)2	
Rated rotat	ional spe	ed	(r/min)	2000	
Max. rotation	nal spee	d	(r/min)	3000	
Moment of	inertia	Without	t brake	6.70	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	orake	7.9	99
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less			
Rotary encoder specifications		ifications	Note)5	20-bit Incremental	17-bit Absolute
	Resoluti	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.

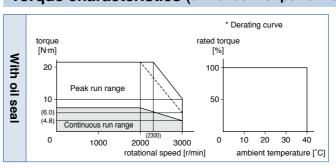
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

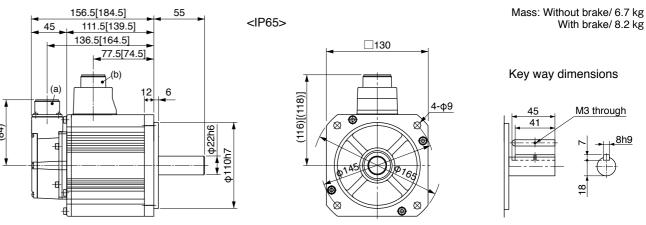
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
docombry	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- 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.138.)



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

[Unit: mm]

				AC4	00 V
Mataumandal		IP65		MDME204GC	MDME204SC
Motor model *1		IP67		MDME204G1	MDME204S1
Amalianda	Model	del A5II, A5 series		MED<	T4430
Applicable driver *2	No.	A5IIE, A5	E series	MED ⊘T4430E	-
anver	Fr	ame symb	ool	E-fra	ame
Power supply	capacit	у	(kVA)	3	.3
Rated output			(W)	20	00
Rated torque			(N·m)	9.55	
Momentary Ma	ax. peal	k torque	(N·m)	28.6	
Rated current (A(rms))		5.9			
Max. current		(A(o-p))	25	
Regenerative brake Without option		option	No limit Note)2		
frequency (times/r	nin) Note)1	DV0PM	20049	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	8.72	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	10.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	r speci	fications	Note)5	20-bit Incremental	17-bit Absolute
Re	esolutio	n per singl	e turn	1048576	131072

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

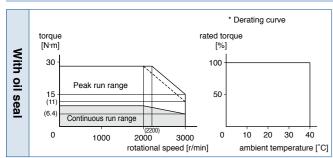
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

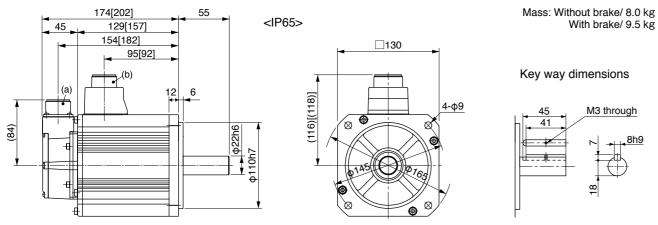
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

			AC4	00 V	
		IP65		MDME304GC□	MDME304SC
Motor mode *	•	IP67		MDME304G1□	MDME304S1
A L' l- L -	Model	A5 I I, A5	series	MFD◇	T5440
Applicable driver *	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	-
unven	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. current (A(o-p))			3	7	
Regenerative	e brake	Without	option	No limi	t Note)2
frequency (time	es/min) Note)1	DV0PM20049×2		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 b	orake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
Resolution per single turn			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.

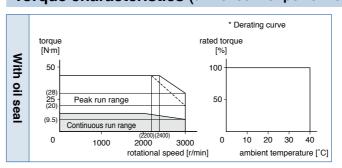
0 0
6.2 or more
110 or less
50 or less
0.90±10 %
2 or more
24±2.4

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

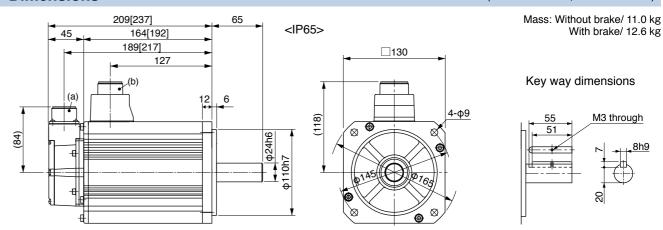
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	343

- 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 \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]

				AC4	00 V
Motor model	IP65		MDME404GC	MDME404SC	
Wiotor model		IP67		MDME404G1□	MDME404S1
Amaliaabla	Model	Model A5II, A5 series		MFD♦	TA464
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_
unver	Fı	ame symb	ool	F-fra	ame
Power supply	capacit	y	(kVA)	6	.8
Rated output			(W)	40	00
Rated torque			(N·m)	19.1	
Momentary Max. peak torque (N·m)			57.3		
Rated current		(A	A(rms))	10.6	
Max. current (A(o-p))			45		
Regenerative brake Without option			No limi	t Note)2	
frequency (times/min) Note)1 DV0PM20049×2		0049×2	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 b	rake	42.9	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute	
R	esolutio	n per singl	e turn	1048576	131072

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

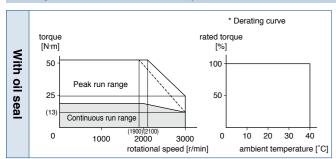
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

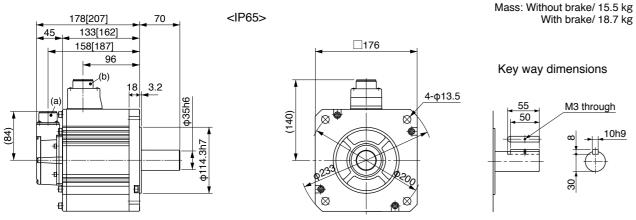
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable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

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



Dimensions

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



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

[Unit: mm]

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

Specifications

					AC4	00 V
			IP65		MDME504GC	MDME504SC
Motor mod	1 e l *1		IP67		MDME504G1	MDME504S1
		Model	A5II, A5	series	MFD◇	TA464
Applicable driver	*2	No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	_
unver	Ì	Fr	ame sym	bol	F-fra	ame
Power sup	ply o	capacit	у	(kVA)	7.	.5
Rated outp	out			(W)	50	00
Rated torq	ue			(N·m)	23	3.9
Momentary	у Ма	x. peal	k torque	(N·m)	71.6	
Rated current (A(rms))			13.0			
Max. current (A(o-p))			5	5		
Regenerati	ve b	rake	Without	option	12	20
frequency (ti	imes/m	nin) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rota	tiona	al spee	d	(r/min)	2000	
Max. rotati	ional	speed		(r/min)	3000	
Moment of	f iner	tia	Without	brake	48.0	
of rotor (x1	10-4	kg·m²)	With b	orake	53.3	
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 MDME 5.0 kW [Middle inertia, Middle capacity]

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

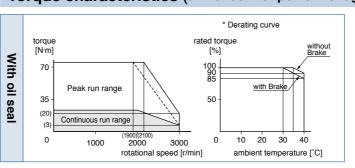
	•
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

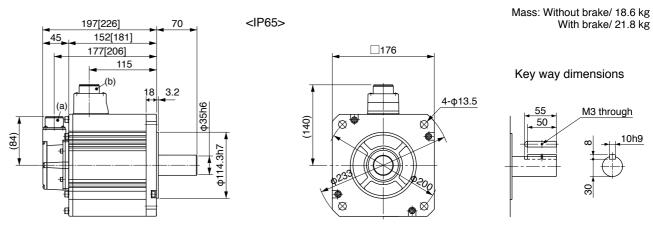
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
assembly	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

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



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



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

[Unit: mm]

				AC4	00 V
IP65		-	-		
Motor model *1		IP67		MDME754G1	MDME754S1
Amaliaabla	Model		eries	MGD◇	TB4A2
Applicable driver *2	No.	A5IIE, A5	E series	_	-
unver	Fr	rame symb	ol	G-fr	ame
Power supply	capacit	у	(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 brake Without option			No limi	t Note)2	
frequency (times/min) Note)1 DV0PM20049×3		0049×3	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 br	rake	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	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.

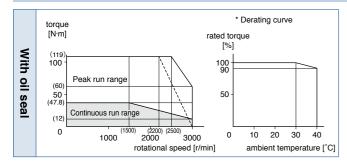
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

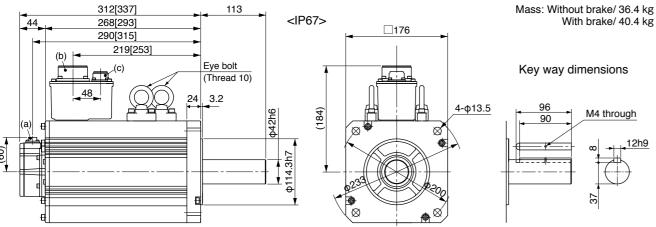
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
	Thrust load B-direction (N)	1176
During operation	Radial load P-direction (N)	1176
	Thrust load A, B-direction (N)	490

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

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

Dimensions are subject to change without notice. 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
N 4 - 4		IP65		-	-
Motor model		IP67		MDMEC14G1	MDMEC14S1
A II I. I .	Model	A5 I I, A5	series	MHD♦	TB4A2
Applicable driver *2	No.	A5IIE, A	5E series	-	_
unver	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 limi	t Note)2
frequency (time	es/min) Note)1	DV0PM20059		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	2	12
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		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.

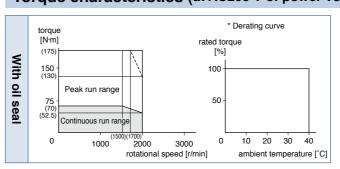
		,
Static friction	n torque (N·m)	100 or more
Engaging tim	ne (ms)	300 or less
Releasing tir	me (ms) Note)4	140 or less
Exciting curr	ent (DC) (A)	1.08±10 %
Releasing vo	oltage (DC) (V)	2 or more
Exciting volta	age (DC) (V)	24±2.4

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

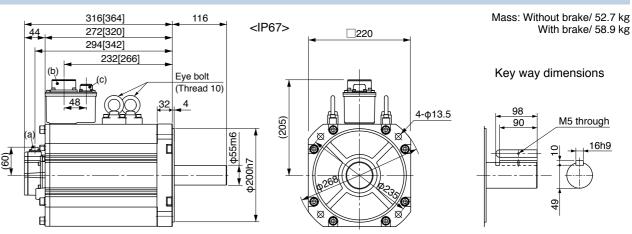
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
docombry	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

			AC4	00 V
IP65		-	-	
Motor model		IP67	MDMEC54G1	MDMEC54S1
A I' I. I .	Model	A5II, A5 series	MHD♦	TB4A2
Applicable driver *2	No.	A5IIE, A5E series	-	_
unvei	Fr	ame symbol	H-fr	ame
Power supply of	capacit	y (kVA)	2	2
Rated output		(W)	150	000
Rated torque		(N·m)	95	5.5
Momentary Ma	ax. peal	k torque (N·m)	224	
Rated current		(A(rms))	33.1	
Max. current (A(o-p))		118		
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/n	nin) Note)1	DV0PM20059 No limit Note		t Note)2
Rated rotations	al spee	d (r/min)	1500	
Max. rotational	speed	(r/min)	2000	
Moment of ine	rtia	Without brake	302	
of rotor (×10 ⁻⁴	kg·m²)	With brake	211	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encode	Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute
Re	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.

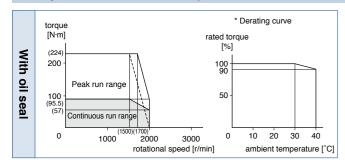
Static friction torque (N·m)	100 or more
Engaging time (ms)	300 or less
Releasing time (ms) Note)4	140 or less
Exciting current (DC) (A)	1.08±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

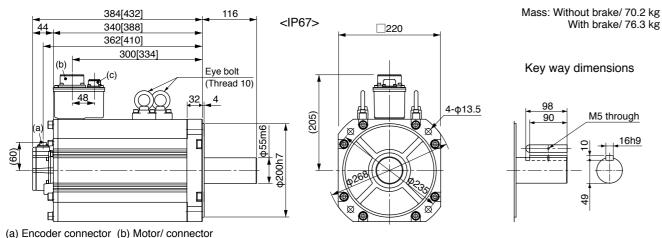
	Radial load P-direction (N)	4508
During assembly	Thrust load A-direction (N)	1470
assembly	Thrust load B-direction (N)	1764
During	Radial load P-direction (N)	2254
operation	Thrust load A, B-direction (N)	686

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

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



Dimensions



(c) Brake connector (only with brake)

* Figures in [] represent the dimensions with brake.

[Unit: mm]

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

Specifications

				AC4	00 V
M - t		IP65		-	-
Motor model		IP67		MFME154G1□	MFME154S1
A 15 1-1	Model	A5 I I, A5	series	MDD ⊘ T3420	
Applicable driver *2	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unven	Fr	ame sym	bol	D-fr	ame
Power supply	y capacit	y	(kVA)	2	.4
Rated output	t		(W)	15	00
Rated torque)		(N·m)	7.	16
Momentary M	√ax. peal	k torque	(N·m)	21.5	
Rated currer	nt	(A(rms))	3.8	
Max. current (A(o-p))		16			
Regenerative	brake	Without	option	100	
frequency (time	s/min) Note)1	DV0PM20048		No limit Note)2	
Rated rotation	nal spee	d	(r/min)	2000	
Max. rotation	al speed		(r/min)	3000	
Moment of in	ertia	Without brake		18.2	
of rotor (×10	⁻⁴ kg·m²)	With brake		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		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.

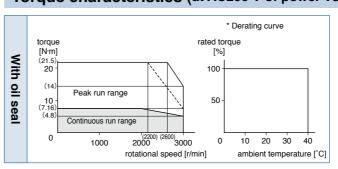
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	35 or less
Exciting current (DC) (A)	0.83±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

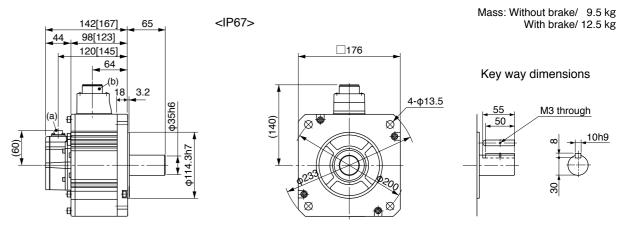
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

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



Dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

				AC4	00 V
IP65		-	-		
Motor model *1		IP67		MFME254G1□	MFME254S1
Amaliaalala	Model	A5II, A5 s	series	MED<	T4430
Applicable driver *2	No.	A5IIE, A5	E series	MED ⊘T4430E	_
divei	Fr	ame symb	ool	E-fra	ame
Power supply	capacit	у	(kVA)	3	.9
Rated output			(W)	25	00
Rated torque			(N·m)	11	.9
Momentary Ma	ax. peal	k torque	(N·m)	30.4	
Rated current		(A	A(rms))	6.7	
Max. current (A(o-p))			29		
Regenerative b	rake	Without option		75	
frequency (times/	min) Note)1	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 bi	rake	45.2	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	Rotary encoder specifications Note)5		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.

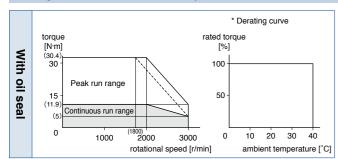
Static friction torque (N·m)	21.6 or more
1 \ /	
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

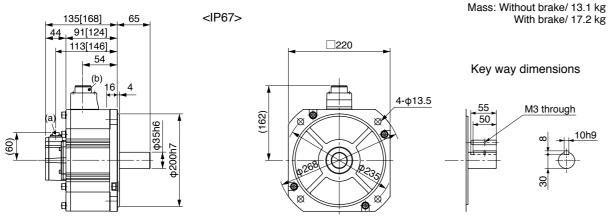
During assembly During	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
	Thrust load B-direction (N)	686
	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	294

- 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.

Specifications

				AC4	00 V	
		IP65		-	-	
Motor mod	ei *1	IP67		MFME454G1□	MFME454S1	
A I' l. I .	Mode	A5II, A5	series	MFD◇	TA464	
Applicable driver	*2 No.	A5IIE, A	5E series	MFD \diamondsuit TA464E	-	
unven	F	rame sym	bol	F-fra	ame	
Power sup	ply capaci	ty	(kVA)	6	.9	
Rated outp	ut		(W)	45	00	
Rated torqu	ne		(N·m)	21	.5	
Momentary	Max. pea	k torque	(N·m)	54.9		
Rated curre	ent	(A(rms))	12.4		
Max. curre	nt		(A(o-p))	53		
Regenerativ	ve brake	Without	option	67		
frequency (tir		e)1 DV0PM20049×2		375		
Rated rotat	ional spec	ed	(r/min)	20	2000	
Max. rotation	onal speed	d	(r/min)	3000		
Moment of	inertia	Without	brake	63.1		
of rotor (x1	0 ⁻⁴ kg·m²)	With b	orake	70.9		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
	on per sing	le turn	1048576	131072		

400 V MFME 4.5 kW Middle inertia, Middle capacity

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

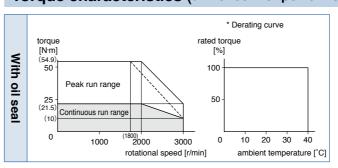
,	,
Static friction torque (N·m)	31.4 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	100 or less
Exciting current (DC) (A)	0.75±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

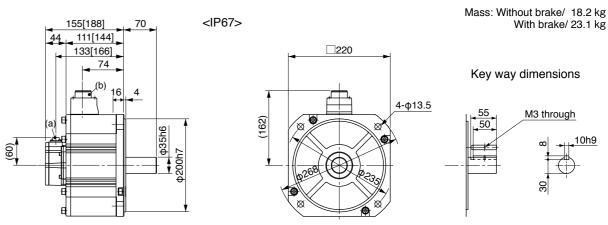
During assembly	Radial load P-direction (N)	1862
	Thrust load A-direction (N)	686
assembly	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	784
	Thrust load A, B-direction (N)	294

- 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.

[Unit: mm]

				AC4	00 V
Makananadal		IP65		MGME094GC□	MGME094SC
Motor model *1		IP67		MGME094G1□	MGME094S1
A 15 1-1	Model	A5II, A5	series	MDD<	T3420
Applicable *2	No.	A5IIE, A	5E series	MDD ⊘T3420E	-
unver	Fr	ame sym	ıbol	D-fra	ame
Power supply of	capacity	/	(kVA)	1.	.8
Rated output			(W)	90	00
Rated torque			(N·m)	8.8	59
Momentary Ma	x. peal	torque	(N·m)	19.3	
Rated current		((A(rms))	3.8	
Max. current			(A(o-p))	12	
Regenerative b	rake	Without	option	No limit Note)2	
frequency (times/m	nin) Note)1	DV0PM20048		No limit Note)2	
Rated rotations	al spee	d	(r/min)	1000	
Max. rotational	speed		(r/min)	2000	
Moment of iner	tia	Withou	t brake	6.70	
of rotor (×10 ⁻⁴ l	kg·m²)	With I	orake	7.99	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less		
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
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.

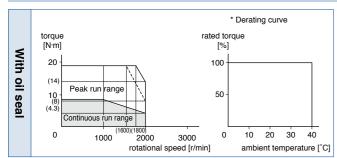
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

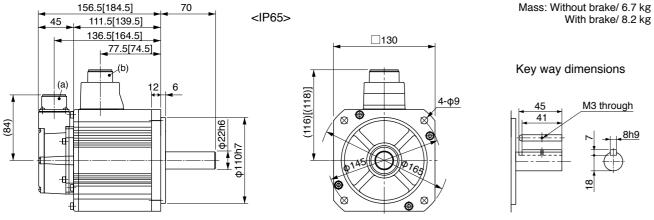
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3
 in number of applicable driver 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
Matanasalal			IP65		MGME204GC□	MGME204SC
Motor mode	ÐI ∗1		IP67		MGME204G1□	MGME204S1
A II l. l .		Model	A5 I I, A5	series	MFD◇	T5440
Applicable driver	¢2	No.	A5IIE, A	5E series	MFD \diamondsuit T5440E	-
unven		Fr	ame sym	bol	F-fra	ame
Power supp	oly c	apacit	y	(kVA)	3	.8
Rated outpo	ut			(W)	20	00
Rated torqu	ıe			(N·m)	19).1
Momentary	Ма	x. peal	k torque	(N·m)	47	'.7
Rated curre	ent		(A(rms))	8.5	
Max. currer	nt		((A(o-p))	30	
Regenerativ	e br	ake	Without	option	No limit Note)2	
frequency (tin	nes/m	in) Note)1	DV0PM2	V0PM20049×2 No limit		t Note)2
Rated rotat	iona	l spee	d	(r/min)	10	00
Max. rotation	onal	speed		(r/min)	2000	
Moment of	iner	tia	Without	brake	30.3	
of rotor (×1	0 ⁻⁴ ł	⟨g·m²)	With b	rake	35.6	
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less		
Rotary encoder specifications Note)5			Note)5	20-bit Incremental	17-bit Absolute	
Resolution per single tu				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.

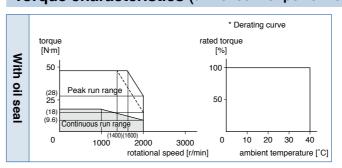
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

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

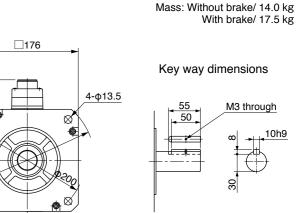
164.5[193.5]

45 119.5[148.5]

144.5[173.5]

82.5

(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>

A5 Family

Specifications

			AC4	00 V
		IP65	MGME304GC□	MGME304SC□
Motor model *1		IP67	MGME304G1□	MGME304S1
Amaliaalala	Model	A5II, A5 series	MFD<	TA464
Applicable driver *2	No.	A5IIE, A5E series	MFD \diamondsuit TA464E	_
anver	Fr	ame symbol	F-fr	ame
Power supply	capacit	y (kVA)	4	.5
Rated output		(W)	30	00
Rated torque		(N·m)	28	3.7
Momentary Ma	ax. peal	k torque (N·m)	71.7	
Rated current		(A(rms))	11.3	
Max. current		(A(o-p))	40	
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/r	min) Note)1	DV0PM20049×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	48.4	
of rotor ($\times 10^{-4}$	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.

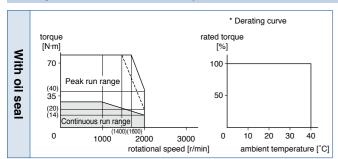
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

	Radial load P-direction (N)	2058
During assembly	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

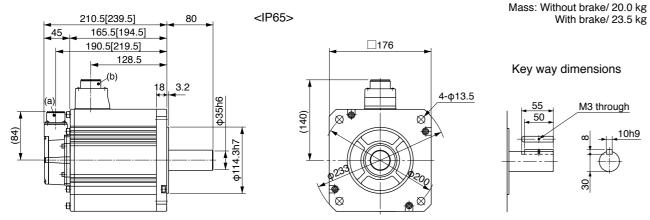
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver 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 -t		IP65		-	-
Motor mode	•	IP67		MGME454G1□	MGME454S1
A L' l- l -	Model	A5 I I, 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)	7.	.5
Rated outpu	ıt		(W)	45	00
Rated torqu	е		(N·m)	43	3.0
Momentary	Max. peal	k torque	(N·m)	107	
Rated current (A(rms))			14.8		
Max. current (A(o-p))			(A(o-p))	55	
Regenerative	e brake	Without	option	No limit Note)2	
frequency (tim	es/min) Note)1	DV0PM2	0049×2	No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	nertia	Without	brake	79.1	
of rotor (×10 ⁻⁴ kg·m²) With brake		84.4			
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times	s or less	
Rotary encoder specifications Note)5		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.

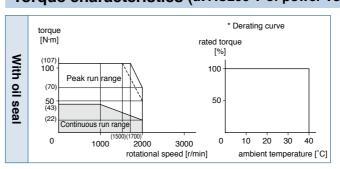
Otatia friation tonova (NI)	50.0
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

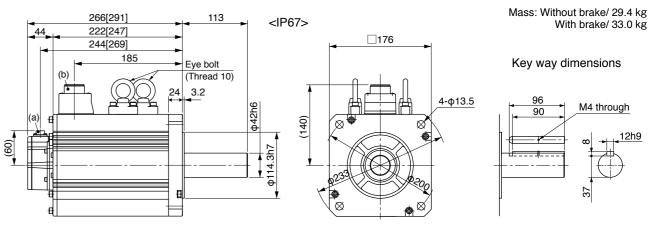
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



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

[Unit: mm]

				AC4	00 V
Motor model	IP65			-	-
*1		IP67		MGME604G1□	MGME604S1□
Amuliaalda	Model	A5II, A5	series	MGD♦	TB4A2
Applicable *2	No.	A5IIE, A5	5E series	_	_
unver	Fi	ame syml	bol	G-fr	ame
Power supply	capacit	y	(kVA)	9.	.0
Rated output			(W)	60	00
Rated torque			(N·m)	57	'.3
Momentary Max. peak torque (N·m)			143		
Rated current (A(rms))			19.4		
Max. current (A(o-p))			74		
Regenerative	Regenerative brake Without option		No limit Note)2		
frequency (times	min) Note)1	DV0PM2	0049×3	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	1000	
Max. rotationa	al speed		(r/min)	2000	
Moment of ine	ertia	Without	brake	101	
of rotor (×10 ⁻²	or (×10 ⁻⁴ kg·m²) With brake		rake	107	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less	
Rotary encod	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.

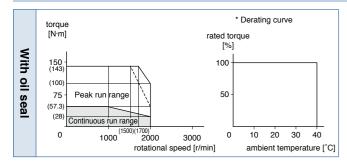
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

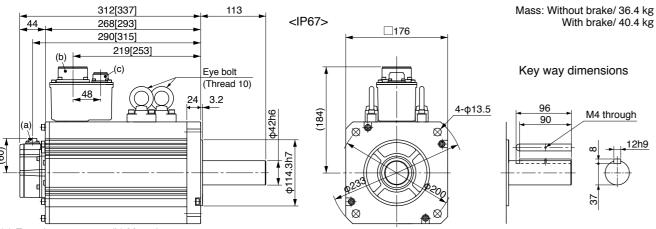
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1764
operation	Thrust load A, B-direction (N)	588

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

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



Dimensions



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

[Unit: mm]

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

Specifications

				AC4	00 V
Mata a da		IP65		MHME104GC	MHME104SC
Motor mode *		IP67		MHME104G1□	MHME104S1
A II In I .	Model	A5 I I, A5	series	MDD<	T2412
Applicable driver **	No.	A5IIE, A	5E series	MDD \diamondsuit T2412E	-
unver	Fr	ame sym	bol	D-fr	ame
Power suppl	y capacit	y	(kVA)	1.	.8
Rated outpu	t		(W)	10	00
Rated torque	Э		(N·m)	4.	77
Momentary I	Max. peal	k torque	(N·m)	14.3	
Rated currer	nt	(A(rms))	2.9	
Max. current (A(o-p))		12			
Regenerative	e brake	Without	option	83	
frequency (time	es/min) Note)1	DV0PM20048		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	24.7	
of rotor (×10 ⁻⁴ kg·m²) With brake		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	
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.

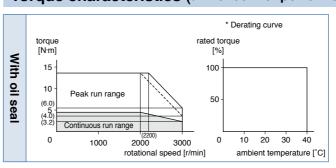
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

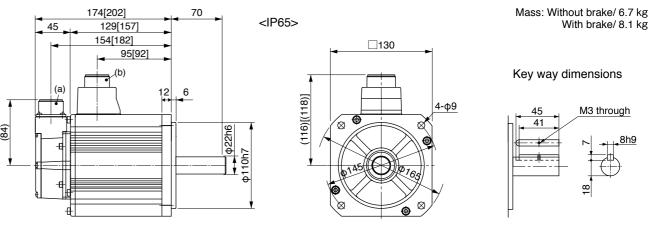
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

			AC4	00 V
Matanasadal	IP65		MHME154GC	MHME154SC
Motor model *1		IP67	MHME154G1□	MHME154S1
Ammliaalala	Model	A5II, A5 series	MDD<	T3420
Applicable driver *2	No.	A5IE, A5E series	MDD ⊘T3420E	-
divei	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 Ma	ax. peal	k torque (N·m)	21.5	
Rated current		(A(rms))	4.7	
Max. current		(A(o-p))	20	
Regenerative b	rake	Without option	22	
, 10 30 110 110 110 110 110 110 110 110 1		DV0PM20048	130	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	37.1	
of rotor ($\times 10^{-4}$	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 encoder specifications Note)5		20-bit Incremental	17-bit Absolute	
R	esolutio	n per single turn	1048576	131072

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

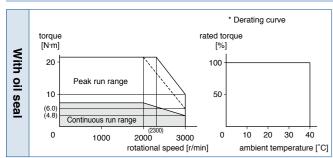
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

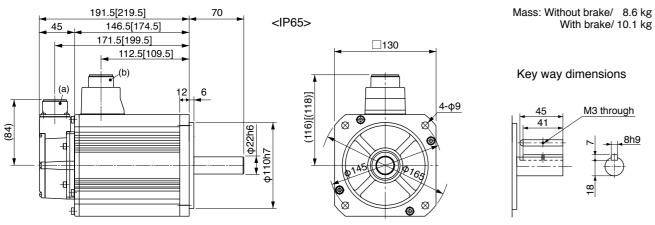
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.44.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver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

Torque characteristics (at 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.

131

[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 mod	1€I ∗1		IP67		MHME204G1□	MHME204S1	
A		Model	A5II, A5 series		MED<	T4430	
Applicable driver	*2	No.	A5IIE, A	5E series	MED ⊘T4430E	-	
unven		Fr	ame sym	bol	E-fra	ame	
Power sup	ply (capacity	y	(kVA)	3	.3	
Rated outp	out			(W)	20	00	
Rated torq	ue			(N·m)	9.	55	
Momentary	у Ма	ax. peal	k torque	(N·m)	28.6		
Rated curr	ent		(A(rms))	5.5		
Max. curre	nt		((A(o-p))	24		
Regenerati	ve b	rake	Without option		45		
frequency (ti			DV0PM20048		142		
Rated rota	tiona	al spee	d	(r/min)	2000		
Max. rotati	ona	speed		(r/min)	3000		
Moment of	ine	rtia	Without brake		57.8		
of rotor (x1	0-4	kg·m²)	With brake		59.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times or less					
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute			
Resolution			n per sing	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.

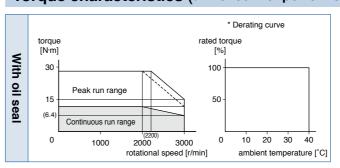
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4
_

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

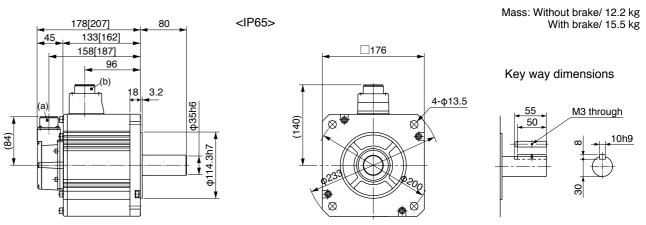
Radial load P-direction (N)	1666
Thrust load A-direction (N)	784
Thrust load B-direction (N)	980
Radial load P-direction (N)	784
Thrust load A, B-direction (N)	343
	Thrust load A-direction (N) Thrust load B-direction (N) Radial load P-direction (N)

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



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

132

[Unit: mm]

			AC400 V		
Motor model		IP65	MHME304GC□	MHME304SC	
*1		IP67	MHME304G1□	MHME304S1□	
Annlinahla	Model	A5II, A5 series	MFD ⊘ T5440		
Applicable *2	No.	A5IIE, A5E series	MFD \diamondsuit T5440E	_	
divoi	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	4.	.5	
Rated output		(W)	30	00	
Rated torque		(N·m)	14	1.3	
Momentary Ma	ax. peal	k torque (N·m)	43.0		
Rated current		(A(rms))	8.0		
Max. current		(A(o-p))	34		
Regenerative b	rake	Without option	19		
frequency (times/	min) Note)1	DV0PM20049×2	142		
Rated rotation	al spee	d (r/min)	2000		
Max. rotationa	l speed	(r/min)	3000		
Moment of ine	rtia	Without brake	90.5		
of rotor (×10 ⁻⁴	kg·m²)	With brake	92.1		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		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.

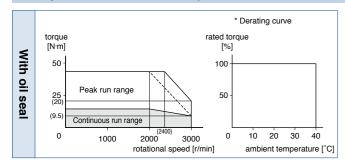
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

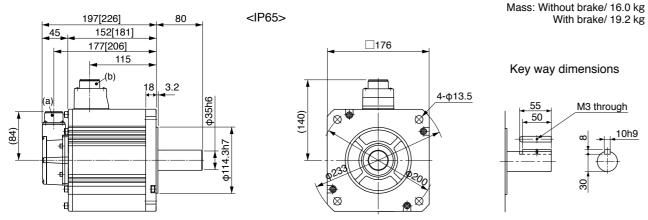
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 \diamondsuit in number of applicable 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		
Matanaaaalal		IP65		MHME404GC	MHME404SC	
Motor model		IP67		MHME404G1□	MHME404S1	
Amuliaabla	Model	A5II, A5 series		MFD◇	TA464	
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	-	
divoi	Fr	rame sym	bol	F-fra	ame	
Power suppl	y capacit	у	(kVA)	6	.8	
Rated output	t		(W)	40	00	
Rated torque)		(N·m)	19).1	
Momentary N	Max. peal	k torque	(N·m)	57.3		
Rated currer	nt	(A(rms))	10.5		
Max. current		((A(o-p))	45		
Regenerative	brake	Without	option	17		
frequency (time	s/min) Note)1	DV0PM20049×2		125		
Rated rotation	nal 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		114		
Recommended moment of inertia ratio of the load and the rotor Note)3		5 times	or less			
Rotary enco	der speci	fications	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.

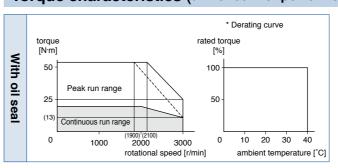
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
doscinory	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 ♦ 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

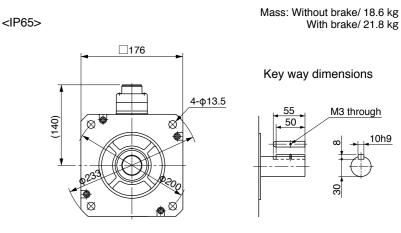
Dimensions

210.5[239.5]

190.5[219.5]

165.5[194.5]

(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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			AC400 V			
IP65				MHME504GC	MHME504SC	
Motor model *1		IP67		MHME504G1□	MHME504S1	
	Model	A5II, A5 series		MFD♦	TA464	
Applicable driver *2	No.	A5IIE, A5E series		MFD \diamondsuit TA464E	_	
unver	Fı	ame symb	ol	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. pea	k torque	(N·m)	71.6		
Rated current		(A	(rms))	13.0		
Max. current (A(o-p))			A(o-p))	55		
Regenerative b	rake	Without o	ption	10		
frequency (times/i	min) Note)1	DV0PM20	049×2	76		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine	rtia	Without I	brake	162		
of rotor ($\times 10^{-4}$	kg·m²)	With br	ake	164		
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		
R	esolutio	n per single	e turn	1048576	131072	

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

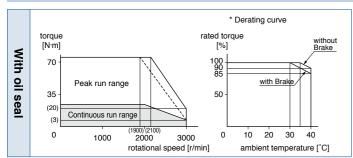
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

• 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

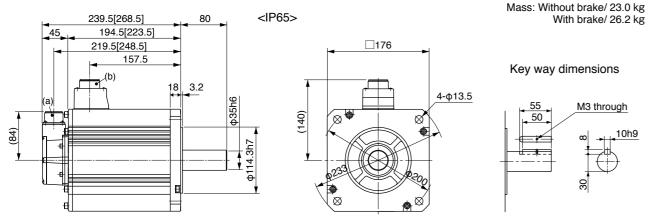
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.16.
- *3 O in number of applicable driver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

Torque characteristics (at 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	
M-4	-1	IP65		-	-
Motor mode	€I *1	IP67		MHME754G1□	MHME754S1
	Model	A5 I I, A5	series	MGD♦	TB4A2
Applicable driver	*2 No.	A5IIE, A	5E series	-	-
unven	F	rame sym	bol	G-fr	ame
Power supp	oly capacit	у	(kVA)	9	.0
Rated outp	ut		(W)	75	00
Rated torqu	ıe		(N·m)	47	'.8
Momentary	Max. pea	k torque	(N·m)	119	
Rated curre	ent	(A(rms))	22.0	
Max. currer	nt	((A(o-p))	83	
Regenerativ	e brake	Without	option	No limi	t Note)2
frequency (tin	nes/min) Note)	DV0PM2	0049×3	No limit Note)2	
Rated rotat	ional spee	d	(r/min)	1500	
Max. rotation	onal speed	I	(r/min)	3000	
Moment of	inertia	Without	brake	273	
of rotor (×1	0 ⁻⁴ kg·m²)	With b	rake	279	
Recommen ratio of the			tia Note)3	5 times	or less
Rotary encoder specifications		Note)5	20-bit Incremental	17-bit Absolute	
	Resolution	n per sing	le 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.

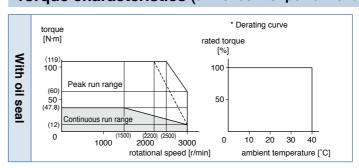
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4
Exciting current (DC) (A) Releasing voltage (DC) (V)	1.4±10 % 2 or more

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

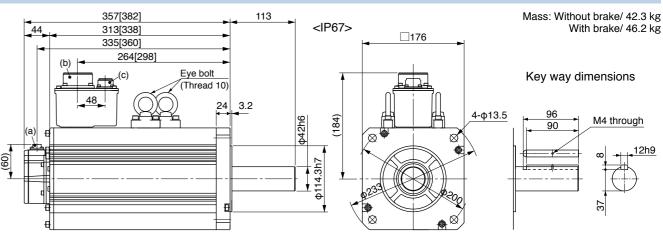
During assembly	Radial load P-direction (N)	2058
	Thrust load A-direction (N)	980
accombiy	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1176
operation	Thrust load A, B-direction (N)	490

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

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



Dimensions



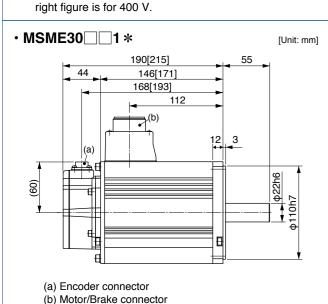
- (a) Encoder connector (b) Motor/ connector
- (c) Brake connector (only with brake)
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

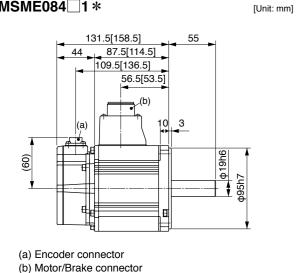
A5 Family

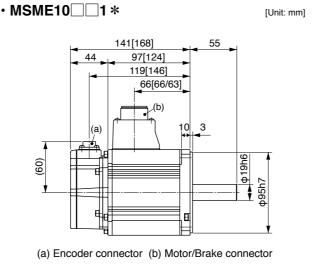
[Unit: mm]

- * Figures in [] represent the dimensions with brake. MSME15□□1*
- [Unit: mm] 159.5[186.5] 115.5[142.5] 137.5[164.5] 84.5[84.5/81.5]
 - (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and



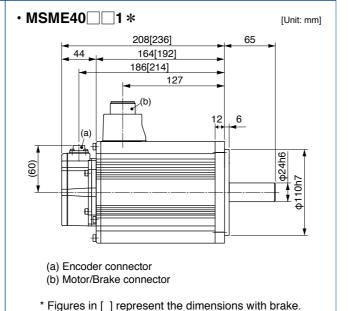
* Figures in [] represent the dimensions with brake.

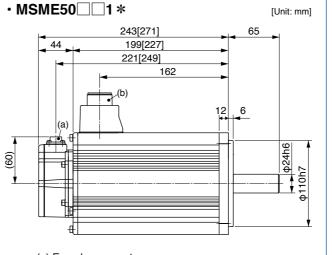




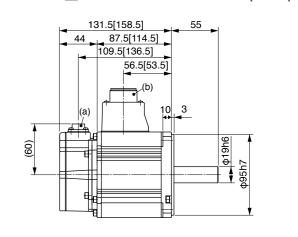
IP67 motor (MSME 200 V/ 400 V type)

- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.
- MSME20□□1* [Unit: mm] 178.5[205.5] 134.5[161.5] 156.5[183.5] 103.5[103.5/100.5]
 - (a) Encoder connector (b) Motor/Brake connector * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.





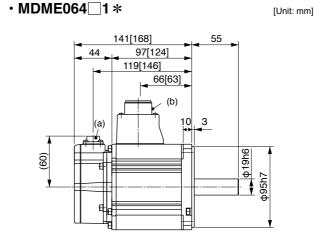
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



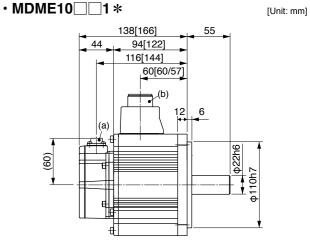
(a) Encoder connector

• MDME044 □ 1 *

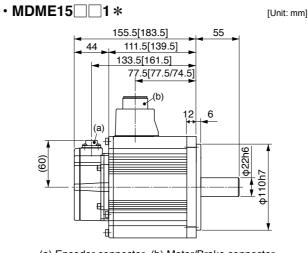
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



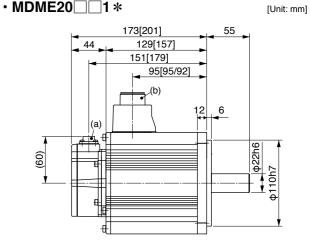
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.



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



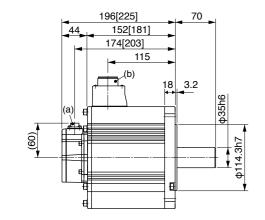
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [] ,left figure is for 200 V and right figure is for 400 V.

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

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

[Unit: mm]

- (a) Encoder connector
 (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.
- MDME50 1 * [Unit: mm]



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

- (09)
 - (a) Encoder connector

MGME09□□1 *

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

MDME40□□1*

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

177[206]

133[162]

155[184]

[Unit: mm]

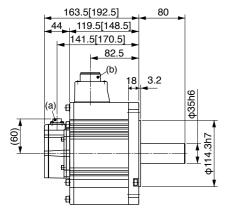
[Unit: mm]

[Unit: mm]

155.5[183.5] 70 44 111.5[139.5] 133.5[161.5] 77.5[77.5/74.5] (b) (a) 12 6

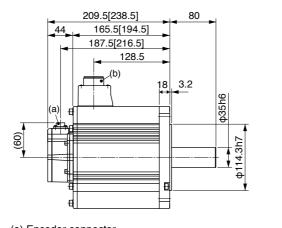
- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [], left figure is for 200 V and right figure is for 400 V.

• MGME20 1 * [Unit: mm]



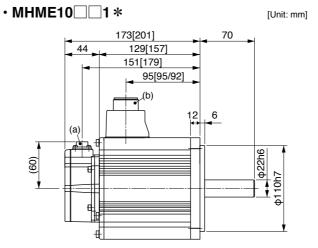
- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

MGME30□□1 *

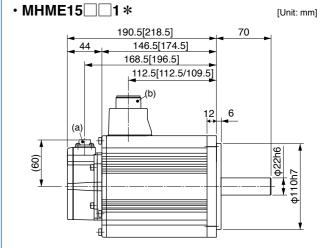


- (a) Encoder connector
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

* For motor specifications, refer to IP65 motor page.

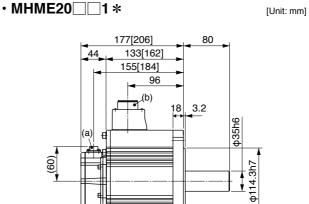


- (a) Encoder connector (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake. If you find two figures in [],left figure is for 200 V and right figure is for 400 V.



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

3.2



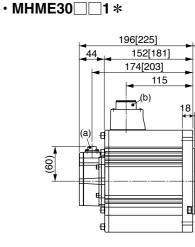
(a) Encoder connector

MHME40 □ □ 1 *

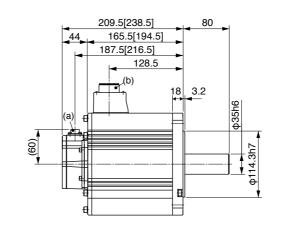
- (b) Motor/Brake connector
- * Figures in [] represent the dimensions with brake.

[Unit: mm]

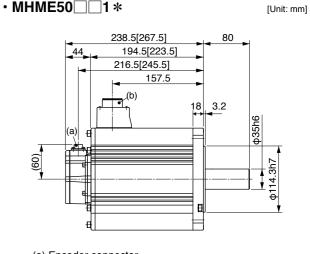
140



- (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.

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

Motor rated output

Motor Types with Gear Reducer

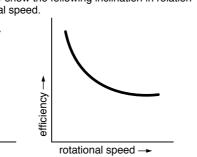


Type and Specifications

Reduction		Motor ou	tput (W)		Type of
ratio	100	200	400	750	reducer
1/5	•	•	•	•	
1/9	•	•	•	•	For high
1/15	•	•	•	•	precision
1/25	•	•	•	•	

^{*} MHMD 100 W is not prepared.

Efficiency of the gear reducer show the following incl	ination in relation
to output torque and rotational speed.	



Specifications of Motor with Gear Reducer

	Items	Specifications	
	Backlash	3 minutes or smaller (initial value) at output shaft of the reducer	
	Composition of gear	Planetary gear	
	Gear efficiency	65 % to 85 %	
0	Lubrication	Grease lubrication	
Gear reducer	Rotational direction at output shaft	Same direction as the motor output shaft	
	Mounting method	Flange mounting	
	Permissible moment of inertia of the load (conversion to the motor shaft)	10 times or smaller than rotor moment of inertia of the motor	
	Protective structure	IP44 (at gear reducer)	
	Ambient temperature	0 °C to 40 °C (free from condensation)	
F in a second	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	

output torque -

M S M

Symbol Type Symbol Specifications Low inertia 100 W MSMD 100 W to 750 W 02 200 W Low inertia 04 400 W MSME 100 W to 750 W 80 750 W High inertia MHMD 200 W to 750 W

Voltage specifications Rated output

100 V 2 200 V

The Combination of the Driver and the Motor with gear reducer

100 V

Rotary encoder specifications

* S: can be used in incremental.

Motor

output

750 W

Model Designation

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

olution	Wire
48576	5
31072	7

Single phase, 100 V

Motor types with gear reducer

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

^{*} MHMD 100 W is not prepared.

Motor structure

Part No. of motor

MSME082 N

MSMD082 N

MHMD082 N

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

200 V

Single/3-phase, 200 V

MBDKT2510E

MCDHT3520

MCDKT3520

MCDHT3520E

MCDKT3520E

Part No. of motor

	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver
100 W	MSME011 - N MSMD011 - N	MADHT1107 MADKT1107	MSME012 N MSMD012 N	MADHT1505 MADKT1505
		MADHT1107E MADKT1107E		MADHT1505E MADKT1505E
200 W	MSME021 N MSMD021 N MHMD021 N	MBDHT2110 MBDKT2110	MSME022 N MSMD022 N MHMD022 N	MADHT1507 MADKT1507
		MBDHT2110E MBDKT2110E		MADHT1507E MADKT1507E
400 W	MSME041	MCDHT3120 MCDKT3120	MSME042 _ _ N MSMD042 _ _ N MHMD042 _ _ N	MBDHT2510 MBDKT2510
		MCDHT3120E		MBDHT2510E

MCDKT3120E

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

Torque Characteristics of Motor

Table of Motor Specifications

	Model	Motor Output	Reduction ratio	Output	Rated speed	Max. speed	Rated torque	Peak max. torque	(motor +	of inertia reducer/ erted or shaft)		NSS		Permissible thrust load
		(w)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J(×10 ⁻⁴			g)	(N)	(N)
	MSME01	(**)	1/5	75	600	1200	1.18	3.72	0.091	0.094	1.0	1.2	490	245
	MSME01 2N	_	1/9	80	333	666	2.25	6.86	0.0853	0.0883	1.0	1.2	588	294
	MSME01 3N	100	1/15	80	200	400	3.72	11.4	0.086	0.089	1.15	1.35	784	392
	MSME01 AN	-	1/25	80	120	240	6.27	19.0	0.0885	0.0915	2.15	2.35	1670	833
	MSME02 1N		1/5	170	600	1200	2.65	8.04	0.258	0.278	1.5	1.92	490	245
2	MSME02 DD 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
No.	MSME04		1/5	340	600	1200	5.39	16.2	0.623	0.643	2.9	3.3	980	490
Low inertia	MSME04 CC 2N		1/9	332	333	666	9.51	28.5	0.528	0.548	2.9	3.3	1180	588
rtia	MSME04 3N	400	1/15	332	200	400	15.8	47.5	0.56	0.58	3.3	3.7	1470	735
	MSME04		1/25	332	120	240	26.4	79.2	0.56	0.58	4.4	4.8	2060	1030
	MSME082 1N		1/5	672	600	1200	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSME082 2N		1/9	635	333	666	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSME082 3N	750	1/15	635	200	400	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSME082 □□ 4N		1/25	635	120	240	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MSMD01		1/5	75	600	1000	1.18	3.72	0.091	0.094	1.02	1.23	490	245
	MSMD01 2N	-	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		1/5	170	600	1000	2.65	8.04	0.258	0.278	1.54	2.02	490	245
3	MSMD02 2N	-	1/9	132	333	555	3.72	11.3	0.408	0.428	2.52	3	1180	588
MSMD	MSMD02 3N	200	1/15	132	200	333	6.27	18.8	0.44	0.46	2.92	3.4	1470	735
	MSMD02 4N	-	1/25	140	120	200	11.1	33.3	0.428	0.448	2.92	3.4	1670	833
Low iner	MSMD04		1/5	340	600	1000	5.39	16.2	0.623	0.643	2.9	3.4	980	490
ine	MSMD04 🗆 🗆 2N		1/9	332	333	555	9.51	28.5	0.528	0.548	2.9	3.4	1180	588
I ia	MSMD04 🗆 🗆 3N	400	1/15	332	200	333	15.8	47.5	0.56	0.58	3.3	3.8	1470	735
	MSMD04 □□□ 4N	-	1/25	332	120	200	26.4	79.2	0.56	0.58	4.4	4.9	2060	1030
	MSMD082 □□ 1N		1/5	672	600	900	10.7	32.1	1.583	1.683	4.4	5.2	980	490
	MSMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	1.52	1.62	5.7	6.5	1470	735
	MSMD082 □□ 3N	750	1/15	635	200	300	30.4	91.2	1.57	1.67	6.1	6.9	1760	882
	MSMD082 □□ 4N		1/25	635	120	180	50.7	152	1.52	1.62	6.1	6.9	2650	1320
	MHMD02 🗆 🗆 1N		1/5	170	600	1000	2.65	8.04	0.538	0.568	1.68	2.12	490	245
	MHMD02 🗆 🗆 2N	200	1/9	132	333	555	3.72	11.3	0.688	0.718	2.66	3.1	1180	588
	MHMD02 🗆 🗆 3N	200	1/15	132	200	333	6.27	18.8	0.72	0.75	3.06	3.5	1470	735
₹	MHMD02 🗆 🗆 4N		1/25	140	120	200	11.1	33.3	0.708	0.738	3.06	3.5	1670	833
MHMD	MHMD04 🗆 🗆 🗆 1N		1/5	340	600	1000	5.39	16.2	1.033	1.063	3.1	3.5	980	490
Ŧ	MHMD04 🗆 🗆 2N	400	1/9	332	333	555	9.51	28.5	0.938	0.968	3.1	3.5	1180	588
igh	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
iti a	MHMD082 □□ 1N		1/5	672	600	900	10.7	32.1	2.223	2.323	4.6	5.4	980	490
	MHMD082 □□ 2N	750	1/9	635	333	500	18.2	54.7	2.16	2.26	5.9	6.7	1470	735
	MHMD082 □□ 3N	750	1/15	635	200	300	30.4	91.2	2.21	2.31	6.3	7.1	1760	882
	MHMD082 □□ 4N		1/25	635	120	180	50.7	152	2.16	2.26	6.3	7.1	2650	1320

Table of Motor Specifications

MSM	E series	(100 W to 750 W)			
Supply voltage to driver	Reduction ratio	1/5	1/9	1/15	1/25
	100 W	MSME011 1N torque [N·m] 4.0 Peak run range Continuous run range 0 500 1000 rotational speed [//min]	MSME011 2N torque [N·m] 8.0 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME011 3N torque [N·m] 16.0 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MSME011 4N torque [N-m] 20 Peak run range 10 Continuous run range 0 100 200 rotational speed [r/min]
100 V	200 W	MSME021 1N torque [N-m] 8.0 Peak run renge 4.0 Continuous run range 0 500 1000 rotational speed [r/min]	MSME021 2N torque [N-m] 16.0 Peak run range. Continuous run range 0 400 800 rotational speed [r/min]	MSME021 3N torque [N-m] 20 Peak run range 0 200 400 rotational speed [r/min]	MSME021 4N torque [N·m] 40 Peak run range 20 Continuous run range 0 100 200 rotational speed [r/min]
	400 W	MSME041 1N torque [N·m] 20 Peak run range Continuous run range 0 500 10000 rotational speed [//min]	MSME041 2N torque [N·m] 40 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME041 3N torque [N·m] 60 Peak run range Continuous run range 0 200 400 rotational speed [//min]	MSME041 4N torque [N-m] 80 Peak run range 40 Continuous run tange 0 100 200 rotational speed [r/min]
	100 W	MSME012 1N torque [N·m] 4.0 Peak run range 2.0 Continuous run tange 0 500 1000 rotational speed [//min]	MSME012 2N torque [N-m] 8.0 Peak run range 4.0 Continuous run range 0 400 800 rotational speed [r/min]	MSME012 3N torque [N-m] 16.0 Peak run range 0 200 400 rotational speed [r/min]	MSME012 4N torque [N-m] 20 Peak run range 10 Continuous tun range 0 100 200 rotational speed [r/min]
	200 W	MSME022 1N torque [N·m] 8.0 Peak run range 4.0 Continuous run tange 0 500 1000	MSME022 2N torque [N·m] 16.0 Peak run range Continuous run ranga 0 400 rotational speed [r/min]	MSME022 3N torque [N·m] 20 Peak run range Continuous run range 0 200 400	MSME022 4N torque [N·m] 40 Peak run range 20 Continuous tun range 0 100 200
200 V	400 W	MSME042 1N torque [N-m] Peak run range Continuous tun tange 500 1000 rotational speed [r/min]	MSME042 2N torque [N·m] 40 Peak run range 0 400 800 rotational speed [r/min]	rotational speed [r/min] MSME042 3N torque [N-m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	rotational speed [r/min] MSME042 4N torque [N-m] 80 Peak run range 40 Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MSME082 1N torque [N·m] 40 Peak run range Continuous run range Totational speed [r/min]	MSME082 2N torque [N-m] 80 Peak run range Continuous run range 0 400 800 rotational speed [r/min]	MSME082 3N torque [N·m] 120 Peak run tange Continuous run range 0 200 400 rotational speed [r/min]	MSME082 4N torque [N·m] 160 Peak run range 80 Continuous run range 0 100 200 rotational speed [r/min]

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

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

MSMD series (100 W to 750 W) Supply voltage to driver Motor output 1/5 1/9 1/15 1/25 MSMD011□□2N MSMD011□□3N MSMD011□□1N MSMD011 24N 100 W MSMD021□□1N MSMD021 2N MSMD021□□3N MSMD021□□4N 100 V 200 W MSMD041□□1N MSMD041□□2N MSMD041 □ □ 3N MSMD041 □ □ 4N 400 W MSMD012 1N MSMD012 2N MSMD012 3N MSMD012 4N 100 W MSMD022 1N MSMD022 2N MSMD022 3N MSMD022 4N 200 W 200 V MSMD042 3N MSMD042 1N MSMD042 2N MSMD042 4N 400 W $MSMD082 \square \square 3N$ MSMD082□□2N MSMD082□□1N MSMD082 4N 750 W

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

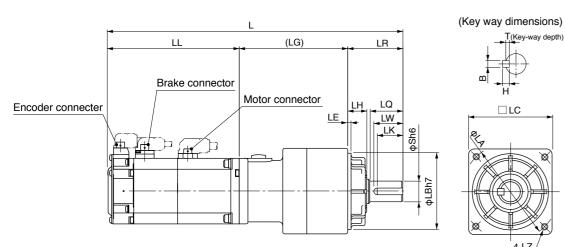
MHM	D series	(200 W to 750 W)			
Supply voltage to driver	Reduction ratio Motor output	1/5	1/9	1/15	1/25
100 V	200 W	MHMD021 1N torque [N·m] 8.0 Peak run range 0 500 1000 rotational speed [r/min]	MHMD021 2N torque [N-m] 16.0 Peak run fange run fange 0 400 800 rotational speed [r/min]	MHMD021 3N torque [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 00 200 rotational speed [r/min]
	200 W	MHMD022 1N torque [N·m] 8.0 Peak rur range 4.0 Contihuous run range 0 500 1000 rotational speed [r/min]	MHMD022 2N torque [N·m] 16.0 Peak run tange Continuous run jange 0 400 800 rotational speed [r/min]	MHMD022 3N torque [N·m] 20 Peak run tange Contiruous 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 [//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 Paak run range Continuous run range 0 400 800 rotational speed [r/min]	MHMD042 3N torque [N-m] 60 Peak run range Continuous run range 0 200 400 rotational speed [r/min]	MHMD042 4N torque [N·m] 80 Peak run range Continuous run range 0 100 200 rotational speed [r/min]
	750 W	MHMD082 1N torque [N·m] 40 Peak run range Continuous run range 0 500 1000 cratinual speed [r/min]	MHMD082 2N torque [N·m] 80 Pelak \ \ \ run range \ \ \ run range \ \ \ run range \ \ run range \ \ \ run range \ run ran	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 containing speed (fmin)

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

Dimensions of Motor

[Unit: mm]

□LC

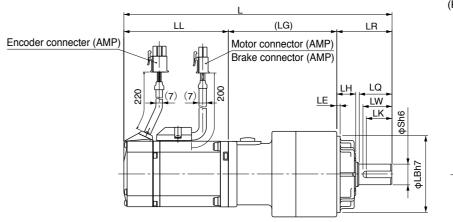


* The figure represents the dimensions with brake.

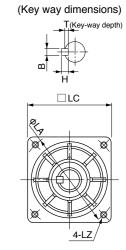
Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т	
MSME01		1 /E	191.5	92														
		1/5	221.5	122										67.5				
MSME01□□□2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	07.5		4×4×16	2.5	
IIIOIIIEO I	100	170	221.5	122	02	20	52	30		12	10	12	10			424210	2.0	
MSME01 3N	100	1/15	202	92										78				
			232	122														
MSME01		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5	
			264	122								20						
MSME02□□□1N		1/5	184	79.5	32	20	52	50	60	12	10	M5 Depth	18	72.5		4×4×16	2.5	
		_	220.5	116								12						
MSME02 2N		1/9	219	79.5										89.5	3			
	200		255.5	116														
MSME02□□□3N		1/15	229.5	79.5														
			266	116										100				
MSME02 4N		1/25	229.5 266	79.5 116								M6						
			238.5	99	50	30	78	70	90	19		Depth	26	26			6×6×22	3.5
MSME04		1/5	275	135.5								20						
			238.5	99											89.5			
MSME04□□□2N		1/9	275	135.5														
	400		249	99														
MSME04□□□3N		1/15	285.5	135.5										100				
			264	99								M8						
MSME04 U 4N		1/25	300.5	135.5	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4	
			255.7	112.2								M6						
MSME082□□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														
MSME082 2N	750	1/9	306.7	148.2										97.5				
MCMEOGO	750	750	283.2	112.2	C4	40	00	00	44.5	04	40	M8	0.5		_	0700		
MSME082 3N		1/15	319.2	148.2	61	40	98	90	115 2	24		Depth 20	35	110	5	8×7×30	4	
MSME082□□4N		1/25	283.2	112.2								20		110				
IVISIVIEU0ZUU4IN		1/25	319.2	148.2														

Upper column: without brake Lower column: with brake

MSMD series



* The figure represents the dimensions without brake.



	Motor																
Model	output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LW	(LG)	LE	Key way B×H×LK	Т
MSMD01□□□1N		1/5	191.5	92													
		1/0	221.5	122										67.5			
MSMD01 = 2N		1/9	191.5	92	32	20	52	50	60	12	10	M5 Depth	18	0.10		4×4×16	2.5
	100		221.5	122								12					
MSMD01		1/15	202	92										78			
			232	122								MC					
MSMD01□□□4N		1/25	234	92	50	30	78	70	90	19	17	M6 Depth	26	92		6×6×22	3.5
			264	122								20 M5					
MSMD02□□□1N		1/5	184	79.5	32	20	52	50	60	12	10	Depth	18	72.5		4×4×16	2.5
			220.5	116								12					
MSMD02□□□2N		1/9	219	79.5 116										89.5	3		
	200		255.5 229.5	79.5													
MSMD02□□□3N		1/15	266	116													
			229.5	79.5										100			
MSMD02 = 4N		1/25	266	116								M6		26			
			238.5	99	50	30	78	70	90) 19	9 17	Depth 20	26			6×6×22	3.5
MSMD04 1N		1/5	275	135.5								20					
		_	238.5	99										89.5			
MSMD04□□□2N		1/9	275	135.5													
MOMBO 4	400	445	249	99										400			
MSMD04□□□3N		1/15	285.5	135.5										100			
MOMBOA		4 /05	264	99	0.4	40	00	00	445	0.4	40	M8	0.5	404	_	0.7.00	_
MSMD04		1/25	300.5	135.5	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4
MCMD000 Tabl		4/5	255.7	112.2	Ε0	00	70	70	00	10	47	M6	00	00.5	0	CC00	0.5
MSMD082□□1N		1/5	292.7	149.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5
MCMDOOO		4 /0	270.7	112.2										07.5			
MSMD082□□2N	750	1/9	307.7	149.2										97.5			
MSMD082 3N	750	1/15	283.2	112.2	61	40	98	۵n	115	24	10	M8 Dooth	35		5	8×7×30	4
INI SIVI DUOZ L. L. JIN		1/15	320.2	149.2	ΟI	40	90	90	90 115 24	115 24 18	24 18	Depth 20	აა		Э	0×1×30	4
MSMD082□□4N		1/25	283.2	112.2									110				
IVISIVIDUOZ		1/20	320.2	149.2													

Upper column: without brake Lower column: with brake

MHMD series

(LG) Motor connector (AMP)
Brake connector (AMP) Encoder connecter (AMP)

(Key way dimensions)

[Unit: mm]

^{*} The figure represents the dimensions without brake.

Model	Motor output (W)	Reduction ratio	L	LL	LR	LQ	LC	LB	LA	s	LH	LZ	LW	(LG)	LE	Key way B×H×LK	т			
			203.5	99								M5								
MHMD02 1N		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										20.5						
MHMD02 2N	200	1/9	275	135.5										89.5						
	200	4/45	249	99						0 19										
MHMD02□□□3N		1/15	285.5	135.5										400						
			249	99			78				17			100	3					
MHMD02 4N		1/25	285.5	135.5	50	30		70	90			M6	00		3	0000	٥.			
MHMD04		1/5	258	118.5	50	30		5 70	0 90			Depth 20	26			6×6×22	3.5			
		1/5	294.5	155										90 E						
MHMD04 2N		1/9	258	118.5										89.5						
		1/9	294.5	155																
MHMD04 3N	400	1/15	268.5	118.5										100						
		1/15	305	155										100						
			283.5	118.5					445	45 04		M8			_					
MHMD04		1/25	320	155	61	40	98	90	115	24	18	Depth 20	35	104	5	8×7×30	4			
		_	270.7	127.2								M6								
MHMD082 1N		1/5	307.7	164.2	50	30	78	70	90	19	17	Depth 20	26	93.5	3	6×6×22	3.5			
			285.7	127.2																
MHMD082□□2N	750	1/9	322.7	164.2										97.5						
	750		298.2	127.2	١							M8			_		3.5			
MHMD082□□3N	1/15 335.2 164.2 298.2 127.2	164.2	61	40	98	98 90	90 115	115 24	18	Depth 20	35		5	8×7×30	4					
												20	20	20	11	110				
MHMD082□□4N			1/25	335.2	164.2															

Upper column: without brake [
Lower column: with broke	

MEMO

Model Designation

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

Features

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

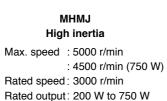


Low inertia

Max. speed : 5000 r/min

: 4500 r/min (750 W) Rated speed: 3000 r/min

Rated output: 200 W to 750 W Enclosure : IP65



Enclosure : IP65



Low inertia

Max. speed : 5000 r/min : 4500 r/min

(from 4.0 kW) Rated speed: 3000 r/min

Rated output: 1.0 kW to 5.0 kW Enclosure : IP65

Middle capacity



MGMF (Low speed/ High torque type) High inertia

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

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

Middle inertia

Rated output: IP65 1.0 kW to 5.0 kW

Max. speed : 3000 r/min

Rated speed: 2000 r/min

Enclosure : IP65

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

Enclosure : IP65

Rated output: IP65 1.0 kW to 5.0 kW

Special Order Product

MSMJ (200 V)

200 W to 750 W....

1.0 kW to 5.0 kW P.158

1.0 kW to 5.0 kW P.164

MHMJ (200 V)

1.0 kW to 5.0 kW P.176

Motor Contents

MSME (200 V)

MDME (200 V)

MGME (200 V)

0.9 kW to 3.0 kW P.170

200 W to 750 W P.173

MHME (200 V)

MHME High inertia

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

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Servo Motor

Symbol

MSMJ

MSMF

MDMF

MGMF

MHMJ

M S M E 5 0 2 G C C M * **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)

Motor rated output

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

Rotary encoder specifications

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

High inertia (0.9 kW to 3.0 kW)

High inertia (200 W to 750 W)

Voltage specifications

2: 200 V

MHME High inertia (1.0 kW to 5.0 kW)

<Cautions>

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

Motor specifications MSMJ, MHMJ

	Sh	aft	Holding	g brake	Oil	seal
Symbol	Round	Key-way, center tap	without	with	without	with
Α	•		•		•	
В	•			•	•	
С	•		•			•
D	•			•		•
S		•	•		•	
Т		•		•	•	
U		•	•			•
٧		•		•		•

MSME, MDME, MGME, MHME

Sh	aft	Holding	g brake	Oil seal			
Round	Key-way	without	with	without	with		
•		•			•		
•			•		•		
	•	•			•		
	•		•		•		
		Shaft Round Key-way • • • • • • • • • •		3			

Design order

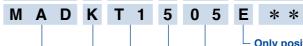
_	
Symbol	Specifications
С	IP65 motor (MSME, MDME, MGME, MHME)
1	IP65 motor (MSMJ, MHMJ)

Servo Driver

Speed, Position, Torque, Full-closed type

Position control type

Frame symbol *



M A D K T 1 5 0 5

Symbol Frame MAD Frame A MBD Frame B MCD Frame C

MDD Frame D MED Frame E MFD Frame F

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

- Only position control

Supply voltage specifications Specifications Symbol 3-phase, 200 V Single/3-phase, 200 V

Power device Max. current rating

Symbol	Current rating
T1	10 A
T2	15 A
T3	30 A
T5	50 A
T7	75 A
TA	100 A
TB	150 A

Current detector current rating

Special specifications

Special specifications

0,	opcocacc
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

Symbol Specifications

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

A5 Family

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

	Motor Driver Power Optional parts						Driver		Power			Option	nal parts					
		Power	Output	Part No.	Rating/	A5II series Part No.	A5IIE series Part No.		capacity		er Cable	Motor	Cable	Brake Cable	External	Reactor	Noise Filter	
M	lotor series	supply	(W)	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	without Brake Note) 3	with Brake Note) 3	Note) 3	Regenerative Resistor	Single phase 3-phase	Single phase 3-phase	
	MSMJ		200	MSMJ022 □ 1 *	155	MADKT1507	MADKT1507E	A-frame	Approx. 0.5							DV0P227 DV0P220	DV0P4170	
	(Leadwire) type		400	MSMJ042 □ 1 *	156	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	MFECA 0**0EAM	MFECA 0**0EAE		MCA DEED	MFMCB 0**0GET	DV0P4283	DV0P228	DV0PM20042	
	3000 r/min	Single phase/	750	MSMJ082	157	MCDKT3520	MCDKT3520E	_	Approx. 1.3		Note) 4					DV0P220	DV0PM20042	
Low		3-phase 200 V	1000	MSME102 □ C * M	158	MDDKT5540	MDDKT5540E	D.	Approx. 1.8						DV0D4004	DV0P228 DV0P222	DV0D4000	
v inertia			1500	MSME152 □ C * M	159	MDDKT5540	MDDKT5540E	D-frame	Approx. 2.3			MFMCD 0**2ECD	MFMCA 0**2FCD		DV0P4284	DV0PM20047 DV0P222	DV0P4220	
_	MSME 3000 r/min		2000	MSME202 ☐ C * M	160	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3					_	DV0P4285 Note) 5	DV0P223	DV0PM2004	
	0000 1/111111	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			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	
			5000	MSME502 □ C * M	163	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5						·	 Note) 6 DV0P228		
		Single phase/ 3-phase	1000	MDME102 □ C * M MDME152 □ C * M	164	MDDKT3530	MDDKT3530E MDDKT5540E	D-frame	Approx. 1.8	MFECA	MFECA	MFMCD	MFMCA		DV0P4284	DV0P222 DV0PM20047	DV0P4220	
Middle inertia	MDME	200 V	1500 2000	MDME192 □ C * M	165	MEDKT7364	MEDKT7364E	E-frame App	Approx. 2.3 0**0ESD E-frame Approx. 3.3 Approx. 4.5	0 0	0 0530 0	0**0ESE	0**2ECD	0**2FCD		DV0P4285	DV0P222 DV0P223	DV0PM2004
j.	2000 r/min		3000	MDME302 □ C * M	167	MFDKTA390	MFDKTA390E							Note) 5	DV0P224	D V 01 1V1200-		
<u>n</u> .		3-phase 200 V	4000	MDME402 □ C * M	168	MFDKTB3A2	MFDKTB3A2E		Approx. 4.3			MFMCA	MFMCA	_	DV0P4285	DV0F225	DV0P3410	
			5000	MDME502 □ C * M	169	MFDKTB3A2	MFDKTB3A2E		Approx. 7.5			0**3ECT	0**3FCT		x2 in parallel	Note) 6		
	MGME /Low speed/\ High torque	Single phase/ 3-phase 200 V	900	MGME092 □ C * M	170	MDDKT5540	MDDKT5540E	D-frame	Approx. 1.8			MFMCD 0**2ECD	MFMCA **2FCD		DV0P4284	DV0P228 DV0P221	DV0P4220	
	type	3-phase	2000	MGME202 □ C * M	171	MFDKTA390	MFDKTA390E	F.	Approx. 3.8			MFMCA	MFMCA		DV0P4285	DV0P223	DV0D0440	
	1000 r/min	200 V	3000	MGME302 □ C * M	172	MFDKTB3A2	MFDKTB3A2E	F-frame	Approx. 4.5			0**3ECT	0**3FCT		×2 in parallel	DV0P224	DV0P3410	
	MHMJ		200	MHMJ022	173	MADKT1507	MADKT1507E	A-frame	Approx. 0.5	MFECA	MFECA	ME	MCA	MFMCB		DV0P227 DV0P220	DV0P4170	
<u>-</u>	(Leadwire)	Single	400	MHMJ042 □ 1 *	174	MBDKT2510	MBDKT2510E	B-frame	Approx. 0.9	0**0EAM	0**0EAE		DEED	0**0GET	DV0P4283	DV0P228	DV0PM200	
Ligh inortio	3000 r/min	phase/ 3-phase	750	MHMJ082 □ 1 *	175	MCDKT3520	MCDKT3520E	C-frame	Approx. 1.3		Note) 4					DV0P220	DV0PM200	
5		200 V	1000	MHME102 □ C * M	176	MDDKT3530	MDDKT3530E	D-frame	Approx. 1.8			MFMCD	MFMCA		DV0P4284	DV0P228 DV0P222	DV0P4220	
			1500	MHME152 □ C * M	177	MDDKT5540	MDDKT5540E	D-indilité	Approx. 2.3	2.3		0**2ECD	0**2FCD		D 101 7204	DV0PM20047 DV0P222	5 701 4220	
	MHME 2000 r/min		2000	MHME202 □ C * M	178	MEDKT7364	MEDKT7364E	E-frame	Approx. 3.3	MFECA 0**0ESD	MFECA 0**0ESE	MFMCE 0**2ECD	MFMCE 0**2FCD	_	DV0P4285 Note) 5	DV0P223	DV0PM2004	
		3-phase	3000	MHME302 □ C * M	179	MFDKTA390	MFDKTA390E		Approx. 4.5			MENTO	MENTO		DV0D:005	DV0P224	-	
		200 V	4000	MHME402 □ C * M MHME502 □ C * M		MFDKTB3A2	MFDKTB3A2E MFDKTB3A2E	F-frame	Approx. 7.5			MFMCA 0**3ECT	MFMCA 0**3FCT		DV0P4285 ×2 in parallel	DV0P225	DV0P3410	
				tions: Motor specif					Approx. 7.5							Note) 6		

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

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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.	P	
Interface Ca	ble		DV0P4360		
			DV0P4120		
			DV0P4121	197	
Interface Co	nversion Ca	ble	DV0P4130	1	
			DV0P4131		
			DV0P4132		
	rit A-frame	Single row	DV0PM20032		
Connector K for Power	to	туре	D VOI WIZOGOZ	ļ	
Supply Input	t D-frame	e Double row type	DV0PM20033	2	
Connection	E-frame		DV0PM20044	ł	
Connector K		e to D-frame	DV0PM20034	t	
for Motor				ł	
Connection	E-frame		DV0PM20046	2	
Connector K for Regenera Resistor		Э	DV0PM20045		
			DV0P4290	2	
			DV0P4310		
Connector K			DV0P4320	ľ	
Motor/Encod	der Connecti	on	DV0P4330		
			DV0P4340	ľ	
			DV0P4380	1	
	RS485	, RS232	DV0PM20024	Ī	
	Safety		DV0PM20025	1	
Connector K	Interfac	е	DV0P4350	1	
Connector R	Externa	ıl Scale	DV0PM20026	Ī	
	Encode	er	DV0PM20010	1	
	Analog	Monitor Signal	DV0PM20031	1	
Battery For	Absolute End	coder	DV0P2990	Ī	
Battery Box	Note) 7		DV0P4430	ľ	
	A-frame	Э	DV0PM20027	Ī	
Mounting	B-frame	Э	DV0PM20028	1	
Bracket	C-frame	е	DV0PM20029	1	
	D-frame	е	DV0PM20030	1	
			MFECA0**0EAD	Ī	
	without	Battery Box	MFECA0**0EAM	1	
Encoder Ca	ble		MFECA0**0ESD	Ť	
	with Ba	ittery Box	MFECA0**0EAE	Ī	
	Note)		MFECA0**0ESE	Ť	
			MFMCA0**0EED	Ť	
		Dool	MFMCD0**2ECD	Ť	
Mate: C 11	without	ыгаке	MFMCE0**2ECD	1	
Motor Cable			MFMCA0**3ECT	Ť	
	with Bra	ako	MFMCA0**2FCD		
	with Br	ant	MFMCA0**3FCT		
Brake Cable	+		MFMCB0**0GET	ŀ	
	A-frame	е		ſ	
	B-frame	е	DV0P4283		
External Reconcrative	C-frame	е			
Regenerativ Resistor	D-frame	е	DV0P4284	1	
	E-frame	е	DV0D4005	1	
	F-frame	Э	DV0P4285		
Reactor	DV0P2	20, DV0P221, 23, DV0P224, 27, DV0P228,	DV0P222, DV0P225, DV0PM20047	:	
	DV0P4	170, DV0PM2 220, DV0PM2	0042		
Noise Filter	DV0P3	410		1	
Noise Filter				T	
	Single	phase	DV0P4190	Į,	
Noise Filter Surge Absor	ber Single 3-phase		DV0P4190 DV0P1450	1	

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

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.

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

				AC2	00 V	
N4-4		IP65		MSMJ022G1□	MSMJ022S1□	
Motor model		IP67		-	_	
A II In I	Model	A5II series		MADK	T1507	
Applicable driver *2	No.	A5IIE serie	es	MADKT1507E	_	
unven	Fi	ame symb	ool	A-fr	ame	
Power supply	y capacit	y	(kVA)	0	.5	
Rated output	!		(W)	20	00	
Rated torque)		(N·m)	0.	64	
Momentary N	Лах. реа	k torque	(N·m)	1.91		
Rated currer	it	(A	A(rms))	1.6		
Max. current		(,	A(o-p))	6.9		
Regenerative	brake	Without option		No limit Note)2		
frequency (time	s/min) Note)1	DV0P4	1283	No limit Note)2		
Rated rotation	nal spee	d	(r/min)	3000		
Max. rotation	al speed		(r/min)	5000		
Moment of in	ertia	Without	brake	0.14		
of rotor (×10	-4 kg·m²)	With b	rake	0.16		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encode	der speci	fications	Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per single turn				131072	

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

Please contact us for more information.

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

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

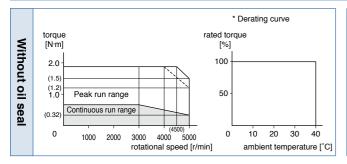
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
docombry	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

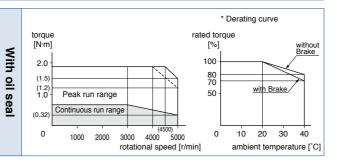
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

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

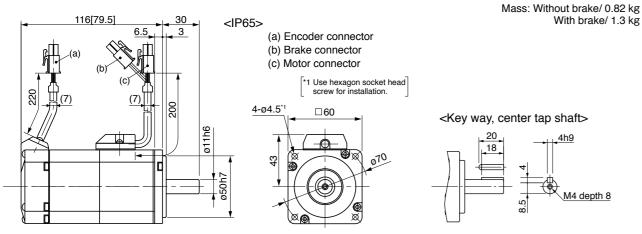
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





Dimensions



* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

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

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

Special Order Product

Please contact us for more information

Specifications

				AC2	00 V	
Matawasada	-1	IP65		MSMJ042G1□	MSMJ042S1	
Motor mode	€I *1	IP67		-	-	
A I' l. l .	Model	A5II serie	S	MBDK	T2510	
Applicable driver	No.	A5IIE ser	ies	MBDKT2510E	_	
unven	F	rame sym	bol	B-fra	ame	
Power supp	oly capacit	у	(kVA)	0	.9	
Rated outpo	ut		(W)	40	00	
Rated torqu	ıe		(N·m)	1.	.3	
Momentary	Max. pea	k torque	(N·m)	3	.8	
Rated curre	ent	(A(rms))	2.6		
Max. currer	nt		(A(o-p))	11.0		
Regenerativ	e brake	Without option		No limit Note)2		
frequency (tin	nes/min) Note)1	DV0P4283		No limit Note)2		
Rated rotat	ional spee	d	(r/min)	30	3000	
Max. rotation	onal speed		(r/min)	50	00	
Moment of	inertia	Without brake		0.26		
of rotor (×10 ⁻⁴ kg·m ²)		With brake		0.28		
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
	Resolutio	n per sing	le turn	1048576	131072	

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

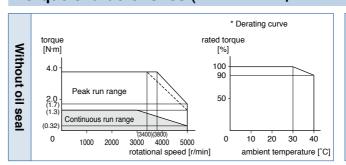
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

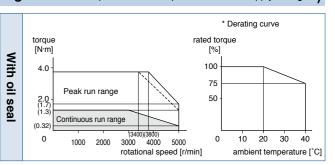
• Permissible load (For details, refer to P.183)

	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

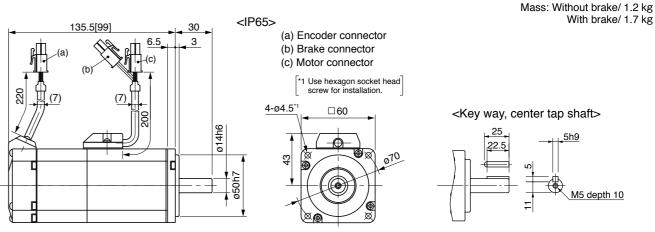
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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.

				AC2	00 V
Motor model	IP65		MSMJ082G1□	MSMJ082S1□	
*1		IP67		-	-
A marking data	Model	A5II series	i	MCDK	T3520
Applicable driver *2	No.	A5IIE seri	es	MCDKT3520E	_
unven	Fr	ame symb	ool	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		(4	A(rms))	4.0	
Max. current		(A(o-p))	17.0	
Regenerative I	orake	Without	option	No limit Note)2	
frequency (times/	min) Note)1	DV0P4	1283	No limit Note)2	
Rated rotation	nal spee	d	(r/min)	3000	
Max. rotationa	al speed		(r/min)	4500	
Moment of ine	ertia	Without	brake	0.87	
of rotor (×10 ⁻⁴	kg·m²)	With b	rake	0.97	
Recommended moment of inertia ratio of the load and the rotor Note)3			20 times or less		
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute	
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)	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)

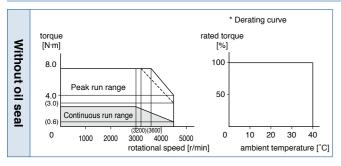
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
accombiy	Thrust load B-direction (N)	392
During	Radial load P-direction (N)	392
operation	Thrust load A, B-direction (N)	147

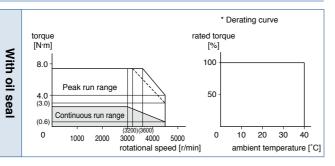
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

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

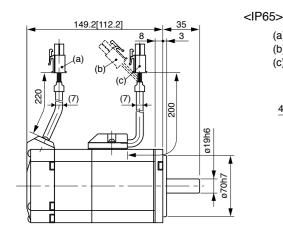
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





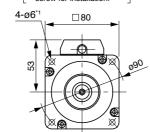
Dimensions



(a) Encoder connector

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

*1 Use hexagon socket head



Mass: Without brake/ 2.3 kg

With brake/ 3.1 kg

* Figures in [] represent the dimensions without brake.

[Unit: mm] (b) Motor/Brak

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

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I.U KVV	[Low mertia, wilddie capacity]	
		1

Specifications

_					AC200 V		
Motor model		IP65			MSME102GC□M	MSME102SC□M	
	∂I ∗1		IP67		-	_	
A	М	odel	A5II series	S	MDDK	T5540	
Applicable driver	*2 No	0.	A5IIE ser	ies	MDDKT5540E	_	
unven		Fr	ame sym	bol	D-fr	ame	
Power supp	oly cap	acity	/	(kVA)	1.	.8	
Rated outp	ut			(W)	10	00	
Rated torqu	ıe			(N·m)	3.	18	
Momentary	Max.	peak	torque	(N·m)	9.55		
Rated curre	ent		(.	A(rms))	6.6		
Max. currer	nt		((A(o-p))	28		
Regenerativ	e brak	е	Without	Without option No limit Note)2		t Note)2	
frequency (tin	nes/min)	Note)1	DV0P	4284	No limit Note)2		
Rated rotat	ional s	speed	d	(r/min)	3000		
Max. rotation	onal sp	peed		(r/min)	5000		
Moment of	inertia	ı	Without brake		2.03		
of rotor (×10 ⁻⁴ kg·m ²) With		With b	rake	2.35			
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times	s or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute			
	Resc	lutio	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.

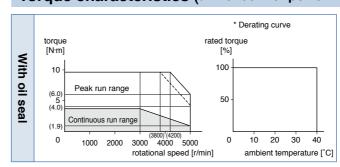
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

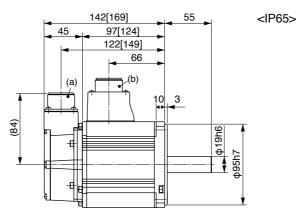
	Radial load P-direction (N)	980
During asseml	Thrust load A-direction (N)	588
docum	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operati	Thrust load A, B-direction (N)	196

- 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.>)

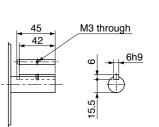


Dimensions



100 4-φ9 φ135 φ175 Mass: Without brake/ 3.5 kg With brake/ 4.5 kg

Key way dimensions



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

[Unit: mm]

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

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

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

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

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

A5 Family

Motor Specifications

Specifications

			AC2	00 V	
Motor model		IP65	MSME152GC□M	MSME152SC□M	
*1		IP67	-	-	
Amaliaahla	Model	A5I series	MDDK	T5540	
Applicable *2	No.	A5IE series	MDDKT5540E	_	
diver	Fr	ame symbol	D-fr	ame	
Power supply	capacity	y (kVA)	2	.3	
Rated output		(W)	15	00	
Rated torque		(N·m)	4.	4.77	
Momentary Ma	ax. peal	k torque (N·m)	14.3		
Rated current		(A(rms))	8.2		
Max. current		(A(o-p))	35		
Regenerative b	rake	Without option	No limi	No limit Note)2	
frequency (times/	min) Note)1	DV0P4284	No limit Note)2		
Rated rotation	al spee	d (r/min)	3000		
Max. rotationa	l speed	(r/min)	5000		
Moment of ine	rtia	Without brake	2.84		
of rotor (×10 ⁻⁴	kg·m²)	With brake	3.17		
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less		
Rotary encoder specifications 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)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

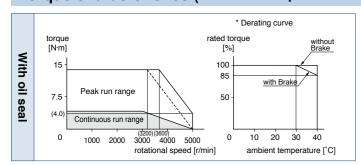
	During assembly During operation	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
		Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

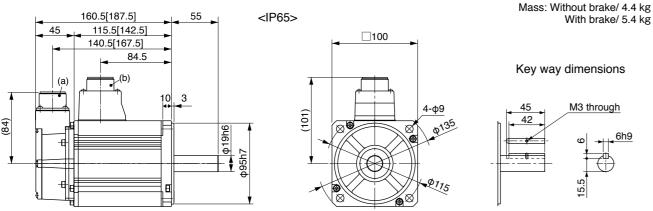
200 V MSME 1.5 kW [Low inertia, Middle capacity]

*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



With brake/ 5.4 kg

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

[Unit: mm]

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

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

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

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

Special Order Product

Please contact us for more information

Specifications

					AC2	00 V	
		IP65			MSME202GC□M	MSME202SC□M	
Motor mode	€I ∗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 (capacit	y	(kVA)	3	.3	
Rated outp	ut			(W)	20	00	
Rated torqu	ıe			(N·m)	6.:	37	
Momentary	Ма	x. peal	k torque	(N·m)	19	19.1	
Rated curre	ent		(A(rms))	11.3		
Max. currer	nt		((A(o-p))	48		
Regenerativ	/e b	rake	Without option		No limit Note)2		
frequency (tin	nes/n	nin) Note)1	DV0P	4285	No limit Note)2		
Rated rotat	iona	al spee	d	(r/min)	3000		
Max. rotation	onal	speed		(r/min)	5000		
Moment of	ine	rtia	Without brake		3.68		
1 1 (10 11 2)		With b	rake	4.01			
Recommended moment of inertia ratio of the load and the rotor Note)3			15 times or less				
Rotary encoder specifications Note)5		Note)5	20-bit Incremental	17-bit Absolute			
	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.

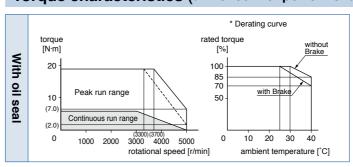
Static friction torque (N·m)	7.8 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.81±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

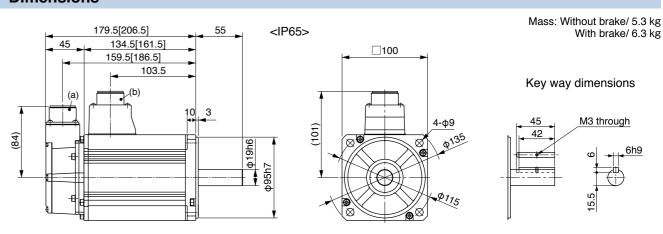
		Radial load P-direction (N)	980
	During assembly	Thrust load A-direction (N)	588
	accombiy	Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- 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.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		
Mataumandal	IP65			MSME302GC□M	MSME302SC□M	
Motor model *1		IP67		-	_	
Annlinable	Model	A5II serie	s	MFDK	TA390	
Applicable driver *2	No.	A5IIE ser	ries	MFDKTA390E	_	
unver	Fr	ame sym	bol	F-fr	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	orake Without option			No limit Note)2		
frequency (times/i	min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotation	al spee	d	(r/min)	3000		
Max. rotationa	l speed		(r/min)	5000		
Moment of ine	rtia	Without	t brake	6.50		
of rotor ($\times 10^{-4}$	kg·m²)	With b	orake	7.85		
Recommende ratio of the loa			15 time	s 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.

Please contact us for more information.

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

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

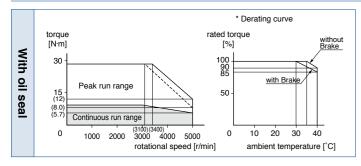
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

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

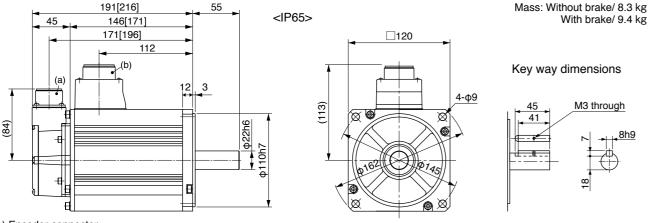
200 V MSME 3.0 kW [Low inertia, Middle capacity]

*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]

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

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

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

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

Specifications

Special Order Product

				AC2	00 V		
Mataumand	_	IP65		MSME402GC□M	MSME402SC□M		
Motor mode	€I ∗1		IP67		-	-	
		Model	A5II serie	S	MFDK	TB3A2	
Applicable driver	*2	No.	A5IIE ser	ies	MFDKTB3A2E	-	
unven		Fr	ame sym	bol	F-fr	ame	
Power supp	ply (capacity	y	(kVA)	6	.0	
Rated outp	ut			(W)	40	00	
Rated torqu	ue			(N·m)	12	2.7	
Momentary	/ Ма	ax. peal	k torque	(N·m)	38	38.2	
Rated curre	ent		(A(rms))	19.6		
Max. currer	nt		((A(o-p))	83		
Regenerativ	/e b	rake	Without	option	No limit Note)2		
frequency (tir	nes/n	nin) Note)1	DV0P4	285×2	No limit Note)2		
Rated rotat	ion	al spee	d	(r/min)	3000		
Max. rotation	ona	speed		(r/min)	4500		
Moment of	ine	rtia	Without	brake	12.9		
of rotor (×1	0-4	kg·m²)	With brake		14.2		
Recommended moment of inertia ratio of the load and the rotor Note)3				tia Note)3	15 times	s or less	
Rotary encoder specif			fications	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.

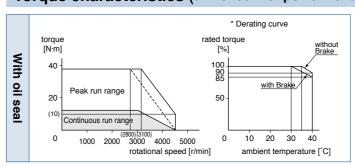
Static friction torque (N·m)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

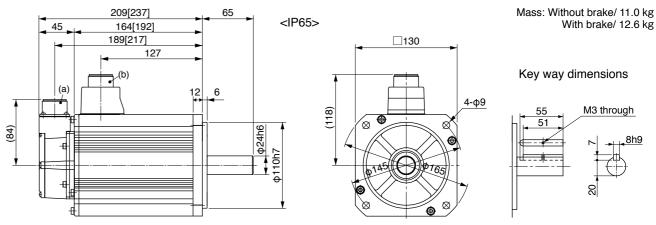
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- 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



- (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.

			AC2	00 V	
Motor model		IP65	MSME502GC□M	MSME502SC□M	
*1		IP67	_	_	
A U a a la la	Model	A5I series	MFDK	MFDKTB3A2	
Applicable driver *2	No.	A5IE series	MFDKTB3A2E	-	
unven	Fr	ame symbol	F-fra	ame	
Power supply	capacit	y (kVA)	7.	.5	
Rated output		(W)	50	00	
Rated torque		(N·m)	15	5.9	
Momentary M	lax. peal	k torque (N·m)	47.7		
Rated current	:	(A(rms))	24.0		
Max. current		(A(o-p))	102		
Regenerative	brake	Without option	357		
frequency (times	/min) Note)1	DV0P4285×2	No limit Note)2		
Rated rotation	nal spee	d (r/min)	3000		
Max. rotationa	al speed	(r/min)	4500		
Moment of ine	ertia	Without brake	17.4		
of rotor (×10 ⁻⁴	¹ kg·m²)	With brake	18.6		
Recommender ratio of the loa			15 times	15 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)	16.2 or more
Engaging time (ms)	110 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.90±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

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

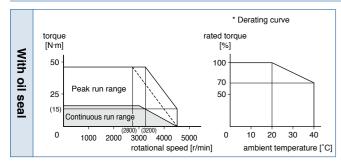
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.45.
- *1 Motor specifications:

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

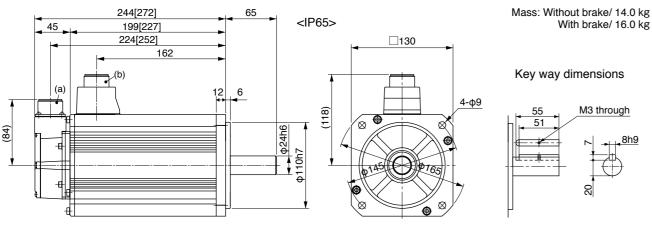
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

[Unit: mm]

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



Dimensions



(a) Encoder connector

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

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

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

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

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

Special Order Product

Please contact us for more information

Specifications

				AC2	00 V		
M - t - · · · · · · · · · · · · · · · · · ·		IP65		MDME102GC□M	MDME102SC N		
Motor mode	₽I *1		IP67		-	-	
A 1: 1- 1 -		Model	A5II serie	S	MDDK	T3530	
Applicable driver	*2	No.	A5IIE ser	ies	MDDKT3530E	-	
unver		Fr	ame sym	bol	D-fra	ame	
Power supp	oly c	apacit	y	(kVA)	1.	.8	
Rated outp	ut			(W)	10	00	
Rated torqu	ıe			(N·m)	4.	77	
Momentary	Ма	x. peal	k torque	(N·m)	14	.3	
Rated curre	ent		(A(rms))	5.7		
Max. currer	nt		((A(o-p))	24		
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)	2000		
Max. rotation	onal	speed		(r/min)	3000		
Moment of	iner	tia	Without	brake	4.60		
of rotor (×1	0 ⁻⁴ k	⟨g·m²)	With b	rake	5.9	90	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less			
Rotary encoder specification			fications	Note)5	20-bit Incremental	17-bit Absolute	
	Re	solutio	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.

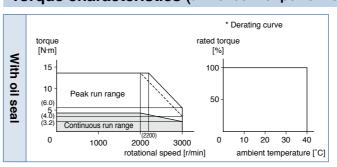
4.9 or more
80 or less
70 or less
0.59±10 %
2 or more
24±2.4

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

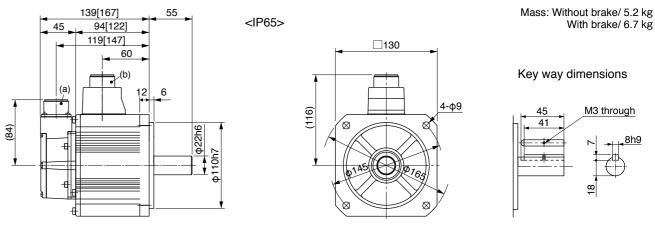
	During assembly	Radial load P-direction (N)	980
		Thrust load A-direction (N)	588
		Thrust load B-direction (N)	686
	During operation	Radial load P-direction (N)	490
		Thrust load A, B-direction (N)	196

- 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.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	AC200 V		
Mataumadal		IP65		MDME152GC□M	MDME152SC N	
Motor model *1		IP67		-	-	
A !! - -	Model	A5II series	s	MDDK	T5540	
Applicable driver *2	No.	A5IIE ser	ies	MDDKT5540E	-	
unver	Fr	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. peal	k torque	(N·m)	21.5		
Rated current	:	(.	A(rms))	9.4		
Max. current		((A(o-p))	40		
Regenerative	brake	Without option		No limit Note)2		
frequency (times	/min) Note)1	DV0P4284		No limit Note)2		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	3000		
Moment of ine	ertia	Without brake		6.70		
of rotor (×10 ⁻⁴	¹ kg·m²)	With brake		7.99		
Recommended moment of inertia ratio of the load and the rotor Note)3			10 times or less			
Rotary encod	fications	Note)5	20-bit Incremental	17-bit Absolute		
F	Resolutio	Resolution per single			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)

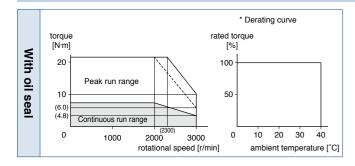
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

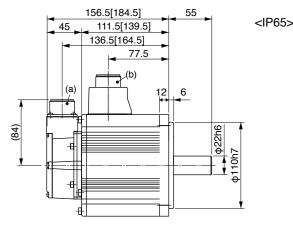
200 V MDME 1.5 kW [Middle inertia, Middle capacity]

*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.>)



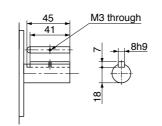
Dimensions



□130

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

Key way dimensions



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

[Unit: mm]

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

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

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

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

Special Order Product

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

Please contact us for more information

Specifications

					AC200 V		
Matauaaaa		IP65		MDME202GC□M	MDME202SC□N		
Motor mode	€I ∗1		IP67		-	-	
A		Model	A5II serie	s	MEDK	T7364	
Applicable driver	*2	No.	A5IIE ser	ies	MEDKT7364E	-	
diivei		Fr	ame sym	bol	E-fra	ame	
Power supp	ply c	apacit	y	(kVA)	3	.3	
Rated outp	ut			(W)	20	00	
Rated torqu	ue			(N·m)	9.	55	
Momentary	/ Ма	x. peal	torque	(N·m)	28.6		
Rated curre	ent		(A(rms))	11.5		
Max. current (A(o-p)				(A(o-p))	49		
Regenerativ	/e bi	rake	Without option		No limit Note)2		
frequency (tir	nes/m	in) 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	iner	tia	Without brake		8.72		
of rotor (x1	0 ⁻⁴ ł	kg·m²)	With brake		10.0		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less			
Rotary enc	Rotary encoder specificatio			Note)5	20-bit Incremental	17-bit Absolute	
	Resolution per s				1048576	131072	

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

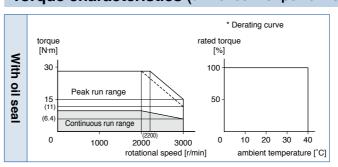
,
13.7 or more
100 or less
50 or less
0.79±10 %
2 or more
24±2.4

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

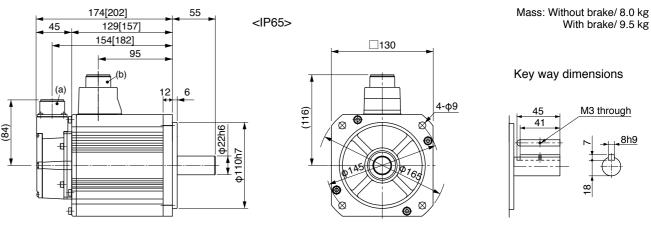
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	490
operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:
- *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.

			AC2	200 V	
Mataumaadal	IP65			MDME302GC□M	MDME302SC□M
Motor model		IP67		-	_
A 15 1-1 -	Model	A5II series		MFDKTA390	
Applicable driver *2	No.	A5IIE serie	s	MFDKTA390E	_
unver	Fr	ame symb	ol	F-fr	ame
Power supply	capacit	/	(kVA)	4	.5
Rated output			(W)	30	000
Rated torque			(N·m)	14	1.3
Momentary M	ax. peal	c torque	(N·m)	43.0	
Rated current		(A	(rms))	17.4	
Max. current		(A	۸(o-p))	74	
Regenerative b	orake	Without o	ption	No lim	it Note)2
frequency (times/	min) Note)1	DV0P42	85×2	No limit Note)2	
Rated rotation	al spee	d ((r/min)	2000	
Max. rotationa	ıl speed	((r/min)	3000	
Moment of ine	ertia	Without b	orake	12.9	
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	14.2	
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less	
Rotary encode	Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute
R	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)

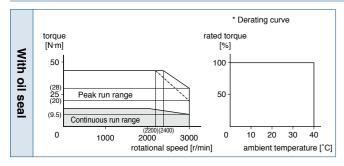
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
accombiy	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

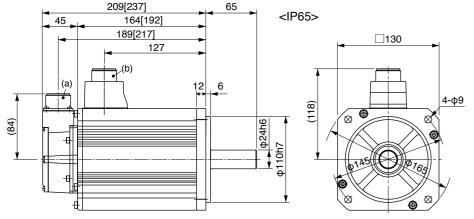
200 V MDME 3.0 kW [Middle inertia, Middle capacity]

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

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



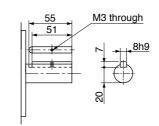
Dimensions



Mass: Without brake/ 11.0 kg

With brake/ 12.6 kg

Key way dimensions



(a) Encoder connector

(b) Motor/Brake connector

* Figures in [] represent the dimensions with brake.

[Unit: mm]

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

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

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

Special Order Product

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

Please contact us for more information

Specifications

				AC200 V		
NA - 4		IP65		MDME402GC□M	MDME402SC	
Motor mode	:1	IP67		-	-	
A	Model	A5II serie	S	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)	19).1	
Momentary	Max. peal	k torque	(N·m)	57.3		
Rated current (A(rms)) Max. current (A(o-p))				21.0		
				89		
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)	2000		
Max. rotatio	nal speed		(r/min)	3000		
Moment of i	inertia	Without brake		37.6		
of rotor (×10	0 ⁻⁴ kg·m²)	With brake		38.6		
Recommended moment of inertia ratio of the load and the rotor Note)3				10 times or less		
Rotary 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.

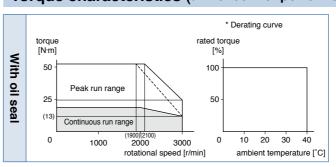
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

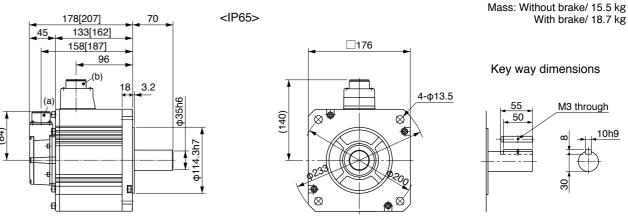
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- 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.

			AC2	00 V
Matanasadal		IP65	MDME502GC□M	MDME502SC□M
Motor model		IP67	-	-
A lin - la la	Model	A5II series	MFDKTB3A2	
Applicable driver *2	No.	A5IIE series	MFDKTB3A2E	-
unver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	7.	.5
Rated output		(W)	50	00
Rated torque		(N·m)	23	3.9
Momentary Ma	ax. peal	k torque (N·m)	71.6	
Rated current		(A(rms))	25.9	
Max. current (A(o-p))		110		
Regenerative brake Without option		120		
frequency (times/min) Note)1 DV0P4285×2		DV0P4285×2	No limi	t Note)2
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	48.0	
of rotor (×10 ⁻⁴	kg·m²)	With brake	48.8	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encode	er speci	fications Note)5	20-bit Incremental	17-bit Absolute
R	esolutio	n per single turn	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)

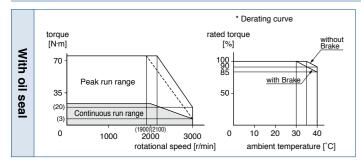
During assembly	Radial load P-direction (N)	1666
	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

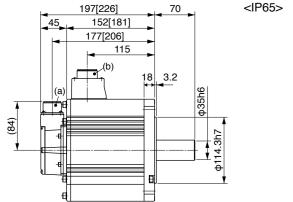
200 V MDME 5.0 kW [Middle inertia, Middle capacity]

*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.>)



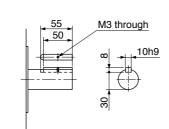
Dimensions



4-φ13.5

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

Special Order Product

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

Please contact us for more information

Specifications

				AC200 V	
M -1		IP65		MGME092GC□M	MGME092SC□N
Motor mode *	•	IP67		-	-
A	Model	A5II serie	S	MDDK	T5540
Applicable driver *	No.	A5IIE ser	ies	MDDKT5540E	-
unven	Fr	ame sym	bol	D-fr	ame
Power supp	ly capacit	y	(kVA)	1.	.8
Rated outpu	ıt		(W)	90	00
Rated torqu	е		(N·m)	8.	59
Momentary	Max. peal	k torque	(N·m)	19.3	
Rated curre	nt	(A(rms))	7.6	
Max. current (A(o-p))		24			
Regenerative brake W		Without	option	No limit Note)2	
frequency (tim	es/min) Note)1	DV0P4284		No limit Note)2	
Rated rotation	onal spee	d	(r/min)	1000	
Max. rotatio	nal speed		(r/min)	2000	
Moment of i	nertia	Without brake		6.70	
of rotor (×10) ⁻⁴ kg·m²)	With brake		7.99	
Recommend ratio of the I			tia Note)3	10 times	s or less
Rotary encoder specifications Resolution per single		Note)5	20-bit Incremental	17-bit Absolute	
		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.

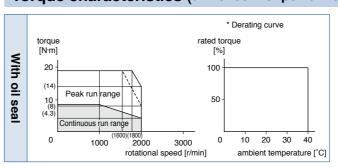
Static friction torque (N·m)	13.7 or more
Engaging time (ms)	100 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	0.79±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

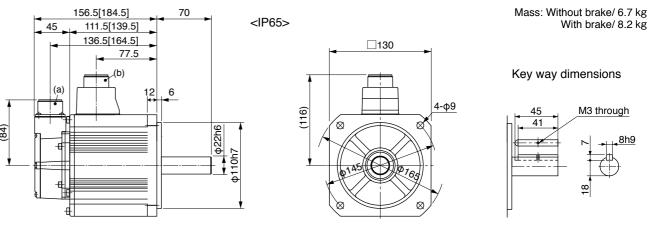
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	588
assembly	Thrust load B-direction (N)	686
During	Radial load P-direction (N)	686
operation	Thrust load A, B-direction (N)	196

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

Please contact us for more information.

Please contact us for more information

Specifications

			AC2	00 V
Motor model		IP65	MGME202GC□M	MGME202SC□M
*1		IP67	-	-
Amaliaabla	Model		MFDK	TA390
Applicable 42	No.	A5IIE series	MFDKTA390E	_
diver	Fr	ame symbol	F-fra	ame
Power supply	capacit	y (kVA)	3	.8
Rated output		(W)	20	00
Rated torque		(N·m)	19).1
Momentary Max. peak torque (N·m)			47.7	
Rated current (A(rms))		17.0		
Max. current (A(o-p))		60		
Regenerative b	rake	Without option	No limit Note)2	
frequency (times/min) Note)1		DV0P4285×2	No limit Note)2	
Rated rotation	al spee	d (r/min)	1000	
Max. rotationa	l speed	(r/min)	2000	
Moment of ine	rtia	Without brake	30.3	
of rotor ($\times 10^{-4}$	kg·m²)	With brake	31.4	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less		
Rotary encoder specifications Note)5		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.

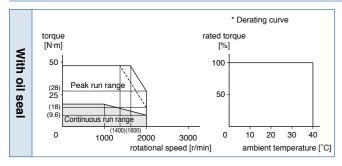
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

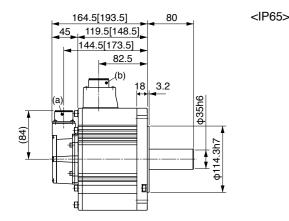
	During assembly	Radial load P-direction (N)	1666
		Thrust load A-direction (N)	784
		Thrust load B-direction (N)	980
	During	Radial load P-direction (N)	1176
	operation	Thrust load A, B-direction (N)	490

- 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.152.

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



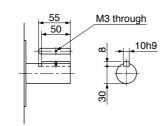
Dimensions



4-φ13.5

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

Key way dimensions



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

[Unit: mm]

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

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

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

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

Special Order Product

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

Specifications

			AC2	00 V		
Matanasadal		IP65		MGME302GC□M	MGME302SC□N	
Motor mode	:1	IP67		-	_	
	Model	Model A5II series		MFDK	ТВЗА2	
Applicable driver *	No.	A5IIE series		MFDKTB3A2E	-	
unvoi	Fr	ame sym	bol	F-fra	ame	
Power supp	ly capacit	у	(kVA)	4.	.5	
Rated outpu	ıt		(W)	30	00	
Rated torqu	е		(N·m)	28	3.7	
Momentary	Max. peal	k torque	(N·m)	71	71.7	
Rated curre	nt	(.	A(rms))	22.6		
Max. current (A(o-p))		8	0			
Regenerative	e brake	Without	option	No limi	t Note)2	
frequency (tim	es/min) Note)1	DV0P4285×2		No limit Note)2		
Rated rotati	onal spee	d	(r/min)	1000		
Max. rotatio	nal speed		(r/min)	2000		
Moment of i	nertia	Without brake		48.4		
of rotor (×10) ⁻⁴ kg·m²)	With b	rake	49).2	
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times	s or less			
Rotary enco	Rotary encoder specifications Note		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.

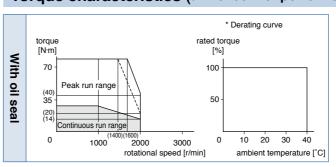
Static friction torque (N·m)	58.8 or more
Engaging time (ms)	150 or less
Releasing time (ms) Note)4	50 or less
Exciting current (DC) (A)	1.4±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

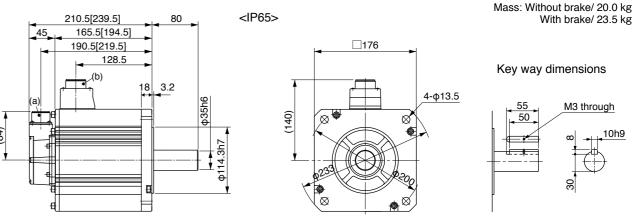
	Radial load P-direction (N)	2058
During assembly	Thrust load A-direction (N)	980
docombry	Thrust load B-direction (N)	1176
During	Radial load P-direction (N)	1470
operation	Thrust load A, B-direction (N)	490

- 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.

				AC2	00 V
		IP65		MHMJ022G1□	MHMJ022S1□
Motor model *1		IP67		-	-
	Model	A5II series	;	MADKT1507	
Applicable driver *2	No.	A5IIE serie	es	MADKT1507E	_
divoi	Fr	ame symb	ool	A-fr	ame
Power supply	capacit	y	(kVA)	0	.5
Rated output			(W)	20	00
Rated torque			(N·m)	0.64	
Momentary M	ax. peal	k torque	(N·m)	1.91	
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	DV0P4	1283	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 ($\times 10^{-4}$	kg·m²)	With b	rake	0.45	
Recommended moment of inertia ratio of the load and the rotor Note)3			30 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
R	esolutio	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)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

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

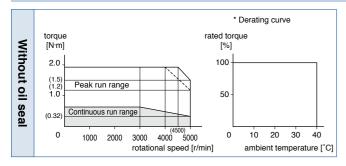
	Radial load P-direction (N)	392
During assembly	Thrust load A-direction (N)	147
accombiy	Thrust load B-direction (N)	196
During	Radial load P-direction (N)	245
operation	Thrust load A, B-direction (N)	98

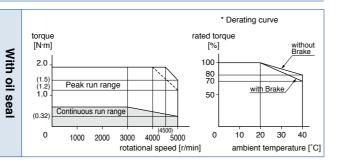
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:

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

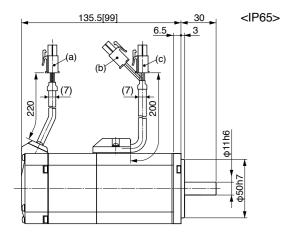
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





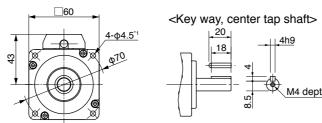
Dimensions



(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. **Special Order Product**

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

Please contact us for more information

Specifications

			AC2	00 V	
M-4		IP65		MHMJ042G1□	MHMJ042S1
Motor mode *		IP67		-	-
Annlinable	Model	Model A5II series		MBDKT2510	
Applicable driver **	No.	A5IIE ser	ies	MBDKT2510E	_
unver	Fr	ame sym	bol	B-fra	ame
Power suppl	y capacit	y	(kVA)	0	.9
Rated outpu	t		(W)	40	00
Rated torque	Э		(N·m)	1.	.3
Momentary	Max. peal	k torque	(N·m)	3.8	
Rated currer	nt	(.	A(rms))	2.6	
Max. current	t	((A(o-p))	11.0	
Regenerative	e brake	Without	option	No limi	t 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 in	nertia	Without	brake	0.67	
of rotor (×10	⁻⁴ kg·m ²)	With b	rake	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.

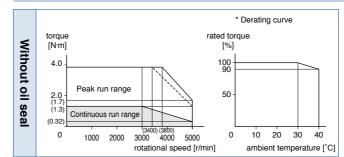
Static friction torque (N·m)	1.27 or more
Engaging time (ms)	50 or less
Releasing time (ms) Note)4	15 or less
Exciting current (DC) (A)	0.36
Releasing voltage (DC) (V)	1 or more
Exciting voltage (DC) (V)	24±1.2

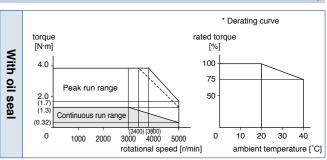
• Permissible load (For details, refer to P.183)

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

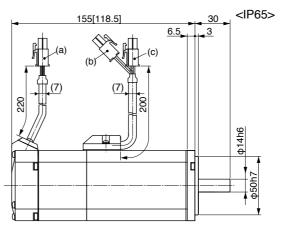
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.42.
- *1 Motor specifications:
- *2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





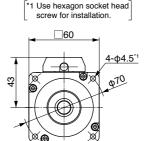
Dimensions



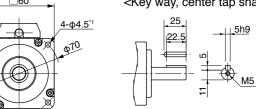
(a) Encoder connector

(b) Brake connector

(c) Motor connector



<Key way, center tap shaft>



* Figures in [] represent the dimensions without brake.

[Unit: mm]

Mass: Without brake/ 1.4 kg

With brake/ 1.8 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.

				AC2	00 V
Motor model	IP65		MHMJ082G1□	MHMJ082S1	
Wotor model		IP67		-	-
	Model	A5II series		MCDKT3520	
Applicable driver *2	No.	A5IIE serie	s	MCDKT3520E	_
unver	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 encoder specifications Note)5		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)

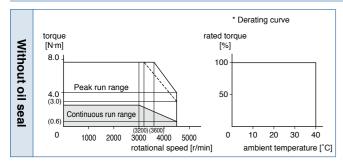
	Radial load P-direction (N)	686
During assembly	Thrust load A-direction (N)	294
assembly	Thrust load B-direction (N)	392
During operation	Radial load P-direction (N)	392
	Thrust load A, B-direction (N)	147

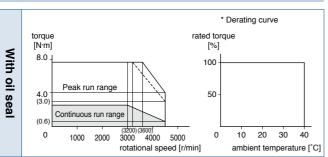
- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

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

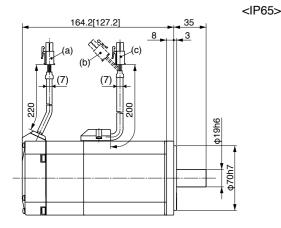
*2 The product that the end of driver model designation has "E" is "Position control type". Detail of model designation, refer to P.152.

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





Dimensions

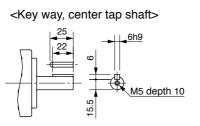


(a) Encoder connector

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

screw for installation.

*1 Use hexagon socket head



Mass: Without brake/ 2.5 kg

With brake/ 3.5 kg

* Figures in [] represent the dimensions without brake.

[Unit: mm]

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

Read the Instruction Manual carefully and understand all precautions and remarks before using the products. Please avoid the motor, or equipment containing the motor to be distributed to Japan, or other regions through Japan. **Special Order Product**

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

Please contact us for more information

Specifications

			AC2	00 V	
Mada alal		IP65		MHME102GC□M	MHME102SC N
Motor model		IP67		-	_
A	Model	el A5II series		MDDKT3530	
Applicable driver *2	No.	A5IIE ser	ies	MDDKT3530E	_
unven	Fr	ame sym	bol	D-fra	ame
Power supply	capacit	у	(kVA)	1.	8
Rated output			(W)	10	00
Rated torque			(N·m)	4.	77
Momentary N	1ax. peal	k torque	(N·m)	14.3	
Rated curren	t	(A(rms))	5.7	
Max. current		((A(o-p))	2	4
Regenerative	brake	Without	option	83	
frequency (times	s/min) Note)1	DV0P4284		No limit Note)2	
Rated rotatio	nal spee	d	(r/min)	2000	
Max. rotation	al speed		(r/min)	3000	
Moment of in	ertia	Without brake		24.7	
of rotor (×10	4 kg·m²)	With brake		26.0	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less		
Rotary encoder specifications Note)5		20-bit Incremental	17-bit Absolute		
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.

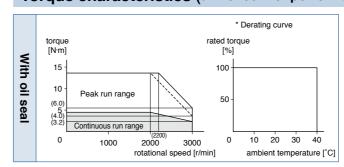
Static friction torque (N·m)	4.9 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	70 or less
Exciting current (DC) (A)	0.59±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

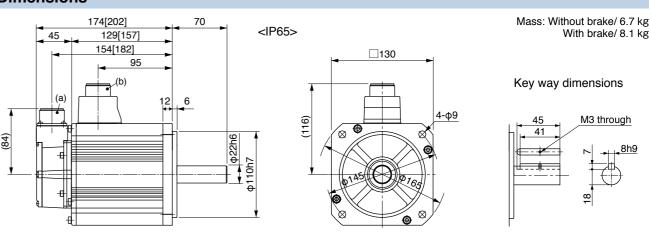
	Radial load P-direction (N)	980
During assembly	Thrust load A-direction (N)	980 588 686 490 196
	Thrust load B-direction (N)	686
During Radial	Radial load P-direction (N)	490
operation	Duning . ,	196

- 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.

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

Specifications

				AC2	00 V
Motor model	IP65		MHME152GC□M	MHME152SC□M	
*1		IP67		-	_
A II I. I .	Model	A5II series	s	MDDKT5540	
Applicable driver *2	No.	A5IIE ser	ies	MDDKT5540E	-
unver	Fr	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 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		22	
frequency (times/r	min) Note)1	DV0P4284		130	
Rated rotation	al spee	d	(r/min)	2000	
Max. rotationa	l speed		(r/min)	3000	
Moment of ine	rtia	Without	brake	37.1	
of rotor ($\times 10^{-4}$	kg·m²)	With b	rake	38.4	
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times	or less	
Rotary encode	er speci	fications	Note)5	20-bit Incremental	17-bit Absolute
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.

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)

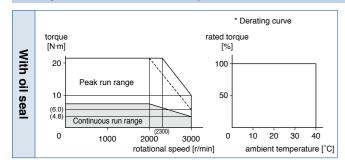
		Radial load P-direction (N)	980
	During assembly	Thrust load A-direction (N)	588
	accombiy	Thrust load B-direction (N)	686
	During	Radial load P-direction (N)	490
	operation	Thrust load A, B-direction (N)	196

- For details of Note 1 to Note 5, refer to P.182, P.183.
- · Dimensions of Driver, refer to P.43.
- *1 Motor specifications:

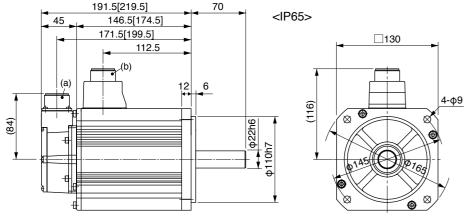
200 V MHME 1.5 kW [High inertia, Middle capacity]

*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.>)



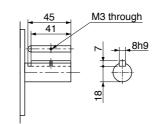
Dimensions



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.

Special Order Product

Please contact us for more information

Specifications

				AC200 V		
Mata:		IP65		MHME202GC□M	MHME202SC N	
Motor model		IP67		-	_	
A	Model	A5II serie	S	MEDK	T7364	
Applicable driver *2	No.	A5IIE ser	ies	MEDKT7364E	_	
unvoi	Fr	ame sym	bol	E-fra	ame	
Power supply	capacit	у	(kVA)	3.	3	
Rated output			(W)	20	00	
Rated torque			(N·m)	9.9	55	
Momentary M	lax. peal	k torque	(N·m)	28.6		
Rated current		(A(rms))	11.1		
Max. current (A(o-		(A(o-p))	47			
Regenerative	brake	Without option		45		
frequency (times	/min) Note)1	DV0P4285		142		
Rated rotation	nal spee	d	(r/min)	2000		
Max. rotationa	al speed		(r/min)	3000		
Moment of ine	ertia	Without	brake	57.8		
of rotor (×10 ⁻⁴	¹ 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	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.

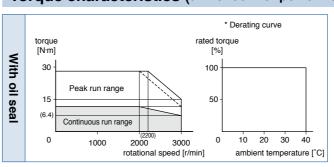
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

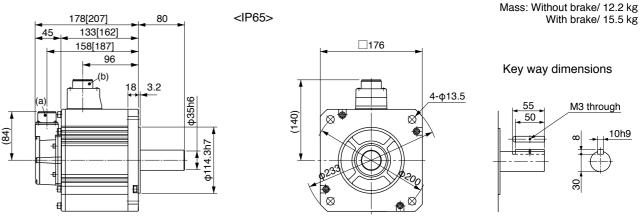
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	1666 784 980 784 343
docombry	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Duning . , ,	343

- 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.

			AC2	00 V
Matanasadal		IP65	MHME302GC□M	MHME302SC□M
Motor model *1		IP67	-	-
Amaliaahla	Model	A5I series	MFDK	TA390
Applicable 42	No.	A5IIE series	MFDKTA390E	-
diver	Fr	ame symbol	F-fra	ame
Power supply	capacity	y (kVA)	4	.5
Rated output		(W)	30	00
Rated torque		(N·m)	14	l.3
Momentary Ma	ax. peal	k torque (N·m)	43.0	
Rated current		(A(rms))	16.0	
Max. current		(A(o-p))	68	
Regenerative b	Regenerative brake		19	
frequency (times/	min) Note)1	DV0P4285×2	V0P4285×2 142	
Rated rotation	al spee	d (r/min)	2000	
Max. rotationa	l speed	(r/min)	3000	
Moment of ine	rtia	Without brake	Without brake 90.5	
of rotor (×10 ⁻⁴	kg·m²)	With brake	92	2.1
	Recommended moment of inertia ratio of the load and the rotor Note)3			or less
Rotary encode	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)	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)

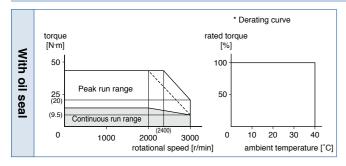
	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
accombiy	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

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

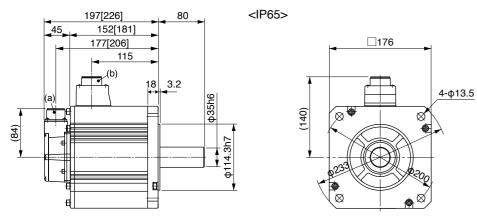
200 V MHME 3.0 kW [High inertia, Middle capacity]

*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.>)

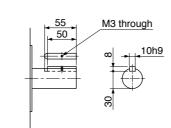


Dimensions



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

Key way dimensions



[Unit: mm]

(a) Encoder connector

<Cautions>

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

Special Order Product

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

Please contact us for more information

Specifications

				AC200 V		
M-4	-1	IP65		MHME402GC□M	MHME402SC	
Motor mode	9I *1	IP67		-	-	
A II I. I .	Model	A5II serie	S	MFDK	TB3A2	
Applicable driver	№2 No.	A5IIE ser	ies	MFDKTB3A2E	_	
unver	Fr	ame sym	bol	F-fra	ame	
Power supp	oly capacit	y	(kVA)	6	.0	
Rated outp	ut		(W)	40	00	
Rated torqu	ıe		(N·m)	19).1	
Momentary	Max. peal	k torque	(N·m)	57.3		
Rated current (A(rms			A(rms))	21.0		
Max. current (A(o		(A(o-p))	89			
Regenerativ	e brake	Without option		17		
frequency (times/min) Note)1		DV0P4	285×2	125		
Rated rotat	ional spee	d	(r/min)	2000		
Max. rotation	onal speed		(r/min)	3000		
Moment of	inertia	Without	brake	112		
of rotor (×1	0 ⁻⁴ kg·m²)	With brake		114		
Recommer ratio of the			tia Note)3	5 times	or less	
Rotary encoder specification		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.

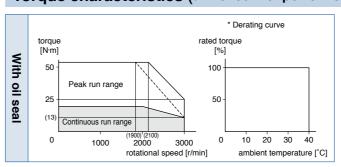
Static friction torque (N·m)	24.5 or more
Engaging time (ms)	80 or less
Releasing time (ms) Note)4	25 or less
Exciting current (DC) (A)	1.3±10 %
Releasing voltage (DC) (V)	2 or more
Exciting voltage (DC) (V)	24±2.4

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

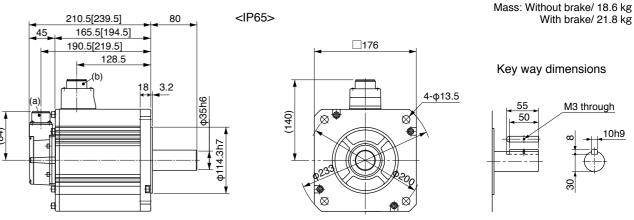
		Radial load P-direction (N)	1666
	During assembly	Thrust load A-direction (N)	784
	assembly	Thrust load B-direction (N)	980
	During operation	Radial load P-direction (N)	784
		Thrust load A, B-direction (N)	343

- 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



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

[Unit: mm]

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

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

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

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

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

Description

Motor Specifications

Specifications

			AC200 V			
Mataumandal	IP65			MHME502GC□M	MHME502SC□M	
Motor model *1		IP67		-	-	
A	Model	A5II series		MFDK [*]	TB3A2	
Applicable driver *2	No.	A5IE serie	s	MFDKTB3A2E	_	
unver	Fr	ame symb	ol	F-fra	ame	
Power supply	capacit	/	(kVA)	7.	.5	
Rated output			(W)	50	00	
Rated torque			(N·m)	23	3.9	
Momentary Ma	ax. peal	k torque	(N·m)	71.6		
Rated current		(A	(rms))	25.9		
Max. current		()	A(o-p))	110		
Regenerative b	rake	Without option		10		
frequency (times/r	min) Note)1	DV0P4285×2		76		
Rated rotation	al spee	d	(r/min)	2000		
Max. rotationa	l speed		(r/min)	3000		
Moment of ine		Without I	brake	162		
of rotor (×10 ⁻⁴	kg·m²)	With br	ake	164		
Recommended moment of inertia ratio of the load and the rotor Note)3			5 times or less			
Rotary encoder specifications Note)5			20-bit Incremental	17-bit Absolute		
R	esolutio	n per single	e turn	1048576	131072	

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

Please contact us for more information.

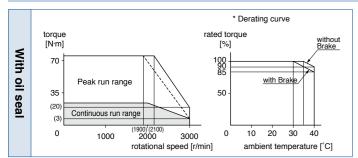
24.5 or more
80 or less
25 or less
1.3±10 %
2 or more
24±2.4

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

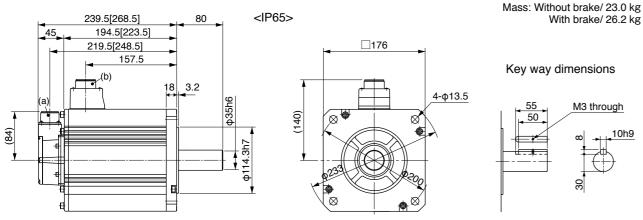
.	Radial load P-direction (N)	1666
During assembly	Thrust load A-direction (N)	784
	Thrust load B-direction (N)	980
During	Radial load P-direction (N)	784
operation	Thrust load A, B-direction (N)	343

- 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.

A5 Family

Motor Specification

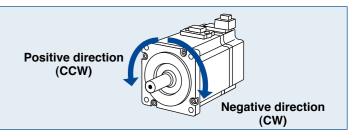
Environmental Conditions

Item		Conditions		
Ambient temperature *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)		
Vibration	Motor only	50 W to 5.0 kW : Lower than 49 m/s² (5 G) at running, 24.5 m/s² (2.5 G) at stall 6.0 kW to 15.0 kW : Lower than 24.5 m/s² (2.5 G) at running, 24.5 m/s² (2.5 G) at stall		
Impact	Motor only	Lower than 98 m/s ² (10 G)		
		MSMD, MHMD, MSMJ, MHMJ (except rotating portion of output shaft and readwire end.)		
Enclosure rating (Motor	IP65 *3	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.

Description

[At AC400 V of power voltage]

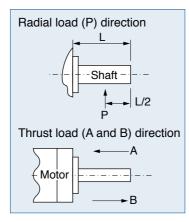
Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as 1/(m+1), where m=load moment of inertia/ rotor moment of inertia.
- When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
- Power supply voltage is AC460 V (at 400 V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/460) relative to the value in the table.
- When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
- Note) 2. If the effective torque is within the rated torque, there is no limit in generative brake.
- Note) 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
- Note) 4. Releasing time values represent the ones with DC-cutoff using a varistor.
- Note) 5. The 17-bit absolute encoder can also be used as a 17-bit incremental encoder.

Permissible Load at Output Shaft

The radial load is defined as a load applied to the output shaft in the right-angle direction. This load is generated when the gear head is coupled to the machine using a chain, belt, etc., but not when the gear head is directly connected to the coupling. As shown in the right figure, the permissible value is determined based on the load applied to the L/2 position of the output shaft. The thrust load is defined as a load applied to the output shaft in the axial direction.

Because the radial load and thrust load significantly affect the life of the bearing, take care not to allow the load during operation to exceed the permissible radial load and thrust load shown in the table below.



Built-in Holding Brake

In the applications where the motor drives the vertical axis, this brake would be used to hold and prevent the work (moving load) from falling by gravity while the power to the servo is shut off.

Use this built-in brake for "Holding" purpose only, that is to hold the stalling status. Never use this for "Brake" purpose to stop the load in motion.

Output Timing of BRK-OFF Signal

- For the brake release timing at power-on, or braking timing at Servo-OFF/Servo-Alarm while the motor is in motion, refer to the Operating Instructions (Overall).
- With the parameter, Pr4.38 (Setup of mechanical brake action while the motor is in motion), you can set up a time between when the motor enters to a free-run from energized status and when BRK-OFF signal turns off (brake will be engaged), when the Servo-OFF or alarm occurs while the motor is in motion. For details, download a copy of the instruction manual from our website.

-Notos

- 1. The lining sound of the brake (chattering and etc.) might be generated while running the motor with built-in brake, however this does not affect any functionality.
- 2. Magnetic flux might be generated through the motor shaft while the brake coil is energized (brake is open). Pay an extra attention when magnetic sensors are used nearby the motor.

· 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 total work × 10 ³ J	Permissible angular acceleration rad/s²
MSMD	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	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	50 W, 100 W	0.29 or more	0.002	35 or less	20 or less	0.3	1 V or more	39.2	4.9	
	200 W, 400 W	1.27 or more	0.018	50 or less	15 or less	0.36		137	44.1	30000
	750 W(200 V)	2.45 or more	0.075	70 or less	20 or less	0.42	24 ±1.2	196	147	
	750 W(400 V)	2.5 or more				0.7				
MSME	1.0 kW, 1.5 kW, 2.0 kW	7.8 or more	0.33	50 or less	15 or less (100)	0.81	2 V or more	392	490	10000
	3.0 kW	11.8 or more		80 or less			24 ±2.4			10000
	4.0 kW, 5.0 kW	16.2 or more	1.35	110 or less	50 or less (130)	0.9		1470	2200	
	400 W(400 V), 600 W(400 V)	2.5 or more		50 or less	15 or less	0.7		392	490	
	1.0 kW	4.9 or more	1.35	80 or less	70 or less (200)	0.59		588	780	10000
	1.5 kW, 2.0 kW	13.7 or more		100 or less	50 or less	0.79	2 V or more 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 24 ±2.4	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			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		2900	5440
	3.0 kW	58.8 or more	4.7	150 or less	50 or less (130)	1.4	24 ±2.4	1372		0110
	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
МНМЕ	1.5 kW	13.7 or more	1.00	100 or less	50 or less (130)	0.79	2 V or more	1176	1500	10000
	2.0 kW~5.0 kW	24.5 or more	4.7	80 or less	25 or less (200)	1.3	24 ±2.4	1372	2900	5440
	7.5 kW	58.8 or more		150 or less	50 or less	1.4				5000

- Releasing time values represent the ones with DC-cutoff using a varistor.
 Values in () represent those measured by using a diode (V03C by Hitachi, Ltd.)
- · Above values (except static friction torque, releasing voltage and excitation current) represent typical values.
- Backlash of the built-in holding brake is kept ±1° or smaller at ex-factory point.
- Service life of the number of acceleration/deceleration with the above permissible angular acceleration is more than 10 million times. (Life end is defined as when the brake backlash drastically changes.)

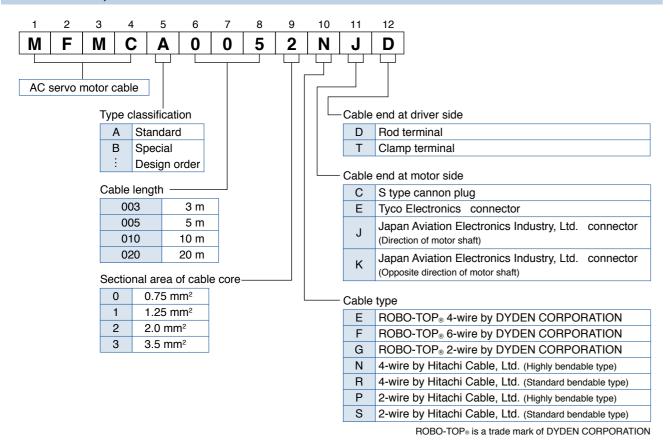


Ε 0 5 C Α 0 Type classification MFECA: Encoder cable Cable length 0030 3 m 0050 5 m 0100 10 m 0200 20 m Cable type E PVC cable with shield by Oki Electric Cable Co., 0.20 mm² × 4P(8-wire), 3P(6-wire) M Hitachi Cable, Ltd. Highly bendable type T Hitachi Cable, Ltd. Standard bendable type Cable end (Encoder side) A Tyco Electronics connector J Japan Aviation Electronics Industry, Ltd. connector (Direction of motor shaft) K Japan Aviation Electronics Industry, Ltd. connector (Opposite direction of motor shaft) S "S" shaped cannonplug T Japan Aviation Electronics Industry, Ltd. plug connector Cable end (Driver side) D Connector (Incremental)

Motor Cable, Brake Cable

E Connector (Absolute)

M Connector (MSMD, MHMD)

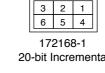


Specifications of Motor connector

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.)

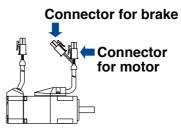
Connector for encoder

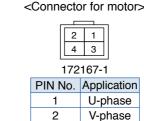


			,		PIN No.	Application
	3	2	1		1	NC
	6	5	4		2	PS
L				J	3	PS
172168-1				4	E5V	
O.	-bit I	ncre	emen	ital	5	E0V
					6	FG(SHIELD

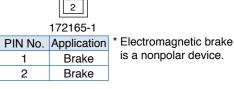
			,		PIN No.	Application	
	3	2	1		1	BAT+	
	6	5	4		2	BAT-	
9 8 7				3	FG(SHIELI		
470400 4					4 PS		
172169-1				_	5	PS	
17-bit Absolute			е	6	NC		
					7	E5V	
					8	E0V	
ng to NC.				9	NC		

<Remarks> Do not connect anything to





3



<Connector for brake>

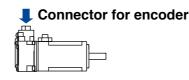
• When the motors of <MSME (50 W to 750 W (200 V))> are used, they are connected as shown

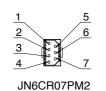
W-phase

Ground

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.

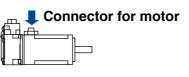


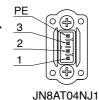


20-bit Incremental			17-bit A	Absolute	
PIN No.	Application		PIN No.	Application	
1	FG(SHIELD)		1	FG(SHIELD)	
2	_		2	BAT-	
3	E0V		3	E0V	
4	PS		4	PS	
5	_		5	BAT+	
6	E5V		6	E5V	
7	PS		7	PS	

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

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



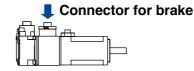


PIN	No.	Application
	1	U-phase
	2	V-phase
	3	W-phase
F	Έ	Ground

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 is
2	Brake	a nonpolar device.

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

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

Encoder Cable

Part No.

* It doesn't correspond to IP65 and IP67.

MFECA0 * * 0EAM

A5 Family

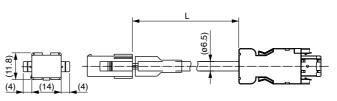
Options

W

[Unit: mm]

motor output	MSMJ	200 W to 750 W,	MHMJ	200 W to 750 W
				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	Type Floatronics	10	MFECA0100EAM
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.		

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) *							

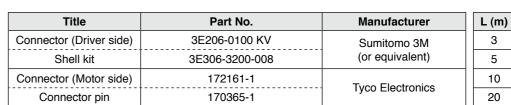
* Battery is not included. Please buy the absolute encoder battery "DV0P2990" separately.

			[
L	L		
	110	300	
	1		
		(80)	
		<u></u>	
	 		L
		<u> </u>	
	<u> </u>	' '	
(4) (14) (4)			

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	Type Flectronics	10	MFECA0100EAE
Connector pin	170365-1	Tyco Electronics	20	MFECA0200EAE
Cable	0.20 mm ² ×4P (8-wire)	Oki Flectric Cable Co. Ltd.		

Part No.	MFECA0 * * 0EAD	Compatible motor output		50 W to 750 W, 200 W to 750 W,				
Specifications	For 17-bit incremental encoder (Without battery box)							

[Unit: mm]



0.20 mm²×3P (6-wire)

Cable

5 MFECA0050EAD MFECA0100EAD 10 20 MFECA0200EAD Oki Electric Cable Co., Ltd.

3

Part No.

MFECA0030EAD

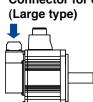
Specifications of Motor connector

• When the motors of <MSME (750 W(400 V), 1.0 kW to 5.0 kW), MDME, MGME, MHME> are used, they are connected as shown below.

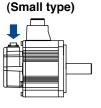
Connector: Made by Japan Aviation Electronics Industry, Ltd. (The figures below show connectors for the motor.)

Connector for encoder





IP67 motor Connector for encoder



<encoder connector="" for="" ip65="" motor=""></encoder>

H G F N/MS3102A20-29P

20-bit Incremental		17-bit Absolute		
PIN No.	Application	PIN No.	Application	
Α	NC	Α	NC	
В	NC	В	NC	
С	NC	С	NC	
D	NC	D	NC	
Е	NC	E	NC	
F	NC	F	NC	
G	E0V	G	E0V	
Н	E5V	Н	E5V	
J	FG(SHIELD)	J	FG(SHIELD)	
K	PS	K	PS	
L	PS	L	PS	
М	NC	M	NC	
N	NC	N	NC	
Р	NC	Р	NC	
R	NC	R	NC	
S	NC	S	BAT-	
Т	NC	Т	BAT+	

<Encoder connector for IP67 motor>



JN2AS10ML3-R

20-bit Incremental		17-bit <i>l</i>	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>

* Electromagnetic brake

is a nonpolar device.

Do not connect anything to NC.

[6.0 kW or more]

<Motor>

Connector for motor Connector

JL04V-2E32-17PE-B-R

MDME 7.5 kW to 15.0 kW

PIN No. Application

U-phase

V-phase

W-phase

Ground

MGME 6.0 kW

MHME 7.5 kW

С

D

<Brake>

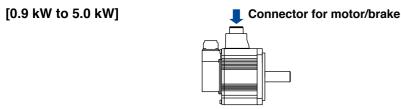
MGME 6.0 kW

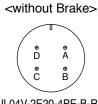
MHME 7.5 kW

D

for brake

Connector for motor/brake

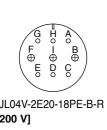




D A B C B	⊕
L04V-2E20-4PE-B-R	JL04V-2E20-18
ISME 750 W(400 V),	[200 V]
1.0 kW to 2.0 kW	MSME 1.0 kW to

MSN	ИΕ	750 W(400 V),	[200 V]
		1.0 kW to 2.0 kW	MSME 1.0 kW
MDI	ИΕ	400 W (400 V),	MDME 1.0 kW
		600 W (400 V),	MFME* 1.5 kW
		1.0 kW to 2.0 kW	MGME 0.9 kW
MGI	ИE	0.9 kW	MHME 1.0 kW
MHI	ИE	1.0 kW to 1.5 kW	_

	_			
L04HV-2E22-22PE-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 MHME 2.0 kW to 5.0 kW			Н	Brake
			Α	NC
INITINIE 2.0 KW to 5.0 KW			F	U-phase
PIN No.	Application		I	V-phase
Α	U-phase		В	W-phase
B V-phase			Е	Ground
С	W-phase		D	Ground
D	Ground		С	NC



MSI to 2.0 kW ME 1.0 kW to 2.0 kW MG ME 1.0 kW to 1.5 kW MH

<with Brake>

0 V]	[400 V]			
SME 3.0 kW to 5.0 kW	MSME 750 W,			
OME 3.0 kW to 5.0 kW	1.0 kW to 5.0 kV			
ME* 2.5 kW, 4.5 kW	MDME 400 W, 600 W,			
GME 2.0 kW to 4.5 kW	1.0 kW to 5.0 kV			
HME 2.0 kW to 5.0 kW	MFME* 1.5 kW to 4.5 kV			
_	MGME 0.9 kW to 4.5 kV			
	MHME 1.0 kW to 5.0 kV			
DIMAN Analination				

JL04V-2E24-11PE-B-R

Brake Brake
NC
-phase
-phase
/-phase
round
Ground

* MFME is common to with or without brake.	
<remarks></remarks>	

Do not connect anything to NC.

* Electromagnetic brake
is a nonpolar device.

N/MS3102A 14S-2P

MDME 7.5 kW to 15.0 kW

PIN No. Application

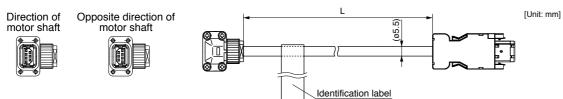
Brake Brake

NC

NC

Encoder Cable

* It doesn't correspond to IP65 and IP67.

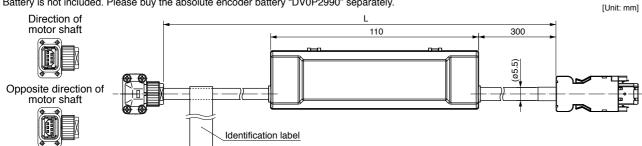


Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN6FR07SM1	Japan Aviation
Connector pin	LY10-C1-A1-10000	Electronics Ind.
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFECA0030MJD
5	MFECA0050MJD
10	MFECA0100MJD
20	MFECA0200MJD
	3 5 10

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

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

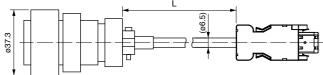


Title	Part No.	Manufacturer
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M
Shell kit	3E306-3200-008	(or equivalent)
Connector (Motor side)	JN6FR07SM1	Japan Aviation
Connector pin	LY10-C1-A1-10000	Electronics Ind.
Cable	AWG24 4-wire, AWG22 2-wire (ø5.5)	Hitachi Cable, Ltd.

L (m)	Part No.(ex.)
3	MFECA0030MJE
5	MFECA0050MJE
10	MFECA0100MJE
20	MFECA0200MJE

[Unit: mm]

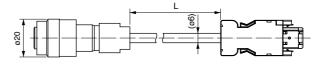
Part No.	MFECA0 * * 0ESD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP65 Motor)
Specifications	For 20-bit incremental encoder (Without battery box)		



<u> </u>		
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 ×3P (6-wire)	Oki Electric Cable Co., Ltd.

	L (m)	Part No.
	3	MFECA0030ESD
	5	MFECA0050ESD
	10	MFECA0100ESD
	20	MFECA0200ESD
٦		

Part No.	MFECA0 * * 0ETD	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V), MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)
Specifications	For 20-bit incremental encoder (Without battery box)		

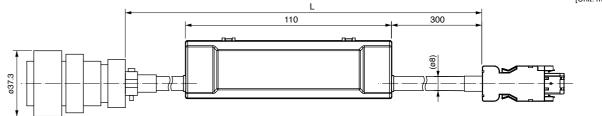


Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	3	MFECA0030ETD
Shell kit	3E306-3200-008	(or equivalent)	5	MFECA0050ETD
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	10	MFECA0100ETD
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	20	MFECA0200ETD
Cable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

[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 No.	MFECA0 * * 0ETE	Compatible motor output	MDME 400 W(400 V), MDME 600 W(400 V) MSME 750 W(400 V) 0.9 kW to 15.0 kW (IP67 Motor)	
Specifications	For 17-bit absolute encoder (With battery box) *			

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

s not included. Flease buy t	ne absolute encoder battery	L Separately.	-1	[Unit: mm]
	- I-	110	300	
020			(90)	

Title	Part No.	Manufacturer	
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M	
Shell kit	3E306-3200-008	(or equivalent)	
Connector (Motor side)	JN2DS10SL1-R	Japan Aviation	
Connector pin	JN1-22-22S-PKG100	Electronics Ind.	
Cable	0.2 mm ² ×3P (6-wire)	Oki Electric Cable Co., Ltd.	-

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

189

[Unit: mm]

Motor Cable (without Brake)

* It doesn't correspond to IP65 and IP67.

=10

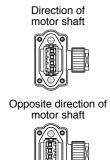
Title	Part No.	Manufacturer	
Connector	172159-1	Tugo Flootronico	
Connector pin	170366-1	Tyco Electronics	
Rod terminal	AI0.75-8GY	Phoenix Contact	
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	
Cable	ROBO-TOP 600V 0.75mm ² 4-wire	DYDEN CORPORATION	

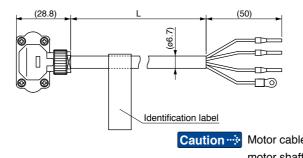
L (m)	Part No.
3	MFMCA0030EED
5	MFMCA0050EED
10	MFMCA0100EED
20	MFMCA0200EED

	MFMCA0 * * 0NJD (Highly bendable type, Direction of motor shaft)		MSME 50 W to 750 W(200V)
Part 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]





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

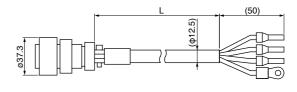
Parting. INFINICAC 2	ECD Applicable model	MFME	1.5 kW(200 V)
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Title	Part No.	Manufacturer
Connector	JL04V-6A20-18SE-EB-R	Japan Aviation
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated round terminal	N2-M4	J.S.1 Wilg. Co., Lta.
Cable	PORO-TOP 600V 2 0mm ² 4-wire	DADENI COBBOBATIONI

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

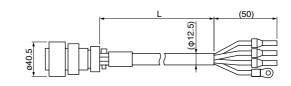
MSME 750 W(400 V), 1.0 kW to 2.0 kW, Applicable MDME 400 W(400 V), 1.0 kW to 2.0 kW MHME 1.0 kW to 4.5 kW MAN 1.0 kW to 2.0 kW MFMCD0 * * 2ECD Part No. MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V and 400 V commonness)

[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		

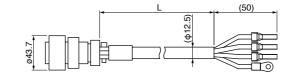
nrt No. MFMCE0 * * 2ECD	Applicable model	MHME 2.0 kW (200 V and 400 V commonness)	
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Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	7-6A22-22SE-EB-R Japan Aviation		MFMCE0032ECD
Cable clamp	JL04-2022CK(14)-R	e)-R Electronics Ind.		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	BOBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

Part No.	MFMCF0 * * 2ECD	Applicable model	MFME	1.5~kW(400~V),~2.5~kW(200~V~and~400~V~commonness)
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[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No
Connector	JL04V-6A24-11SE-EB-R	E-EB-R Japan Aviation		MFMCF003
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCF005
Rod terminal	NTUB-2	J.S.T Mfg. Co., Ltd.	10	MFMCF010
Nylon insulated round terminal	N2-M4	J.S.1 Milg. Co., Ltd.	20	MFMCF020
Cable	ROBO-TOP 600 V 2.0 mm ² 4-wire	DYDEN CORPORATION		

	L (m)	Part No.
	3	MFMCF0032ECD
	5	MFMCF0052ECD
]	10	MFMCF0102ECD
	20	MFMCF0202ECD

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

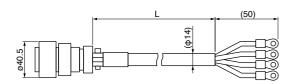
A5 Family

Options

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

Part No. MFMCA0 * * 3ECT

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

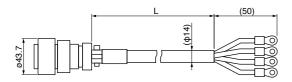


Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JL04V-6A22-22SE-EB-R	Japan Aviation	3	MFMCA0033ECT
Cable clamp	JL04-2022CK(14)-R	Electronics Ind.	5	MFMCA0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCA0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCA0203ECT

Part No.	N/I = N/IC = 1)(1 * * * 3 = C = 1	Applicable model	MFME 4.5 kW (200 V and 400 V commonness)
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[Unit: mm]

[Unit: mm]



Title	Title Part No.		L (m)	Part No.
Connector	JL04V-6A24-11SE-EB-R	Japan Aviation	3	MFMCD0033ECT
Cable clamp	JL04-2428CK(17)-R	Electronics Ind.	5	MFMCD0053ECT
Nylon insulated round terminal	N5.5-5	J.S.T Mfg. Co., Ltd.	10	MFMCD0103ECT
Cable	ROBO-TOP 600 V 3.5 mm ² 4-wire	DYDEN CORPORATION	20	MFMCD0203ECT

Part No.	MFMCA0 * * 2FCD	Applicable model	MDME MFME MHME	1.0 kW to 2.0 kW(200 V), 1.0 kW to 2.0 kW(200 V), 1.5 kW(200 V), 1.0 kW(200 V) to 1.5 kW(200 V) 0.9 kW(200V)	
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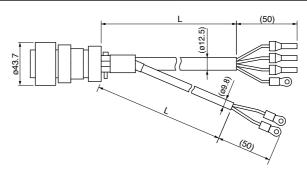
(50)

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

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

Part No.	MFMCE0 * * 2FCD	Applicable model	MSME 750 W(400 V) to 2.0 kW(400 V), MDME 400 W(400 V) to 2.0 kW(400 V), MFME 1.5 kW(400 V), 2.5 kW(200 V/400 V), MGME 0.9 kW(400 V) MHME 1.0 kW(400 V), 1.5 kW(400 V), 2.0 kW(200 V/400 V)
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[Unit: mm]



Title		Part No.	Manufacturer
Connector		JL04V-6A24-11SE-EB-R	Japan Aviation
Cable clamp		JL04-2428CK(17)-R	Electronics Ind.
Rod termina	al	NTUB-2	J.S.T Mfg. Co., Ltd.
Nylon insulated	Earth	N2-M4	LC T Mfa Co Ltd
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

Part No.			
MFMCE0032FCD			
MFMCE0052FCD			
MFMCE0102FCD			
MFMCE0202FCD			

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Brake Cable

Part No. MFMCB0 * * 0GET

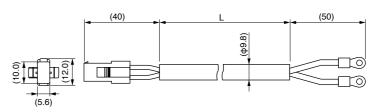
A5 Family Options

* It doesn't correspond to IP65 and IP67.

MSMD 50 W to 750 W, MHMD 200 W to 750 W

MSMJ 200 W to 750 W, MHMJ 200 W to 750 W

[Unit: mm]

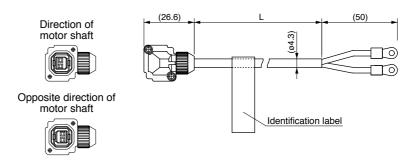


Applicable model

Title Part No. Man		Manufacturer	L (m)	Part No.
Connector	172157-1	Type Floatronics	3	MFMCB0030GET
Connector pin	170366-1, 170362-1	Tyco Electronics	5	MFMCB0050GET
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100GET
Cable	ROBO-TOP 600 V 0.75 mm ² 2-wire	DYDEN CORPORATION	20	MFMCB0200GET

	MFMCB0 * * 0PJT (Highly bendable type, Direction of motor shaft)		
Part No.	MFMCB0 * * 0PKT (Highly bendable type, Opposite direction of motor shaft)	Applicable	MSME 50 W to 750 W
Part No.		model	(200 V)
	MFMCB0 * * 0SKT (Standard bendable type, Opposite direction of motor shaft)		(200 1)

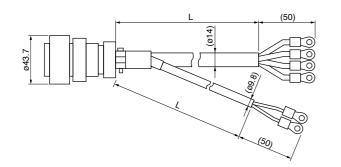
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	JN4FT02SJMR	Japan Aviation	3	MFMCB0030PJT
Connector pin	ST-TMH-S-C1B-3500	Electronics Ind.	5	MFMCB0050PJT
Nylon insulated round terminal	N1.25-M4	J.S.T Mfg. Co., Ltd.	10	MFMCB0100PJT
Cable	AWG22 2-wire (ø4.3)	Hitachi Cable, Ltd.	20	MFMCB0200PJT

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

Part No. MFMCA0 * * 3FCT			MSME	3.0 kW to 5.0 kW	, MDME	3.0 kW to 5.0 kW
	MEMCAO**3ECT	Applicable	MFME	4.5 kW,	MHME	3.0 kW to 5.0 kW
rait NO.	MFMCAU - 3FC1	model	MGME	2.0 kW to 4.5 kW	'	
			(All mode	l 200 V and 400 V com	monness)	



Title		Part No.	Manufacturer	
Connector Cable clamp		JL04V-6A24-11SE-EB-R	Japan Aviation	
		JL04-2428CK(17)-R	Electronics Ind.	
Nylon insulated	Earth	N5.5-5	LC T Mfa Co Ltd	
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 3.5 mm ² 6-wire	DYDEN CORPORATION	

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

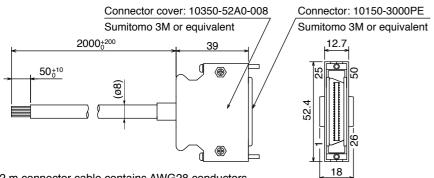
[Unit: mm]

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A5 Family

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				Pin No.	color			
FIII NO.	COIOI	FIII NO.	COIOI	FIII NO.	COIOI	FIII NO.	COIOI	FIII NO.	COIOI
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

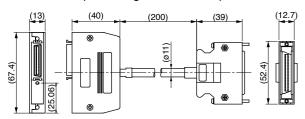
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Interface cables for old product (XX series or V series) can be connected to the current product by using the connector conversion cable shown below.

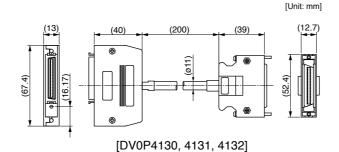
DV0P4120	MINAS XX → A5II, A5 series (A4, A series) for position control/ velocity control
DV0P4121	MINAS XX → A5II, A5 series (A4, A series) for torque control
DV0P4130	MINAS V → A5II, A5 series (A4, A series) for position control
DV0P4131	MINAS V → A5II, A5 series (A4, A series) for velocity control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

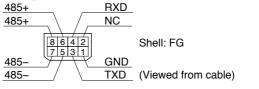
Part No. DV0PM20024

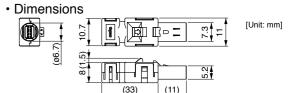
Components

[Unit: mm]

Title	Part No.	Manufacturer	Note
Connector	2040008-1	Tyco Electronics	For Connector X2 (8-pins)

• Pin disposition of connector, connector X2





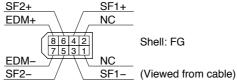
Connector Kit for Safety (Excluding A5IE, A5E Series)

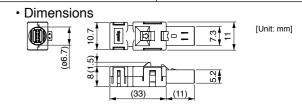
Part No. DV0PM20025

Components

<u> </u>			
Title	Part No.	Manufacturer	Note
Connector	2013595-1	Tyco Electronics	For Connector X3 (8-pins)

Pin disposition of connector, connector X3





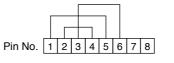
Safety bypass plug (Excluding A5IE, A5E Series)

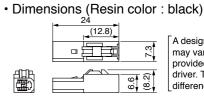
Part No. DV0PM20094

· 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.)





A design and color may vary from the plug provided together with driver. There is no difference in function.

[Unit: mm]

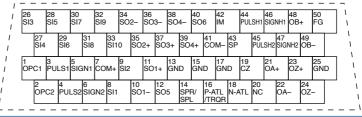
Connector Kit for Interface

Part No. DV0P4350

· Components

Title	Part No.	Number	Manufacturer	Note
Connector	10150-3000PE	1	Sumitomo 3M	For Connector X4
Connector cover	10350-52A0-008	1	(or equivalent)	(50-pins)

• Pin disposition (50 pins) (viewed from the soldering side)



- 1) Check the stamped pin-No. on the connector body while making a wiring.
- 2) For the function of each signal title or its symbol, refer to the operating manual.
- 3) Do not connect anything to NC pins in the above table.

<Remarks>

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

Connector Kit for 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

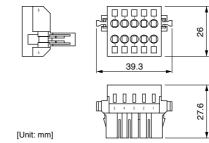
Title	Part No.	Number	Manufacturer	Note
Connector	05JFAT-SAXGF	1	LC T Mfg. Co. Ltd	For Connector XA
Handle lever	J-FAT-OT	2	J.S.T Mfg. Co., Ltd.	For Connector XA

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	LOTMS On 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	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		

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

Components

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

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

Components

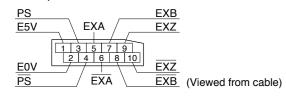
Title	Part No.	Number	Manufacturer	Note
Connector	03JFAT-SAYGSA-L	1	J.S.T Mfg. Co., Ltd.	For Connector XA
Handle lever	J-FAT-OT-L	2		

Connector Kit for External Scale (Excluding A5IE, A5E Series)

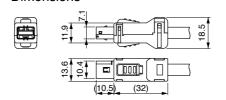
Components

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

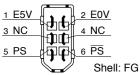
PM20010
,

Components

Title	Part No.	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	Sumitomo 3M (or equivalent)	For Connector X6
Shell kit	3E306-3200-008		

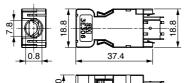
<Shell kit>

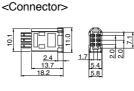
• Pin disposition of connector, connector X6



(Viewed from cable)

Dimensions





[Unit: mm]

[Unit: mm]

Connector Kit for Analog Monitor Signal

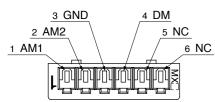
Part No. DV0PM20031

Components

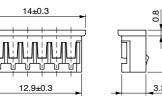
Title	Part No.	Number	Manufacturer	Note
Connector	510040600	1	Molex Inc	For Connector X7 (6-pins)
Connector pin	500118100	6		

199

• Pin disposition of connector, connector X7



Dimensions



<Remarks>

Connector X1: use with commercially available cable.

· Configuration of connector X1: USB mini-B



Connector Kit

Connector Kit

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

Options

A5 Family

Connector Kit for Control Power Supply Input

Part No. | **DV0PM20053** (For D, E-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	02MJFAT-SAGF	1	LC T Mfa Co. Ltd	For Connector VD
Handle lever	MJFAT-0T	1	J.S.T Mfg. Co., Ltd.	For Connector XD

Connector Kit for Regenerative Resistor Connection (E-frame)

Part No. DV0PM20045 (For E-frame 200 V/400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-L	1	J.S.T Mfg. Co., Ltd.	For Connector XC * Jumper wire is included.
Handle lever	J-FAT-OT-L	2		

Part No. DV0PM20055 (For D-frame 400 V)

Components

Title	Part No.	Number	Manufacturer	Note
Connector	04JFAT-SAXGSA-M	1	J.S.T Mfg. Co., Ltd.	For Connector XC
Handle lever	J-FAT-OT-L	2		

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

Part No. DV0PM20046 (For E-frame 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.	For Connector AB

Part No. | **DV0PM20054** (For D-frame 400 V)

Components

Title	Part No.		Manufacturer	Note
Connector	03JFAT-SAXGSA-M	1	LC T Mfg. Co. Ltd	For Connector VP
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 (absolute encoder type)
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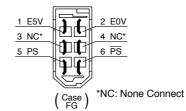
Components

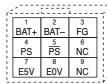
Title	Part No.		Manufacturer	Note	
Connector (Driver side)			Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit			(or equivalent)		
Connector	172161-1	1	Tues Flastranies	For Encoder cable	
Connector pin	170365-1	9	Tyco Electronics	(9-pins)	
Connector	nector 172159-1		Tyco Electronics	For Motor cable	
Connector pin	170366-1	4	Tyco Electronics	(4-pins)	

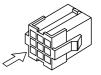
• Pin disposition of connector, • Pin disposition of connector connector X6

for encoder cable

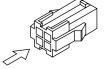
· Pin disposition of connector for motor cable











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

Part No.	DV0P4380	Applicable model		50 W to 750 W, 200 W to 750 W,		200 W to 750 W 200 W to 750 W	
		mouci	(incremental encoder type)				

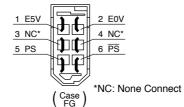
· Components

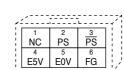
Title	Title Part No.		Manufacturer	Note	
Connector (Driver side)	`		Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit			(or equivalent)		
Connector	172160-1	1	Tues Fleetrenies	For Encoder cable	
Connector pin	170365-1	6	Tyco Electronics	(6-pins)	
Connector	172159-1	1	Type Fleetrenies	For Motor cable (4-pins)	
Connector pin	170366-1	4	Tyco Electronics		

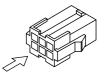
connector X6

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

· Pin disposition of connector for motor cable











Connector Kit

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

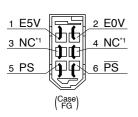
Part No. DV0PM20035 MSME 50 W to 400 W(100 V), 50 W to 750 W(200 V)

Components

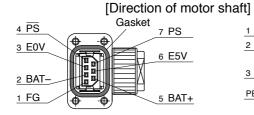
Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1 Sumitomo 3M		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008		(or equivalent)		
Encoder connector	JN6FR07SM1	1	Japan Aviation	For Encoder cable	
Socket contact	LY10-C1-A1-10000	7 Electronics Ind.		(7-pins)	
Motor connector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

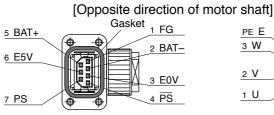
· Pin disposition of connector for motor cable

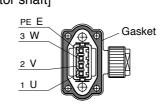


*1 NC: None Connect









* 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	3E206-0100 KV 1		For Connector X6 (6-pins)	
Shell kit	3E306-3200-008		(or equivalent)		
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-6A-20-4SE-EB-R	1	Japan Aviation	For Motor cable	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.		

<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	<ip65 motor=""> MSME 750 W (400 V), 1.0 kW to 2.0 kW MDME 400 W (400 V), 600 W (400 V), 1.0 kW to 2.0 kW</ip65>	Without brake
		MHME 1.0 kW to 1.5 kW, MGME 0.9 kW	

Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	206-0100 KV 1 Sum		For Connector VC (C nine)	
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	N/MS3106B20-29S	1	Japan Aviation	For Francisco cobla	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B20-4S	1	Japan Aviation	For Motor coble	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

art No.	DV0PM20037		<ip67 motor=""> 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 4.5 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 V6 (6 pine)	
Shell kit	kit 3E306-3200-008		(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Freedor coble	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	JL04V-6A22-22SE-EB-R	1	Japan Aviation	For Motor coble	
Cable clamp	JL04-2022CK(14)-R	1	Electronics Ind.	For Motor cable	

		<ip65 n<="" th=""><th>notor></th><th></th><th></th><th>Without</th></ip65>	notor>			Without
Part No.	Applicable model	MSME	3.0 kW to 5.0 kW,	MDME	3.0 kW to 5.0 kW	brake
	inouci	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	I kit 3E306-3200-008		(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	nector N/MS3106B20-29S 1		Japan Aviation	Fay Fysaday sabla	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector	N/MS3106B22-22S	1	Japan Aviation	Fau Matau ashla	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Motor cable	

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

•					
Title Part No.		Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	3E306-3200-008	1	(or equivalent)		
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	Fau Franklau aabla	
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.	DV0P4330	Applicable model	<ip65 motor=""> MSME 1.0 kW to 2.0 kW, MDME 1.0 kW to 2.0 kW MHME 1.0 kW to 1.5 kW, MGME 0.9 kW (All model 200 V)</ip65>	With brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector X6 (6-pins)	
Shell kit	Shell kit 3E306-3200-008		(or equivalent)	For Connector Ao (o-pins)	
Encoder connector	Encoder connector N/MS3106B20-29S		Japan Aviation	For Encoder cable	
Cable clamp	N/MS3057-12A	1	Electronics Ind.	For Encoder cable	
Motor connector N/MS3106B20-18S		1	Japan Aviation	For Motor cable	
Cable clamp	lamp N/MS3057-12A		Electronics Ind.	FOI MOLOI CADIE	

Part No.	DV0PM20039	Applicable model	<ip67 motor=""> (200V) MSME 3.0 kW to 5.0 kW, MDME 3.0 kW to 5.0 kW MFME 2.5 kW to 4.5 kW (Common to with/ without brake), MHME 2.0 kW to 5.0 kW, MGME 2.0 kW to 4.5 kW (400V) MSME 750 W to 5.0 kW, MDME 400 W to 5.0 kW MFME 1.5 kW to 4.5 kW (Common to with/ without brake), MHME 1.0 kW to 5.0 kW, MGME 0.9 kW to 4.5 kW</ip67>	brake
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Components

Title	Part No.	Number	Manufacturer	Note	
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)	
Shell kit	it 3E306-3200-008		(or equivalent)	For Connector X6 (6-pins)	
Encoder connector	connector JN2DS10SL1-R		Japan Aviation	Fau Facaday cable	
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable	
Motor connector	Motor connector JL04V-6A24-11SE-EB-R		Japan Aviation	For Motor cobla	
Cable clamp	JL04-2428CK(17)-R	1	Electronics Ind.	For Motor cable	

Part No.		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 VC (C nine)	
Shell kit	Shell kit 3E306-3200-008		(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 Ericoder Cable	
Motor connector N/MS3106B24-11S		1	Japan Aviation	For Motor cable	
Cable clamp	Cable clamp N/MS3057-16A		Electronics Ind.	FOI WIGHT 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. DV0PN	M20056 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

Componente						
Title	Part No.	Number	Manufacturer	Note		
Connector (Driver side)	3E206-0100 KV	3E206-0100 KV 1 Sumitomo 3M (or equivalent)		1 Sumitomo 3M		For Connector X6 (6-pins)
Shell kit	3E306-3200-008			For Connector Ao (o-pins)		
Encoder connector	JN2DS10SL1-R 1 Japan Aviation		Japan Aviation	For Encoder cable		
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable		
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	For Motor cable		
Cable clamp	JL04-32CK(24)-R 1 Electronics Ind.		FOI MOLOI 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.		Applicable model	<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	Title Part No.		Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For Connector VC (C nine)
Shell kit	3E306-3200-008	1	(or equivalent)	For Connector X6 (6-pins)
Encoder connector	JN2DS10SL1-R	1	Japan Aviation	For Freeder coble
Connector pin	JN1-22-22S-PKG100	5	Electronics Ind.	For Encoder cable
Motor connector	JL04V-6A32-17SE-EB-R	1	Japan Aviation	For Motor coble
Cable clamp	JL04-32CK(24)-R *	1	Electronics Ind.	For Motor cable
Brake connector	N/MS3106B14S-2S	1 Japan Aviation		For Droke cable
Cable clamp	N/MS3057-6A	1	Electronics Ind.	For Brake 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.

Connector Kit for Motor/Brake Connection

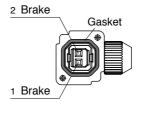
Part No.	DV0PM20040	Applicable model	MSME 50 W to 750 W
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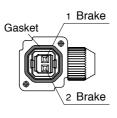
Components

Title	Part No.	Number	Manufacturer	Note
Connector	JN4FT02SJM-R	1	Japan Aviation	For brake cable
Socket contact	ST-TMH-S-C1B-3500	2	Electronics Ind.	For brake cable

• Pin disposition of connector for brake cable

[Direction of motor shaft] [Opposite direction of motor shaft]





<Remarks>

Secure the gasket in place without removing it from the connector. Otherwise, the degree of protection of IP67 will not be guaranteed.

<Remarks>

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

Mounting Bracket

A5 Family

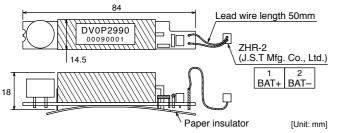
Battery for Absolute Encoder

Part No. DV0P2990

Battery for Absolute Encoder

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

· Lithium battery: 3.6 V 2000 mAh

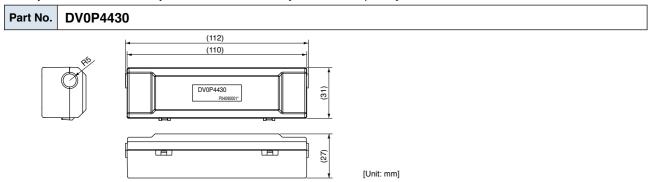


<Caution>

This battery is categorized as hazardous substance, and you may be required to present an application of hazardous substance when you transport by air (both passenger and cargo airlines).

Battery Box for Absolute Encoder *

* Battery 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.

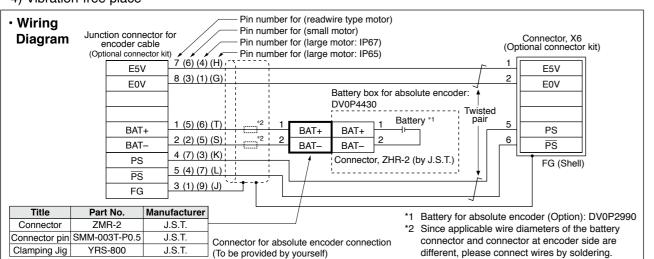
<Caution>

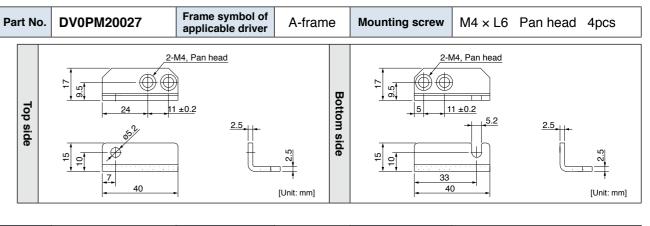
Install and fix the battery securely. If the installation and fixing of the battery is not appropriate, it may cause the wire breakdown or damage of the battery.

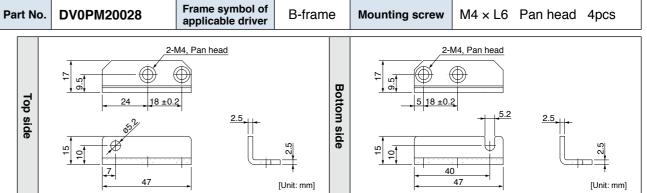
Refer to the instruction manual of the battery for handling the battery.

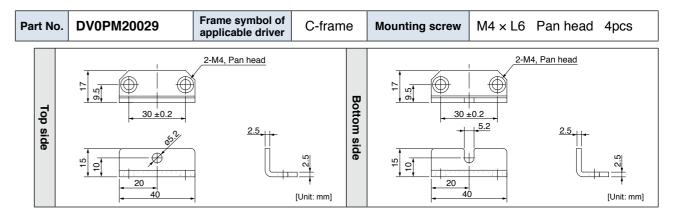
Installation Place of Battery

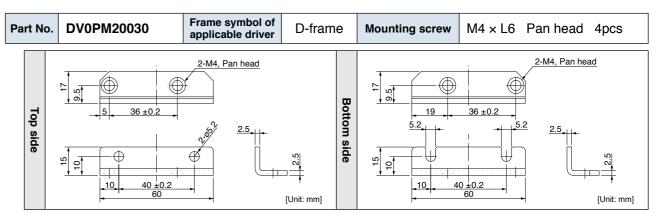
- 1) Indoors, where the products are not subjected to rain or direct sun beam.
- 2) Where the products are not subjected to corrosive atmospheres such as hydrogen sulfide, sulfurous acid, chlorine, ammonia, chloric gas, sulfuric gas, acid, alkaline and salt and so on, and are free from splash of inflammable 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)

Options

Activation

temperature of

built-in thermal protector

DV0PM20059 Manufacturer : Iwaki Musen Kenkyusho

Part No.

DV0P4280

DV0P4281

DV0P4282

DV0P4283

DV0P4284

DV0P4285

DV0PM20048

DV0PM20049

DV0PM20058

External Regenerative Resistor

Manufacturer's

part No.

RF70M

RF70M

RF180B

RF180B

RF240

RH450F

RF240

RH450F

RH450F × 6

RH450F × 6

*1 Power with which the driver can be used without activating the built-in thermal protector.

Resistance

Ω

50

100

25

50

30

20

120

80

3.3

13.3

A built-in thermal fuse and a thermal protector are provided for safety.

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

The built-in thermal fuse blows depending on changes in heat dissipation condition, operating temperature limit, power supply voltage or load.

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

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

Mount the regenerative resistor on a machine operating under aggressive regenerating condition (high power supply voltage, large load inertia, shorter deceleration time, etc.) and make sure that the surface temperature will not exceed 100 °C.

Attach the regenerative resistor to a nonflammable material such as metal.

Cover the regenerative resistor with a nonflammable material so that it cannot be directly touched.

Temperatures of parts that may be directly touched by people should be kept below 70 °C.

*2 Terminal block with screw tightening torque as shown below.

T1, T2, 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

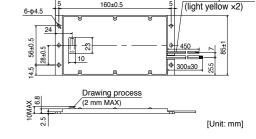
Use the cable with the same diameter as the main circuit cable. (Refer to P.19).

*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					
Е		DV0P4284 × 2 in parallel or DV0P4285	DV0PM20049					
F	_	DV0P4285 × 2 in parallel	DV0PM20049 × 2 in parallel					
G		DV0P4285 × 3 in parallel	DV0PM20049 × 3 in parallel					
Н		DV0P4285 × 6 in parallel or DV0PM20058	DV0PM20049 × 6 in parallel or DV0PM20059					

DV0P4280, DV0P4281 2-φ4.5 thermal protector (light yellow ×2) [Unit: mm]

DV0P4282, DV0P4283



thermal protector

Options Fig.2 Α (Mounting pitch) · Wiring of the reactor <3-Phase> · Wiring of the reactor <Single phase> Servo Power supply Servo side side driver Power side supply : Center-to-center distance F: Center-to-center

distance on slotted hole

[Unit: mm]

	Part No.	A	В	С	D	E(Max)	F	G	н	ı	Inductance (mH)	Rated current (A)
	DV0P220	65±1	125±1	(93)	136мах	155	70+3/-0	85±2	4-7φ×12	M4	6.81	3
	DV0P221	60±1	150±1	(113)	155мах	130	60+3/-0	75±2	4-7φ×12	M4	4.02	5
Eig 1	DV0P222	60±1	150±1	(113)	155мах	140	70+3/-0	85±2	4-7φ×12	M4	2	8
Fig.1	DV0P223	60±1	150±1	(113)	155мах	150	79+3/-0	95±2	4-7φ×12	M4	1.39	11
	DV0P224	60±1	150±1	(113)	160мах	155	84+3/-0	100±2	4-7φ×12	M5	0.848	16
	DV0P225	60±1	150±1	(113)	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
Fig.2	DV0P228	55±0.7	80±1	66.5±1	110мах	95	46±2	60±2	4-5φ×10	M4	2	8
	DV0PM20047	55±0.7	80±1	66.5±1	110мах	105	56±2	70±2	4-5Φ×10	M4	1.39	11

^{*} For application, refer to P.21 to P.28 and P.153 to P.154 "Table of Part Numbers and Options".

on outer circular arc

Harmonic restraint

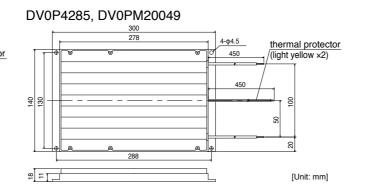
Harmonic restraint measures are not common to all countries. Therefore, prepare the measures that meet the requirements of the destination country.

With products for Japan, on September, 1994, "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" and "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers' Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. We are pleased to inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver was modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The "Guidelines for harmonic restraint on household electrical appliances and general-purpose articles" was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the "Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system" from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the

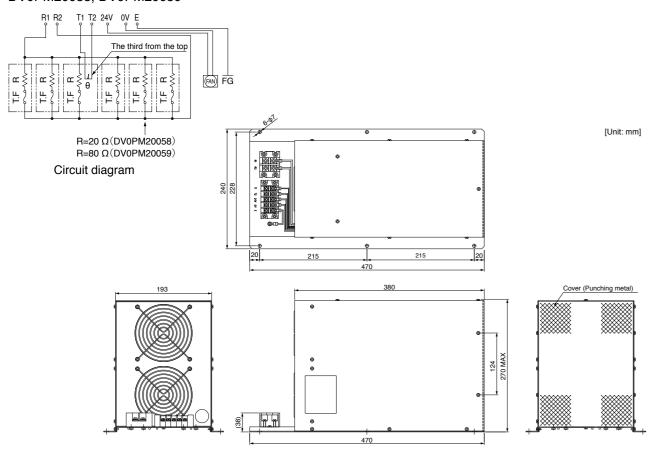
<Remarks> When using a reactor, be sure to install one reactor to one servo driver.

Surge Absorber for Motor Brake



External Regenerative Resistor

DV0PM20058, DV0PM20059



<Caution when using external regenerative resistor>

Regenerative resistor gets very hot.

Configure a circuit so that a power supply shuts down when built-in thermal protector of the regenerative resistor works. Because it is automatic reset thermal protector, please apply a self-holding circuit to the outside in order to maintain safety in case of sudden activation. During the failure of the driver, the surface temperature of the regenerative resistor may exceed the operating temperature before thermal protector starts to work.

Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.

• Be attached the regenerative resistance to non-combustible material such as metal.

- Built-in thermal fuse of regenerative resistor is intended to prevent from ignition during the failure of the driver and not intended to suppress the surface temperature of the resistor.
- Do not install the regenerative resistor near flammable materials.

	Motor	Part No.	Manufacturer	
MSMD	50 W to 750 W	Z15D271	SEMITEC Corporation	
MSMJ	200 W to 750 W	or	or NIPPON CHEMI-CON	
	50 W to 750 W	TNR15G271K	CORPORATION	
MSME	750 W (400 V) 1.0 kW to 5.0 kW	Z15D151	SEMITEC Corporation	
	400 W (400 V), 600 W (400 V)		·	
MDME	1.0 kW to 3.0 kW	NVD07SCD082	KOA Corporation	
	4.0 kW to 7.5 kW	Z15D151	SEMITEC Corporation	
	11 kW, 15 kW			
MFME	1.5 kW	NVD07SCD082	KOA Corporation	
MIFIME	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	
IVIПIVIE	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
lwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
KOA Corporation	+81-42-336-5300 http://www.koanet.co.jp/en/index.htm	
NIPPON CHEMI-CON CORPORATION	+81-3-5436-7711 http://www.chemi-con.co.jp/e/index.html	Surge absorber for holding brake
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	
KK-CORP.CO.JP	+81-184-53-2307 http://www.kk-corp.co.jp/	
MICROMETALS (Nisshin Electric Co., Ltd.)	+81-4-2934-4151 http://www.nisshin-electric.com/	Noise filter for signal lines
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Japan Aviation Electronics Industry, Ltd.	+81-3-3780-2717 http://www.jae.co.jp/e-top/index.html	
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	
J.S.T. Mfg. Co., Ltd.	+81-45-543-1271 http://www.jst-mfg.com/index_e.php	Connector
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/	
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable
DR. JOHANNES HEIDENHAIN GmbH	+81-3-3234-7781 http://www.heidenhain.de/de_EN/company/contact/	
Fagor Automation S.Coop.	+34-943-719-200 http://www.fagorautomation.com	
Magnescale Co., Ltd.	+81-463-92-7971 http://www.mgscale.com/mgs/language/english/	External scale
Mitutoyo Corporation	+81-44-813-8234 http://www.mitutoyo.co.jp/eng/	LAIGITIAI SCAIC
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/	Nata - 60
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.

21

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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MINAS E series

Leasy to Handle, Easy to Use

High-functionality Real-Time Auto-Gain Tuning (Note 1)

- Offers real automatic gain tuning for low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.

DIN-rail mounting unit (option)

- DIN-rail mounting unit allows parallel mounting with small control devices such as PLC.
- Easy to mount and easy to dismount.

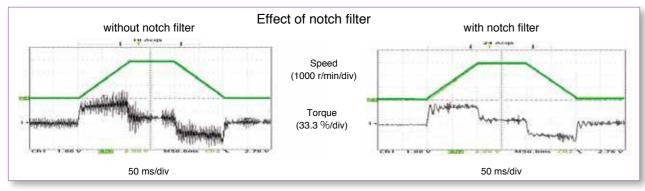
? Further Reduction of Vibration

Adaptive filter (Note1)

- Makes the notch filter frequency automatically follow the machine resonance frequency in real-time auto-gain tuning.
- Suppression of "Judder" noise of the machine, which is caused by variation of the machines or resonance frequency due to aging, can be expected.

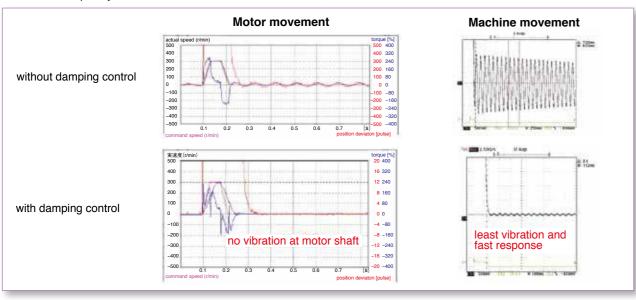
Notch filter (Note1)

- 1-channel notch filter is equipped in the driver independent from adaptive filter.
- Each of 2 filters can set up frequency and notch width, and frequency in 1Hz unit. Suppression of "Judder" noise of the machine which has multiple resonance points can be expected.



Damping control (Note1)

You can suppress vibration occurring at both starting and stopping in low stiffness machine, by manually setting up vibration frequency in 0.1 Hz unit. Note) Only applies to manual adjustment



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(Note1) Select at positioning action mode

- At high speed positioning mode (Pr02=0) Select either one of notch filter, damping control or high-functionality real-time auto- gain tuning.
 Not possible to use them all at the same time.
 Adaptive filter cannot be used.
- At high-functionality positioning mode (Pr02=1) All of notch filter, damping control, high-functionality real-time auto-gain tuning and adaptive filter can be used at the same time

3. Further Flexibility and Multiplicity

Console (Option)

- You can set up parameters, copy and make a JOG run.
- Convenient for maintenance at site.
- Refer to P.241, Options.

Command control modes

- Offers 2 command modes, "Position control" and "Internal velocity control".
- You can make a 4-speed running at preset values with parameter at internal velocity control mode.

Inrush current suppressing function

- Inrush suppressing resistor, which prevent the circuit breaker shutdown of the power supply caused by inrush current at power-on, is equipped in this driver.
- Prevents unintentional shutdown of the power supply circuit breaker in multi axis application and does not give load to the power line.

Regeneration discharging function

- Discharges the regenerative energy with external resistor, where energy is generated while stopping the load with large moment of inertia, or use in up-down operation, and is returned to the driver from the motor.
- No regenerative resistor is installed in the driver.
- It is highly recommended to install an external regenerative resistor (option).

Built-in dynamic brake

- You can select the dynamic brake action which short the servo motor windings of U, V and W, at Servo-OFF, CW/ CCW over- travel inhibition, power shutdown and trip.
- You can select the action sequence depending on the machine requirement.

Setup support software (Option)

With the setup support software, "PANATERM" via RS232 / RS485 communication port, you can monitor the running status of the driver and set up parameters.
Note: D 236 for setup support software.

Note) Refer to P.236 for setup support software.

Key-way shaft and tapped shaft end

- Easy pulley attachment and easy maintenance
- Attache screw to the tapped shaft to prevent key or pulley from being pulled out.

Wave-form graphic function

- With the setup support software, "PANATERM", you can monitor the "Command speed", "Actual speed", "Torque", "Position deviation" and "Positioning complete signal".
- Helps you to analyze the machine and shorten the setup time

Note) Refer to P.236 for setup support software.

Frequency analyzing function

- You can confirm the response frequency characteristics of total machine mechanism including the servo motor with the setup support software, "PANATERM".
- Helps you to analyze the machine and shorten the setup time

Note) Refer to P.236 for setup support software.

Torque limit switching function

- You can select 2 preset torque limit value from external input.
- Use this function for tension control or press-hold control.

Conformity to CE and UL Standards







Subject		Standard conformed	
Motor	IEC60034-1	IEC60034-5 UL1004 CSA22.2 No.100	Conforms to Low-Voltage
	EN50178	UL508C CSA22.2 No.14	Directives
	EN55011	Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	
	EN61000-6-2	Immunity for Industrial Environments	
Matau	EC61000-4-2	Electrostatic Discharge Immunity Test	l
Motor and driver	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	Conforms to references
unver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives
	IEC61000-4-5	Lightening Surge Immunity Test	1
	IEC61000-4-6 High Frequency Conduction Immunity Test		
	IEC61000-4-11	Instantaneous Outage Immunity Test	

IEC : International Electrotechnical Commission

EN : Europaischen Normen

EMC : Electromagnetic Compatibility

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.

MINAS E series **Motor Line-up**

	Motor series	Rated output (kW)	Rated rotational speed (Max. speed) (r/min)	Rotary 6 2500 P/r incremental	17bit absolute/ incremental	Brake Holding	Gear High precision	UL/ CSA	Enclosure	Features	Applications
	MUMA										
Ultra low inertia		0.05 to 0.4 0.05 0.1 0.2 0.4	3000 (5000)	0	_	0	0	0	IP65 Except shaft throughhole and connector	Small capacity Ultra low inertia	SMT machines Inserters High repetitive positioning application

Model Designation

MINAS E series

Servo Motor



Motor rated output

Symbol	Rated output
5A	50 W
01	100 W
02	200 W
04	400 W

Voltage specifications

Symbol	Specifications
1	100 V
2	200 V
Z	100 V/200 V common (50 W only)

Rotary encoder specifications

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

	TI dotal o				
	Shaft	Holding	g brake	Oil	seal
Symbol	Key-way, center tap	without	with	without	with*
S	•	•		•	
Т	•		•	•	

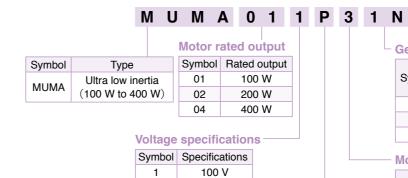
* Motor with oil seal is manufactured by order.

Design order

Symbol	Specifications
1	Standard

See P.227 for motor specifications

■ Motor with gear reducer



Rotary	encoder	specifications	

riotary cricoact opcomitations						
Symbol	Format	Pulse counts	Resolution	Wires		
Р	Incremental	2500 P/r	10000	5		

200 V

2

└ Gear reduction ration, gear type

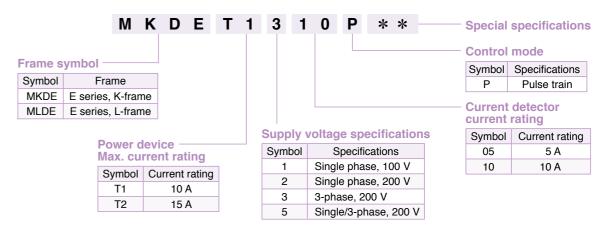
	Gear	Moto			
Symbol	reduction ratio	100	200	400	Gear type
1N	1/5	•	•	•	Cau biab
2N	1/9	•	•	•	For high accuracy
4N	1/25	•	•	•	accuracy

Motor structure

Cumbal	Shaft	Holding brak		
Symbol	Key-way	without	with	
3	•	•		
4	•		•	

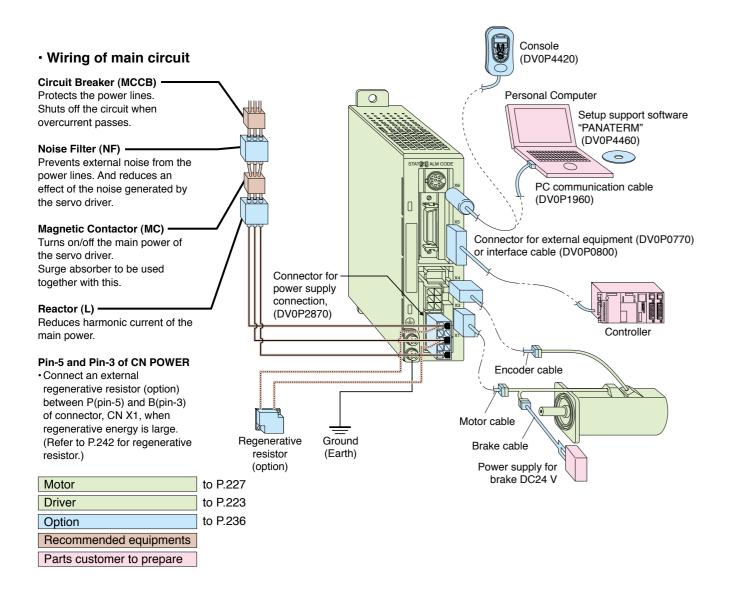
See P.232 for motor with gear reducer specifications

Servo Driver



See P.223 for driver specifications

Overall Wiring/ Driver and List of Applicable Peripheral Equipments



List of recommended peripheral equipments

_	Мо	tor	Power			Magnetic							
Power supply	Series	Output	capacity (at rated) output)	Circuit Breaker (Rated current)	Noise Filter	Contactor (Contact Composition)	Wire diameter (L1, L2, L3, U, V and W)						
Single		50 W	0.3 kVA	(F.A)	(F.A)	(F.A)	(F.A)	(F.A)	(F.A)	(F.A)		10.4	
phase,		100 W	0.4 kVA	(5 A)		10 A (3P+1a)							
100 V		200 W	0.5 kVA	(10 A)		(Ol Fla)							
		50 W	0.3 kVA	(5 A)		15 A (3P+1a)	0.75 mm ² to 0.85 mm ²						
Single		100 W	U.3 KVA		DV0P4160								
phase, 200 V	MUMA	200 W	0.5 kVA										
		400 W	0.9 kVA	(10 A)			AWGIO						
		50 W	0.01970										
3-phase		100 W	0.3 kVA	(5 A)		10 A (3P+1a)							
200 V		200 W	0.5 kVA										
		400 W	0.9 kVA	(10 A)									

- * Select the single and 3-phase common specifications corresponding to the power supplies.
- To conform to EC Directives, install a circuit breaker which conforms to IEC and UL Standards (Listed, (9) marked) between noise filter and power supply.
- For details of the noise filters, refer to P.256.

<Remarks>

· Use a copper conductor cables with temperature rating of 60 °C or higher for main power connector and ground

Use a cable for ground with diameter of 2.0 mm² (AWG14) or larger.

Carrying page								
	Part No.	Carrying page						
Console				DV0P4420	241			
Setup Support Software,			Japanese English	DV0P4460	236			
PANATERM RS232 Commu (for Connection			Cable	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 D)rive	Power Supply	DV0P2870	239			
Encoder Cable	!		MFECA0 * *	0EAM	238			
Motor Cable			MFMCA0 * *	238				
Brake Cable			MFMCB0 * *	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	DV0P3811				
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				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	Sig	nal V	Vire	DV0P1460	256			

(Note 3) Cable set (3 m) contains,

- 1) Interface cable: DV0P0800
- 2) Encoder cable (3 m): MFECA0030EAM
- 3) Motor cable (3 m) : MFMCA0030AEB
- 4) Connector kit for driver power supply connection: DV0P2870 Cable set (5 m) contains,
- 1) Interface cable: DV0P0800
- 2) Encoder cable (5 m) : MFECA0050EAM
- 3) Motor cable (5 m): MFMCA0050AEB
- 4) Connector kit for driver power supply connection : DV0P2870

■ Table of Part Numbers and Options

MINAS E Series

			2500P/r, Inc	remental					Option																
Power supply	Output (W)	Motor Note) 1	Rating/Spec. (page)	Driver	Dimensions (Frame (symbol)	Encoder Cable Note) 2	Motor Cable		Brake Cable	External Regenerative Resistor	Reactor	Noise Filter													
Single	50	MUMA5AZP1 □	227	MKDET1105P	226 (K)						DV0P227														
phase	100	MUMA011P1 \square	227	MKDET1110P	226 (K)					DV0P2890	DVUFZZI														
100 V	200	MUMA021P1 🗌	227	MLDET2110P	226 (L)						DV0P228														
	50	MUMA5AZP1 🗌	229	MKDET1505P	226 (K)																				
Single	100	MUMA012P1	229	MKDET1505P	226 (K)																				
phase 200 V	200	MUMA022P1	229	MLDET2210P	226 (L)	MEEOAOJEJEOEAA	MEECACALAGEANA	MEEOAO de de OEANA	MEEOAO # # OEAN	MEECAO * * OEAM	MEECAO	MEECAO * *OEAM	MEECAO* * OEAM		MFECA0 * * 0EAM MFMCA0 * :	MENACAC III II CAED						D)/0D4400			
	400	MUMA042P1	229	MLDET2510P	226 (L)	MFECAU* * UEAM	MFMCAU* *UAEB		MFMCB0 * * 0GET			DV0P4160													
	50	MUMA5AZP1	229	MKDET1505P	226 (K)	1																	DV0P2891	DV0P220	
	100	MUMA012P1	229	MKDET1505P	226 (K)																				
3-phase 200 V	200	MUMA022P1	229	MKDET1310P	226 (K)																				
200 4	400	MLDET251	MLDET2510P	226 (L)																					
	400	MUMA042P1 □	229	MLDET2310P	220 (L)																				

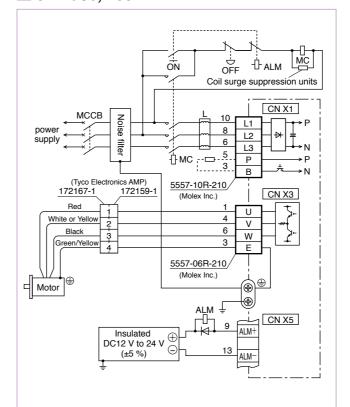
- Note) 1 Motor model number suffix:
 - S: Key way with center tap, without brake
 - T: Kew way with center tap, with brake
- Note) 2 ** represents cable length. For details, refer to P.237.

Wiring Diagram

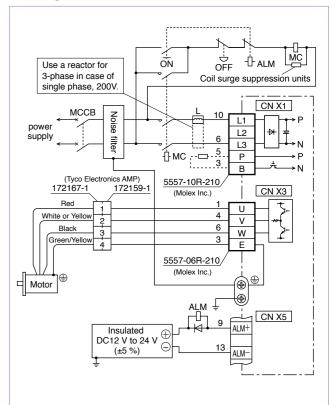
Standard Wiring Example of Main Circuit/ Encorder Wiring Diagram

Standard Wiring Example of Main Circuit

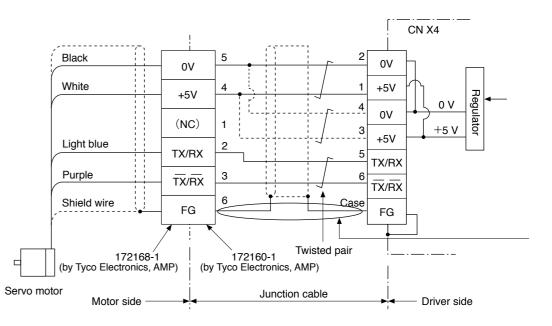
3-Phase, 200 V



■ Single Phase, 100 V / 200 V



Encorder Wiring Diagram



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

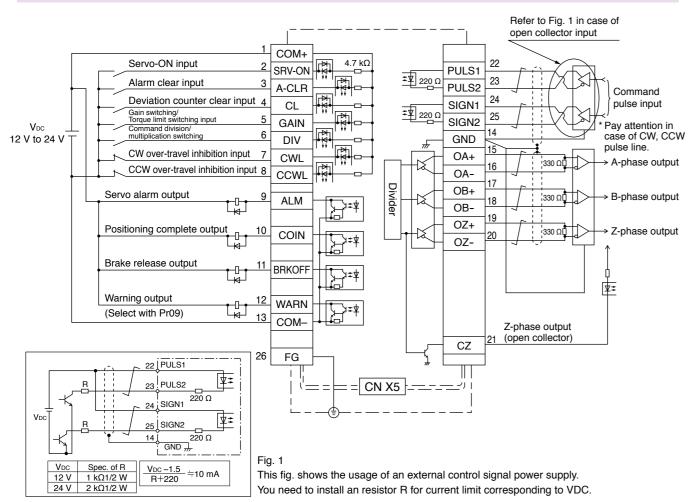
- 1) Refer the wiring diagram.
- 2) Use the twisted pair wire with shield, with core diameter of 0.18 mm² (AWG24) or larger, with higher
- 3) Use the twisted pair wire for the corresponding signal and power supply.
- 4) Shielding

Connect the shield of the driver to the case of CN X4. Connect the shield of the motor to Pin-6.

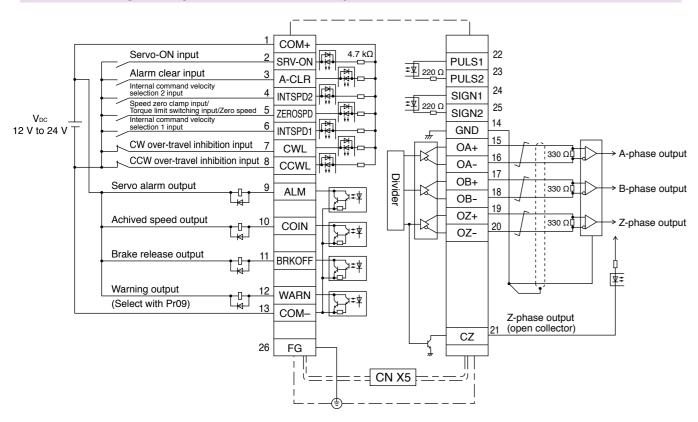
		0:	400 V	0:1				
Input power		Single phase, 100 V		Single phase, 100 V to 115 V +10 % 50 Hz/60 Hz				
		Single phase, 200 V		Single phase, 200 V to 240 V +10 % 50 Hz/60 Hz				
/er		3-ph	ase, 200 V	3-phase, 200 V to 240 V +10 % 50 Hz/60 Hz				
E	1	Temp	perature	Operating: 0 °C to 55 °C, Storage: -20 °C to 65 °C (Max.temperature guarantee 80 °C for 72 hours <nomal temperature="">)</nomal>				
Environment		Hum	idity	Both operating and storage : 90 %RH or less (free from condensation)				
me		Altitu	de	1000 m or lower				
₽	-	Vibra	ation	5.88 m/s ² or less, 10 Hz to 60 Hz (No continuous use at resonance frequency)				
,	/ithst	tand	voltage	Should be 1500 VAC (Sensed current: 20 mA) for 1 minute between Primary and Ground.				
Co	ontro	ol me	thod	IGBT PWM Sinusoidal wave drive				
Er	ncoc	der fe	edback	2500 P/r (10000 resolution) incremental encoder				
6	0	Input	i	7 inputs (1) Servo-ON, (2) Alarm clear and other inputs vary depending on the control mode.				
signal	ontrol	Outp		4 outputs (1) Servo alarm, (2) Alarm, (3) Release signal of external brake and other outputs vary depending on the control mode				
ω .	7	Input	t	2 inputs Supports both line driver I/F and open collector I/F.				
signal	ulse	Outp	ut	4 outputs Feed out the encoder pulse (A, B and Z-phase) in line driver. Z-phase pulse is also feed out in open collector.				
Co	omn	nunic	ation function RS232	1 : 1 communication to a host with RS232 interface is enabled.				
Di	ispla	ay LE	D	(1) Status LED (STATUS), (2) Alarm code LED (ALM-CODE)				
Re	eger	nerati	ion	No built-in regenerative resistor (external resistor only)				
D	vnar	nic b	rake	Built-in				
	•	ol mo		3 modes of (1) High-speed position control, (2) Internal velocity control and (3) High-functionality positioning control are selectable with parameter.				
		Control input		(1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Deviation counter clear,(4) Gain switching, (5) Electronic gear switching				
		Control output		(1) Positioning complete (In-position)				
Positic		Max. command pulse frequency		Line driver : 500 kpps, Open collector : 200 kpps				
Position control	Pulse input	Type of input pulse train	Differential input. Selectable with parameter, ((1) CW/CCW, (2) A and B-phase, (3) Command and Direction)					
0		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.				
Internal	-	Cont	rol input	(1) CW over-travel inhibition, (2) CCW over-travel inhibition, (3) Selection 1 of internal command speed, (4) Selection 2 of internal command speed, (5) Speed zero clamp				
mal		Cont	rol output	(1) Speed arrival (at-speed)				
speed		Inter	nal speed command	Internal 4-speed is selectable with control input.				
ed contro		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.				
<u> </u>	-	Zero	-speed clamp	0-clamp of internal speed command with speed zero clamp input is enabled.				
		Auto-ga	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.				
		Estima Normal mode automa		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.				
		Masi input	king of unnecessary	Masking of the following input signal is enabled. (1) Over-travel inhibition, (2) Speed zero clamp, (3) Torque limit switching				
Common		Divis pulse	ion of encoder feedback	1 P/r to 2500 P/r (encoder pulses count is the max.).				
nor	idiction	Protective	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.				
		Trace	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				
1		¥	Setup support software	PANATERM (Supporting OS : Windows98, Windows ME, Windows2000, and WindowsXP)				

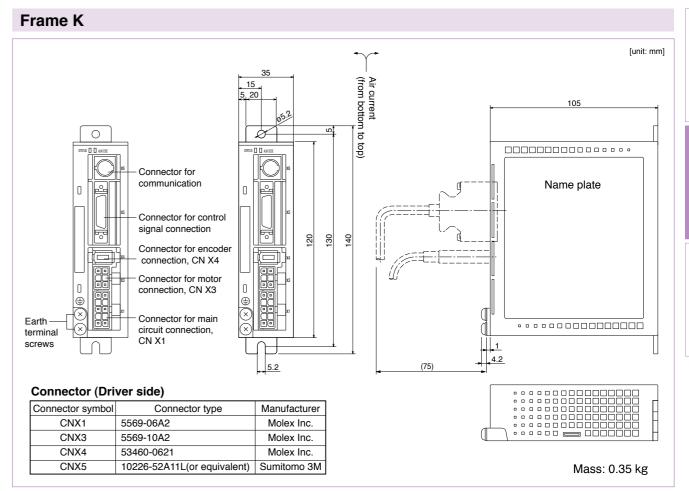
Control Circuit Standard Wiring Example

CN X 5 Wiring Example at Position Control Mode

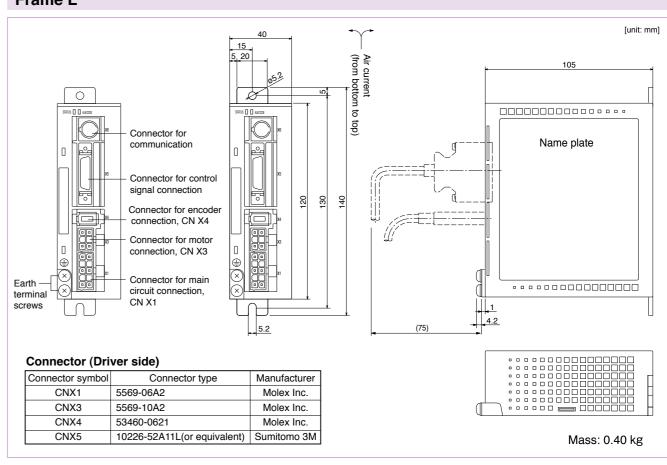


CN X 5 Wiring Example at Internal Velocity Control Mode





Frame L



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 Resolution per single turn 10000 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>) Ambient humidity 85 %RH or lower (free from condensing) 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			
During operation	Radial load P-direction (N)	68	245			
	Thrust load A-direction (N)	58	98			
	Thrust load B-direction (N)	58	98			

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

Model Designation

Design order Symbol Type 1 : Standard Ultra low inertia

(50 W to 200 W) Motor rated output

Symbol Rated output 50 W 5A 01 100 W 02 200 W

MUMA

Voltage specifications Symbol Specifications 100 V 100/200 V Z (50 W only)

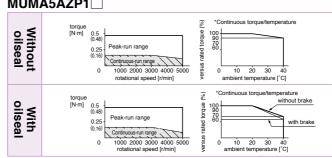
Wiotor Structure								
Symbol	Shaft	Holding	brake	Oil s	eal			
	Key-way, center tap	without	with	without	with			
S	•	•		•				
Т	•		•	•				

Rotary encoder specifications

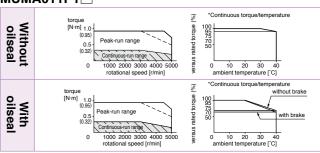
Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

Torque Characteristics [at AC100 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

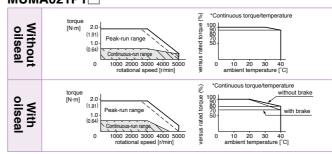
MUMA5AZP1



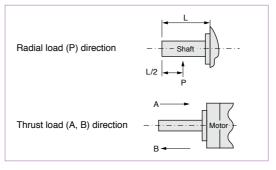
MUMA011P1



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 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)

200 V **MUMA** 50 W to 400 W

Low inertia

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

	Shaft	Holding	brake	Oil s	eal			
Symbol	Key-way, center tap	without	with	without	with			
S	•	•		•				
Т	•		•	•				

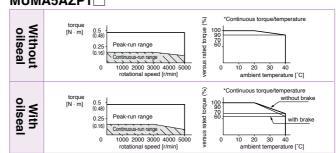
Rotary encoder specifications

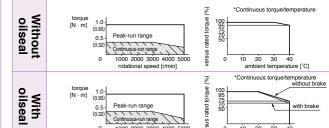
MUMA012P1

Symbol	Format	Pulse counts	Resolution	Wires
Р	Incremental	2500 P/r	10000	5

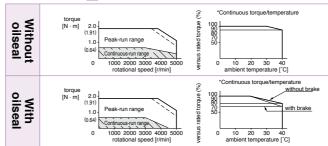
Torque Characteristics [at AC200 V of power voltage (Dotted line represents the torque at 10 % less supply voltage.)]

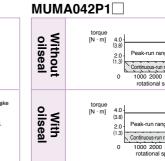
MUMA5AZP1

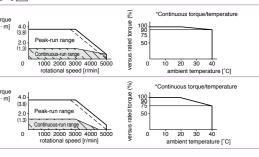




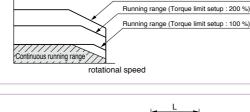
MUMA022P1

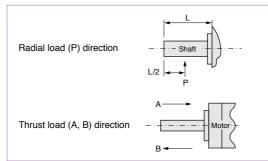






*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well. Running range (Torque limit setup: 300 %)





- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
 - If the load is connected, frequency will be defined as 1/(m+1), where m =(load moment of inertia) / (rotor moment of inertia).
 - · When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated
 - Power supply voltage is AC240 V (at 200 V of the main voltage).
 - If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/240) relative to the value in the table.
 - · When regeneration occurs continuosly such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
 - 2. If the effective torque is within the rated torque, there is no limit in 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)

Encoder

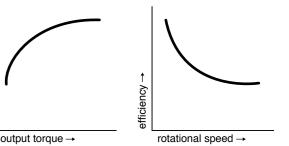
connector

MINAS E Series Motors with Gear Reducer

Motor Types with Gear Reducer

Reduction	Мо	Type of		
ratio	100	200	400	reducer
1/5	•	•	•	
1/9	•	•	•	For high precision
1/25	•	•	•	precision

Efficiency of the gear reducer shows the following inclination in relation to output torque and rotational speed.



• • • • • • • • • • • • • • • • • • •	For high precision				
		efficiency →	(efficiency →	
		- [output torque →	ef	rotational speed →

Model No. Designation

M A e.g.) M U

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 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 Type of Reduction 100 200 400 ratio 1/5 For High 2N 1/9 4N 1/25

Motor structure Holding brake 4

Specifications of Motor with Gear Reducer

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

				MUMA series	(Ultra low inertia)	
Motor outpo	ut		50 W	100 W	200 W	400 W
Motor mode	el	MUMA	5A□P1□	01□P1□	02□P1□	04□P1□
Rotary encoder specification		ifications	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental	2500 P/r Incremental
LL		Without brake	75.5	92.5	96	123.5
LL		With brake	107	124	129	156.5
	LR		24	24	30	30
	S		8	8	11	14
	LA		48	48 70		70
LB		22	22	50	50	
LC LE			42	42	60	60
			2	2	3	3
	LF		7	7	7	7
	LH		34	34	43	43
	LZ		3.4	3.4	4.5	4.5
	LW		14	14	20	25
	LK		12.5	12.5	18	22.5
Vouveu	ΚW		3h9	3h9	4h9	5h9
Key way	ΚH		3	3	4	5
	RH		6.2	6.2	8.5	11
	TP		$M3 \times 6$ (depth)	M3 × 6 (depth)	M4 × 8 (depth)	M5 × 10 (depth)
Mana (ka)		Without brake	0.40	0.50	0.96	1.5
Mass (kg)		With brake	0.60	0.70	1.36	1.9
Connector/	Plug spec	ifications		refer to Options	, P.239, P.240.	
Courtions						

MUMA 50 W to 400 W

Brake connector

(Key way dimensions)

□LC

Motor connector

LR LE

LL

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

[Unit: mm]

[Unit: mm]

<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.

Torque Characteristics

200 W

200 V

(33.3)

Table of Motor Specifications/ Motors with Gear Reduce

The Combination of the Driver and the Motor

Table of Motor with Gear Reducer Specifications

	Motor	r MUMA with gear reducer											
Model	Output	ut Reduction	Output	Rated			Peak max.	/motor + redu	of inertia cer/converted or shaft		ass	Permissible radial load	Permissible thrust load
		ratio	-	speed	speed	torque	torque	w/o brake	w/ brake	w/o brake	w/ brake	raulai loau	tillust load
	(W)		(W)	(r/min)	(r/min)	(N·m)	(N·m)	J (× 10	⁻⁴kg·m²)	(k	g)	(N)	(N)
MUMA01□P□1N		1/5	75	600	1000	1.18	3.72	0.072	0.076	1.05	1.25	490	245
MUMA01□P□2N	100	1/9	80	333	555	2.25	6.86	0.0663	0.0703	1.05	1.25	588	294
MUMA01□P□4N		1/25	80	120	200	6.27	19.0	0.0645	0.0685	2.20	2.40	1670	833
MUMA02□P□1N		1/5	170	600	1000	2.65	8.04	0.218	0.248	1.68	2.08	490	245
MUMA02□P□2N	200	1/9	132	333	555	3.72	11.3	0.368	0.398	2.66	3.06	1180	588
MUMA02□P□4N		1/25	140	120	200	11.1	33.3	0.388	0.418	2.66	3.06	1670	833
MUMA042P□1N		1/5	340	600	1000	5.39	16.2	0.533	0.563	3.2	3.6	980	490
MUMA042P□2N	400	1/9	332	333	555	9.51	28.5	0.438	0.468	3.2	3.6	1180	588
MUMA042P□4N		1/25	332	120	200	26.4	79.2	0.470	0.500	4.7	5.1	2060	1030

For dimensions, refer to P.235.

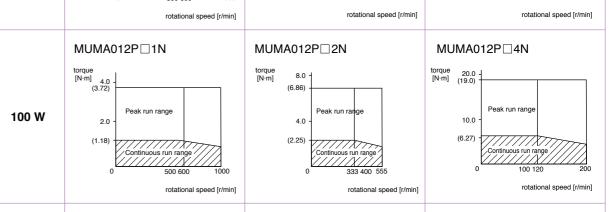
The Combination of the Driver and the Motor with Gear Reducer

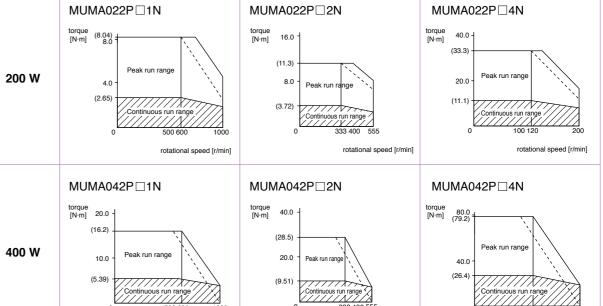
Combination w	ith driver	10	0 V	200 V				
Encoder	Motor	Part No. of motor	Single phase, 100 V	Part No. of motor	3-phase, 200 V	Single phase, 200 V		
Encoder	output	with gear reducer	Part No. of driver	with gear reducer	Part No. of driver	Part No. of driver		
	100 W	MUMA011P□□N	MKDET1110P	MUMA012P□□N	MKDET1505P	MKDET1505P		
2500 P/r	200 W	MUMA021P□□N	MLDET2110P	MUMA022P□□N	MKDET1310P	MLDET2210P		
Incremental	400 W			MUMA042P□□N	MLDET2510P	MLDET2510P		
	400 00	-	_	IVIUIVIAU42PUUN	MLDET2310P	WILDL 12510F		

For dimensions, refer to P.235.

For High Precision (MUMA Series 100 W to 400 W)

Supply voltage to driver	Motor output	1/5	1/9	1/25
		MUMA011P□1N	MUMA011P□2N	MUMA011P□4N
	100 W	torque 4.0	torque 8.0	torque 20.0 - [N·m] (19.0) - Peak run range 10.0 - (6.27) - (6.27) - (6.27) - (7.00)
100 V		MUMA021P□1N	MUMA021P□2N	MUMA021P□4N
		torque	torque	torque





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

233

rotational speed [r/min]

Setup Support Software

MUMA series with Gear Reducer

[Unit: mm] (Detailed dimensions of shaft end) (LG) LR Encoder connecter (AMP) Motor connector (AMP) Brake connector (AMP) \Box LC LK

Motor Dimensions

2500 P/r Encoder

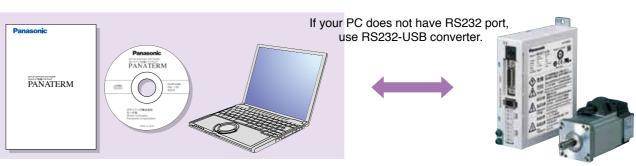
	Motor	Reduction														Key way	Jnit: mm]			
Model	output	ratio	L	LL	LR	LQ	LC	LB	LA	S	LH	LZ	LK	(LG)	LE	B×H×LD	T			
MUMA01□P□1N		1/5	192	92.5																
WOW/IOTE : TIV		173	223.5	124	32	20	52	50	60	12	10	M5	18	67.5		4×4×16	2.5			
MUMA01□P□2N	100 W	1/9	192	92.5	52	20	52	30	00	12	10	(Depth: 12)	10	07.5		4,4,10	0			
WOWNOTE EZIV	100 11	100 W	100 W	100 44	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			
101010170111111111111111111111111111111		1,20	266	124	30 0	30	70	70	30	13	, ''	(Depth: 20)	20	32	3	0.00.22	3.3			
MUMA02 P 1N		1/5	200.5	96	32	32 20	52	50	60	12	10	M5 (Depth: 12)	18	72.5		4×4×16	2.5			
WOW/YOZEI E-114			233.5	129	02 20	20			00	12						4,4,10	2.5			
MUMA02 P 2N	200 W	1/9	235.5	96										89.5						
WOW/YOZET EZIV	200 W	173	268.5	129							19 17	M6		69.5						
MUMA02 P 4N		1/25	246	96										100						
1010101/102		1723	279	129	50	30	78	70	90	19			26	100		6×6×22	3.5			
MUMA042P□1N		1/5	263	123.5	30	30	70	/0	30	13	17	(Depth: 20)	20			0.00.22	0.5			
WOWAU421 LIN		173	296	156.5										89.5						
MUMA042P□2N	400 W	1/9	263	123.5										09.5						
WOWAU+ZFZN	400 W	179	296	156.5																
MUMA042P 4N		1/25	288.5	123.5	61	40	98	90	445	15 24	24 18	18 M8 (Depth: 20)		35 104	5	8×7×30				
		1/23	321.5	156.5	01	40			113						9	0x/X30	4			

Upper column : without brake [Lower column : with brake

Setup Support Software "PANATERM" for MINAS series AC Servo Motor & Driver

Part No. DV0P4460 (Japanese/English version)

The PANATERM assists users in setting parameters, monitoring control conditions, setup support, and analyzing mechanical operation data on the PC screen, when installed in a commercially available personal computer, and connected to the MINAS A4 series, E series through the RS232 serial interface.



Basic Function

Parameter setup

- · After a parameter is defined on the screen, it will be sent to the driver immediately.
- Once you register parameters you frequently use, they can be easily set up on the screen.

Monitoring Control Conditions

Monitor

- · Control conditions: Control mode, velocity, torque, error and warning
- Driver input signal
- · Load conditions: Total count of command/feedback pulses, Load ratio, Regenerative resistor load ratio

Alarm

- · Displays the numbers and contents of the current alarm and up to 14 error events in the past.
- · Clears the numbers and contents of the current alarm and up to 14 error events in the past.

Setup

Auto tuning

· Gain adjustment and inertia ratio measurement

Graphic waveform display

• The graphic display shows command velocity, actual velocity, torque, and error waveforms.

Absolute encoder setup

- · Clears absolute encoder at the origin.
- · Displays single revolution/multi-revolution data.
- · Displays absolute encoder status.

Analysis of Mechanical Operation Data

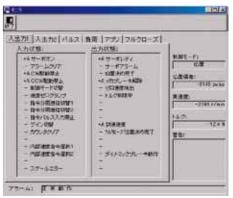
Frequency analysis

• Measures frequency characteristics of the machine, and displays Bode diagram.

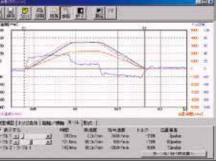
■ Can not use with A5 family.

HEADADHS - SHIPD, M.O.L. OFERSON HY. ADADED III MICEAHING 2 MINUS-TRACTOR ROMMERSON REPRODUCTION A 15 **883**+-13+9-1 16 3+-13+9-13+53**8**68

Parameter



Monitor



Graphic waveform display

[Personal computer] • CPU : Pentium 100MHz or more • Memory : 16 MB or more (32 MB recommended)

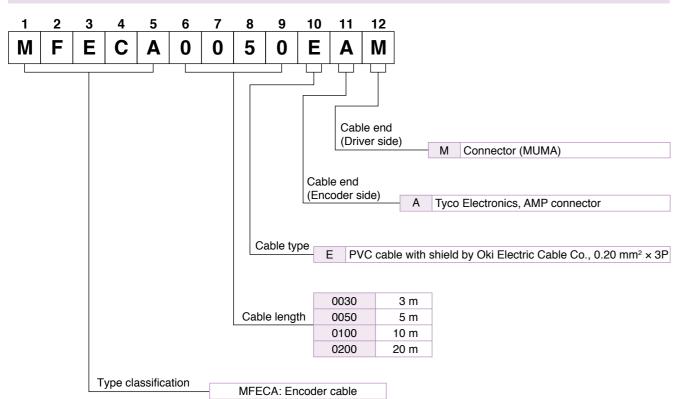
- · Hard disk capacity (vacancy of 25 MB or more recommended) · OS: Windows® 98, Windows® Me, Windows® 2000, Windows® XP (US version)
- Communication speed of serial communication port : 2400 bps or more (The software may not operate normally using USB-to-Serial adapter.)

[Display] • Resolution : 640*480 (VGA) or more (desirably 1024*768) • Number of colors : 256 colors or more

[CD-ROM drive] · CD-ROM drive operable on the above-mentioned personal computer

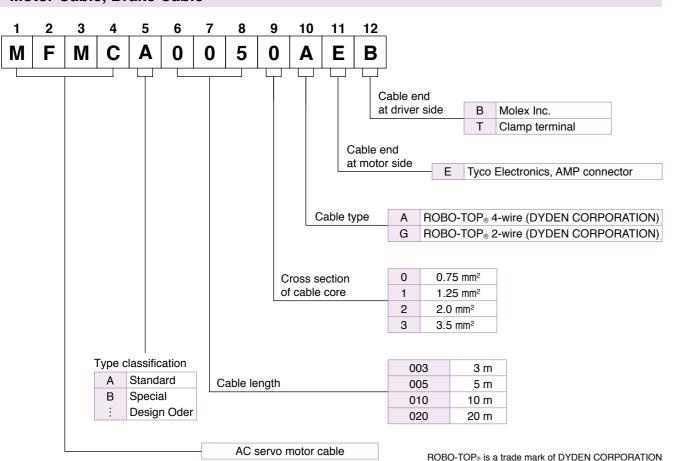
Cable

Encoder Cable



Cable part No. Designation

Motor Cable, Brake Cable



Cable Set (3 m)

Part No. DV0P37300

- 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)

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

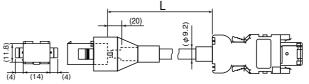
Part No. MFECA0 * * 0EAM

Part No. MFMCA0 * * 0AEB

[Unit: mm]

[Unit: mm]

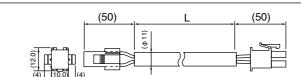
[Unit: mm]



Title	Part No.	Manufacturer	L (m)	Part No.
Connector (Driver side)	3E206-0100KV	Sumitomo 3M	3	MFECA0030EAM
Shell kit	3E306-3200-008	or equivalent	5	MFECA0050EAM
Connector	172160-1	Tuon Floatronian	10	MFECA0100EAM
Connector Pin	170365-1	Tyco Electronics	20	MFECA0200EAM
Cable	0.20 mm ² x 3P	Oki Flectric Cable Co. Ltd		

Motor Cable (ROBO-TOP_® 105 °C 600 V . DP)

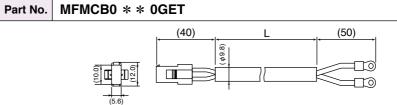
 $\mathsf{ROBO}\text{-}\mathsf{TOP}_{\otimes}$ is a trade mark of DYDEN CORPORATION



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172159-1	Tugo Flootronico	3	MFMCA0030AEB
Connector Pin	170362-1, 170366-1	Tyco Electronics	5	MFMCA0050AEB
Connector	5557-06R-210	Molex Inc	10	MFMCA0100AEB
Connector Pin	5556T	IVIOLEX ITIC	20	MFMCA0200AEB
Cable	BOBO-TOP 600 V 0.75 mm ²	Daiden Co. Ltd		

Brake Cable (ROBO-TOP_® 105 °C 600V . DP)

 $\mathsf{ROBO}\text{-}\mathsf{TOP}_{\otimes}$ is a trade mark of DYDEN CORPORATION



Title	Part No.	Manufacturer	L (m)	Part No.
Connector	172157-1	Type Fleetrenies	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

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

1	,					_/
- 11	10	9	8	7	6	Ü
- ;	11	(NC)	12	(NC)	13	1
- 1	5	//	3	2	1	1:
- ;		(NC)	B	(NC)	اذا	1:
- 1		(IVC)	D	(IVC)		Ιi,



Recommended manual crimping tool (to be prepared by customer)

Part No.	Cable material
57026-5000	UL1007
57027-5000	UL1015

<Cautions>

- 1. The above pin disposition is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.
- 3. Do not connect anything to pins marked "NC".

Connector Kit for Motor/Encoder Connection

Part No. DV0P3670 (Incremental 2500 pulse, 5-wire)

This option is required when you make your own encoder cable and motor cable. (Brake cable is required for brake.)

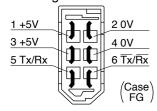
Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector (Driver side)	3E206-0100 KV	1	Sumitomo 3M	For connector, CN X4
Shell kit	3E306-3200-008	1	or equivalent	(6 pins)
Connector (6 pins)	172160-1	1	Tyco Electronics	For junction to encoder cable
Connector pin	170365-1	6	Tyco Electronics	(6 pins)
Connector (4 pins)	172159-1	1	Tyco Electronics	For junction to motor power cable
Connector pin	170366-1	4	Tyco Electronics	(4 pins)
Connector (6 pins)	5557-06R-210	1	Molex Inc.	For connector, CN X3
Connector pin	5556PBTL	4	IVIOLEX INC.	(6 pins)

<Remarks>

We may use parts equivalent to the above for shell and connector cover.

Pin configuration of connector CN X4 plug



Recommended manual crimping tool (to be prepared by customer)

Title	Title Part No. Manufactu		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			

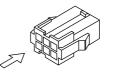
239

<Remarks>

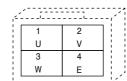
- 1. The above pin configuration is shown when viewed from the pin-soldering direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Connect the shield of the wire to the case (FG) without fail.
- 3. For wiring and connection, refer to P.224.

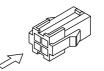
Pin configuration of encoder cable junction

<u>_</u>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	1	2	3	!
	NC	TX/RX	TX/RX	i
	4	5	6	-
	+5V	0V	FG	İ

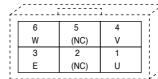


Pin configuration of motor power cable junction





Pin configuration of mating connector to CN X3 connector





<Cautions>

- 1. The above pin configuration is shown when viewed from the terminal inserting direction. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.224 for wiring and connection.

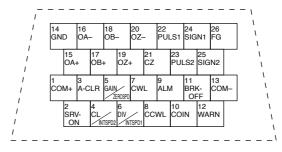
Connector Kit for External Peripheral Equipment

Part No.	DV0P0770

Parts composition

Title	Part No.	Number	Manufacturer	Note
Connector	10126-3000PE	1	Sumitomo 3M	For connector, CN X5
Connector cover	10326-52A0-008	1	or equivalent	(26 pins)

Pin configuration of connector CN X5 (26 pins) (viewed from the soldering side)



<Cautions>

- 1. Make a correct wiring by checking the stamped pin numbers on the connector itself.
- 2. Refer to P.225 for symbols and functions of the above signals.

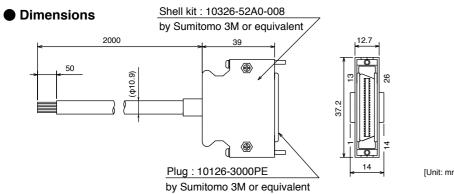
DIN Rail Mounting Unit/ External Regenerative Resistor

Interface Cable

Part No. DV0P0800 Cable of 2 m is connected.

Communication Cable/ Console

Interface Cable/



Wiring table

	_							
Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable	Pin No.	Title of signal	Color or cable
1	COM+	Orange (Red 1)	10	COIN	Pink (Black 1)	19	OZ+	Pink (Red 2)
2	SRV-ON	Orange (Black 1)	11	BRK-OFF	Orange (Red 2)	20	OZ-	Pink (Black 2)
3	A-CLR	Gray (Red 1)	12	WARN	Orange (Black 2)	21	CZ	Orange (Red 3)
4	CL/INTSPD2	Gray (Black 1)	13	COM-	Gray (Red 2)	22	PULS1	Gray (Red 3)
5	GAIN/ZEROSPD	White (Red 1)	14	GND	Gray (Black 2)	23	PULS2	Gray (Black 3)
6	DIV/INTSPD1	White (Black 1)	15	OA+	White (Red 2)	24	SIGN1	White (Red 3)
7	CWL	Yellow (Red 1)	16	OA-	White (Black 2)	25	SIGN2	White (Black 3)
8	CCWL	Yellow (Black 1)	17	OB+	Yellow (Red 2)	26	FG	Orange (Black 3)
9	ALM	Pink (Red 1)	18	OB-	Yellow (Black 2)			
		<u> </u>		<u> </u>			<u> </u>	

<Notes>

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

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

The shield of this cable is not connected to a connector pin. To connect the shield to FG or GND at the driver side, use a connector kit for external device connection.

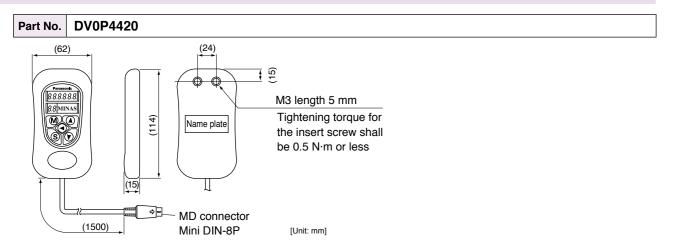
Communication Cable (For Connection with PC)

Part No. DV0P1960 2000 Mini-DIN 8P

MD connector

Console

D-sub connector 9P

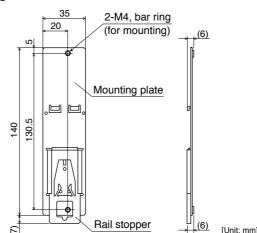


[Unit: mm]

DIN Rail Mounting Unit

Part No. DV0P3811

Dimensions

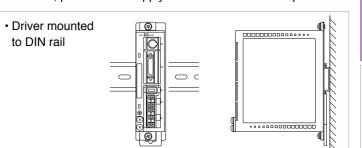


<Notes>

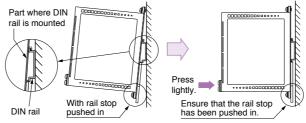
2 mounting screws (M4 X L8, Pan head) are attached. Rail stopper can be extended to max. 10 mm.

<Cautions>

Please read carefully operation manual before using this product. In addition, please do not apply excessive stress to the product.

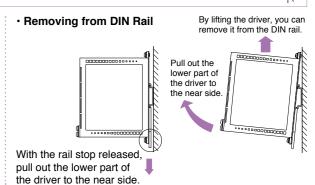


· How to Install



Hook the upper side of DIN rail mounting part on the DIN rail.

Press lightly the lower part of the main body of driver.

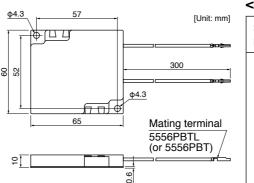


External Regenerative Resistor

		Specifications				
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

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.

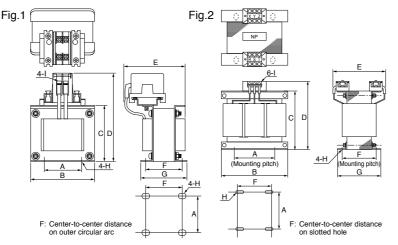
The thermal fuse may blow due to heat dissipating condition, working temperature, supply voltage or load fluctuation. Make it sure that the surface temperature of the resistor may not exceed 100 °C at the worst running conditions with the machine, which brings large regeneration (such case as high supply voltage, load inertia is large or deceleration time is short) Please carry out air cooling if needed.

List of Peripheral Components

E Series

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	2
	Single phase, 100 V	200 W	DV0P228	1
MLDE	Single phase, 200 V	200 W to 400 W	DV0P220	2
	3-phase, 200 V	400 W		



Surge Absorber for Motor Brake

[Unit: mm]

	Part No.	А	В	С	D	E(Max)	F	G	н	ı	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 general-purpose articles established by the Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry (the ex-Ministry of International Trade and Industry). According to those guidelines, the Japan Electrical Manufacturers Association (JEMA) have prepared technical documents (procedure to execute harmonic restraint: JEM-TR 198, JEM-TR 199 and JEM-TR 201) and have been requesting the users to understand the restraint and to cooperate with us. On January, 2004, it has been decided to exclude the general-purpose inverter and servo driver from the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles". After that, the Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004.

We inform you that the procedure to execute the harmonic restraint on general-purpose inverter and servo driver will be modified as follows.

- 1. All types of the general-purpose inverters and servo drivers used by specific users are under the control of the Guide-lines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system". The users who are required to apply the guidelines must calculate the equivalent capacity and harmonic current according to the guidelines and must take appropriate countermeasures if the harmonic current exceeds a limit value specified in a contract demand. (Refer to JEM-TR 210 and JEM-TR 225.)
- 2. The Guidelines for harmonic restraint on household electrical appliances and general-purpose articles was abolished on September 6, 2004. However, based on conventional guidelines, JEMA applies the technical documents JEM-TR 226 and JEM-TR 227 to any users who do not fit into the Guidelines for harmonic restraint on heavy consumers who receive power through high voltage system or extra high voltage system from a perspective on enlightenment on general harmonic restraint. The purpose of these guidelines is the execution of harmonic restraint at every device by a user as usual to the utmost extent.

<Remarks>

When using a reactor, be sure to install one reactor to one servo driver.

■ Recommended components

Surge Absorber for Motor Brake

Motor	Surge absorber	for motor brake
Motor	Part No. (Manufacturer's)	Manufacturer
MUMA 50 W to 400 W	Z15D151	SEMITEC Corporation

List of Peripheral Components

Manufacturer	Tel No. / Home Page	Peripheral components
Panasonic Corporation Eco Solutions Company	http://panasonic.net/es/	Circuit breaker
Panasonic Corporation Automotive & Industrial Systems Company	http://panasonic.net/id/	Surge absorber Switch, Relay
Iwaki Musen Kenkyusho Co., Ltd.	+81-44-833-4311 http://www.iwakimusen.co.jp/	Regenerative resistor
SEMITEC Corporation	+81-3-3621-2703 http://www.semitec.co.jp/english2/	Surge absorber for motor brake
TDK Corporation	+81-3-5201-7229 http://www.global.tdk.com/	Noise filter for signal lines
Okaya Electric Industries Co. Ltd.	+81-3-4544-7040 http://www.okayaelec.co.jp/english/index.html	Surge absorber Noise filter
Sumitomo 3M	+81-3-5716-7290 http:/solutions.3m.com/wps/portal/3M/ja_JP/ WW2/Country/	
Tyco Electronics	+81-44-844-8052 http://www.te.com/ja/home.html	Connector
Japan Molex Inc.	+81-462-65-2313 http://www.molex.co.jp	
DYDEN CORPORATION	+81-3-5805-5880 http://www.dyden.co.jp/english/index.htm	Cable

^{*} The above list is for reference only. We may change the manufacturer without notice.

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.

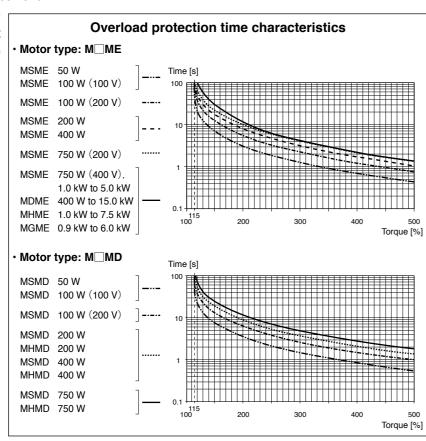
Conformity to UL Standards

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
EC	EMC Directives	EN55011 EN61000-6-2 EN61800-3	_
	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.

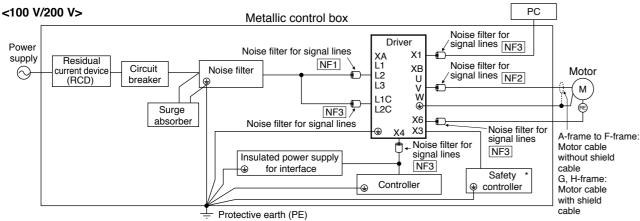
A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용(A 급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

(대상기종 : Servo Driver)

Composition of Peripheral Equipments

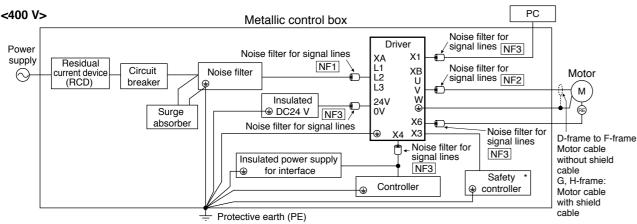
Installation Environment

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.

(2) Use an insulated power supply of DC12 V to 24 V which has CE marking or complies with EN60950.

Circuit Breaker

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

The short-circuit protection circuit on the product is not for protection of branch circuit.

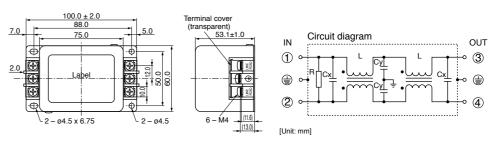
The branch circuit should be protected in accordance with NEC and the applicable local regulations in your area.

Noise Filter

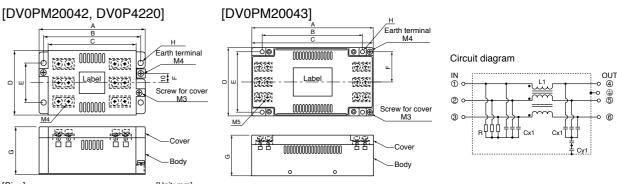
When you install one noise filter at the power supply for multi-axes application, contact the manufacturer of the noise filter. If noise margin is required, connect 2 filters in series to emphasize effectiveness.

Options

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P4170	Single phase 100 V, 200 V	SUP-EK5-ER-6	A-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	



[Size] [Unit: mm]

A B C D E F G H

DV0PM20042 115 105 95 70 43 10 52 5.5

DV0P4220 145 135 125 70 50 10 52 5.5

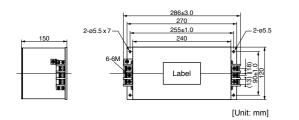
DV0PM20043 165 136 165 90 80 40 54 5.5

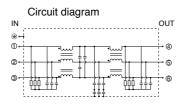
For single phase application, use 2 terminals among 3 terminals, leaving the remaining terminal unconnected.

^{*} A5IIE, A5E is not provided with X3 terminal.

LOAD

Option part No.	Voltage specifications for driver	Manufacturer's part No.	Applicable driver (frame)	Manufacturer
DV0P3410	3-phase 200 V	3SUP-HL50-ER-6B	F-frame	Okaya Electric Ind.

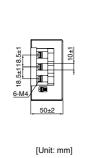


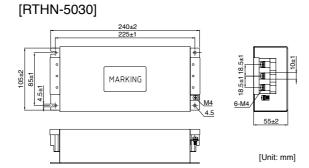


Recommended components

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
RTHN-5010		10	A-frame to C-frame	
RTHN-5030	3-phase 200 V	30	D-frame	TDK-Lambda Corp.
RTHN-5050		50	E-frame and F-frame	

[RTHN-5010] 210±2 195±1 MARKING MARKING M4 4.5



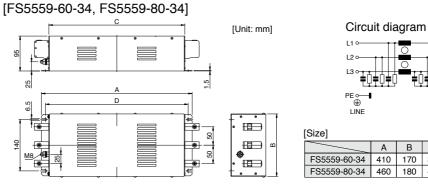


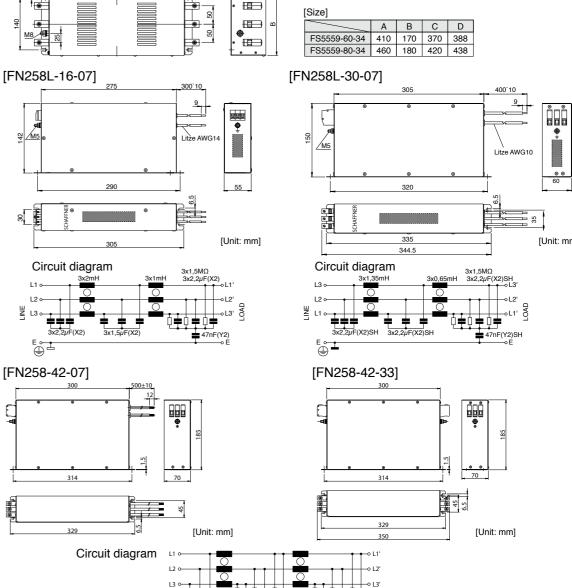
[RTHN-5050] 300±2 280±1 MARKING MARK

<Remarks>

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

Part No.	Voltage specifications for driver	Current rating (A)	Applicable driver (frame)	Manufacturer
FS5559-60-34	3-phase 200 V	60	G-frame	
FS5559-80-34		80	H-frame	
FN258L-16-07		16	D-frame and E-frame	Schaffner EMC, Inc.
FN258L-30-07	2 phase 400 V	30	F-frame	Schainlei Eivic, inc.
FN258-42-07	3-phase 400 V	42	G-frame and H-frame	
FN258-42-33		42	G-irame and H-irame	





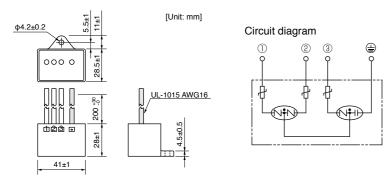
<Remarks>

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

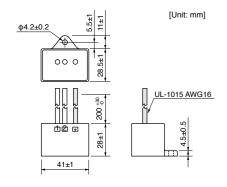
Surge Absorber

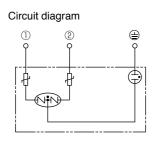
Provide a surge absorber for the primary side of noise filter.

Option part No.	Voltage specifications for driver Manufacturer's part No.		Manufacturer
DV0P1450	3-phase 200 V	R·A·V-781BXZ-4	Okaya Electric Ind.
DV0PM20050	3-phase 400 V	R·A·V-801BXZ-4	Okaya Electric Iliu.



Option part No.	· for ariver		Manufacturer
DV0P4190	Single phase 100 V, 200 V	R·A·V-781BWZ-4	Okaya Electric Ind.





Noise Filter for Signal Lines

Install noise filters for signal lines to all cables (power cable, motor cable, encoder cable and interface cable)

Symbol*1	Cable Name	100 V/200 V Amp. frame symbol	400 V Amp. frame symbol	Option part No.	Manufacturer's part No.	Manufacturer	Qty.
		A, B, C, D	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF1	Power cable	E, F	_	Recommended components	RJ8035	KK-CORP.CO.JP	1
		G, H	G, H	Recommended components	RJ8095	KK-CORP.CO.JP	1
		A, B, C, D, E, F	D, E, F	DV0P1460	ZCAT3035-1330	TDK Corp.	4
NF2	Motor cable	G, H	G, H	Recommended components	T400-61D	MICROMETALS	1
NF3	24 V Power cableEncoder cableInterface cableUSB cableControl 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	100 kHz	Size [Unit: mm]							
rail ino.	Current	(μH)	Α	В	С	D1	D2	Core thickness	Е	F
RJ8035	35 A	9.9±3	170	150	23	80	53	24	R3.5	7
RJ8095	95 A	7.9±3	200	180	34	130	107	35	R3.5	7

Fig.1: DV0P1460(Option)

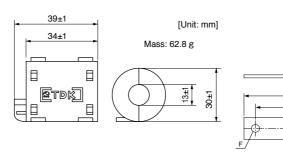
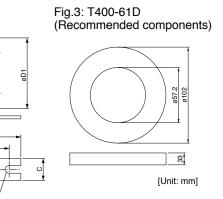


Fig.2: RJ8035, RJ8095 (Recommended components)



Residual Current Device

Install a type B Residual current device (RCD) at primary side of the power supply.

Type B: Residual current device which detects a direct-current ingredient.

Grounding

- (1) Connect the protective earth terminal () of the driver and the protective earth terminal (PE) of the control box without fail to prevent electrical shocks.
- (2) Do not make a joint connection to the protective earth terminals ((1)). 2 terminals are provided for protective earth.

<Note>

For driver and applicable peripheral equipments, refer to P.19 "Driver and List of Applicable Peripheral Equipments".

Manufacturer

Okaya Electric

[Unit: mm]

UL-1015

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	1			
	IEC61000-4-2	Electrostatic Discharge Immunity Test	Conforms to			
Motor and	IEC61000-4-3	Radio Frequency Electromagnetic Field Immunity Test	references			
driver	IEC61000-4-4	Electric High-Speed Transition Phenomenon/Burst Immunity Test	by EMC Directives			
	IEC61000-4-5	Lightening Surge Immunity Test	1			
	IEC61000-4-6	High Frequency Conduction Immunity Test]			
	IEC61000-4-11	Instantaneous Outage Immunity Test]			

- IEC: International Electrotechnical Commission
- EN : Europaischen Normen **EMC: Electromagnetic Compatibility**
- UL : Underwriters Laboratories CSA: Canadian Standards Association

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

- Panasonic Testing Centre
- Panasonic Service Furone
- a division of Panasonic Marketing Europe GmbH Winsbergring 15,22525 Hamburg, F.R. Germany

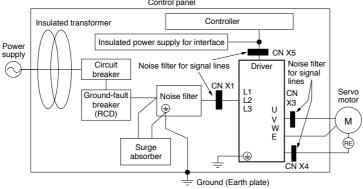
Composition of Peripheral Components

<Pre><Pre>cautions in using options>

Use options correctly after reading operation manuals of the options to better understand the precautions. Take care not to apply excessive stress to each optional part. Control pane

Installation Environment

Use Minas driver in environment of Pollution Degree 1 or 2 prescribed in IEC-60664-1 (e.g. Install the driver in control panel with IP54 protection structure.)



Power Supply

100 V system	Single phase, 100 V $^{+10\%}_{-15\%}$ to 115 V $^{+10\%}_{-15\%}$	50 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, (n) marked), between the power supply and the noise filter.

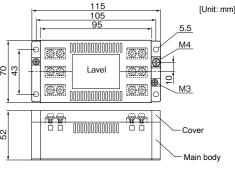
Noise Filter

When you install one noise filter in the power supply for multi axis application, consult with the manufacture of the filter.

Composition of Peripheral Components

Conformity to UL Standards

Option part No.	Part No.	Manufacturer
DV0P4160	3SUP-HU10-ER-6	Okaya Electric Industries Co.



Surge Absorber

Install a surge absorber at primary side of the noise filter.

Option part No.	Driver voltage spec	Part No.	Manufacturer	Option part No.	Driver voltage spec	Part No.
DV0P1450	3-phase, 200 V	R·A·V-781BXZ-4	Okaya Electric	DV0P4190	Single phase, 100 V, 200 V	R·A·V-781BWZ-4
Circuit diagr		28±1 200 ⁻³⁰ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	UL-1015 AWG16	Circuit diagr	ø4.2±	28±1
		41+1				41+1

<Remarks>

Remove this surge absorber when you perform dielectric test on the machine, or surge absorber might be damaged

Noise Filter for Signal Lines

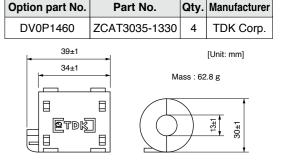
Install noise filters for signal lines to all cables (Power line, motor cable, encoder cable, interface cable)

<Caution>

- Please fix a line noise filter to avoid excessive stress to the cable.
- · When using multiple axes, noise generated from each driver might influence driver and peripheral equipment and result to

Please insert line noise filters between driver and motor wires (U, V, W but grounding).

(Please refer to P.255 "peripheral equipment configuration".)



Grounding

- (1) Connect the protective earth terminal of the driver ((1) and protective earth terminal of the control panel (PE) without fail to prevent electrical shocks.
- (2) Do not co-clamp to the ground terminals ((\perp)). Two ground terminals are provided.

Ground-Fault Breaker

Install a ground fault curcuit braker (RCD) to the primary side of the power supply.

Please use B-type (DC sensitive) ground fault circuit breakers defined in IEC60947-2, JISC8201-2-2.

Conformity to UL Standards

Observe the following conditions of (1) and (2) to make the system conform to UL508C (File No. E164620).

- (1) Use the driver in an environment of Pollution Degree 2 or 1 prescribed in IEC60664-1. (e.g. Install in the control box with IP54 enclosure.)
- (2) Install a circuit breaker or fuse which are UL recognized (LISTED (1) marked) between the power supply and the noise filter without fail.

AC Servo Motor Capacity Selection Software

We have prepared PC software "M-SELECT" for AC servo motor capacity selection. Consult our sales representative or authorized distributor.

Three-step selection

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,

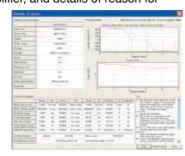
which will be appropriate to use with your machine. Select the motor that is best suitable for your machine application.



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.



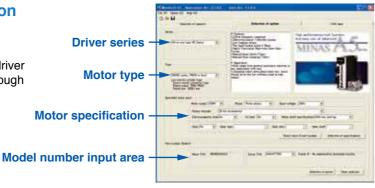
Option Selection Software for AC Servo Motor

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.



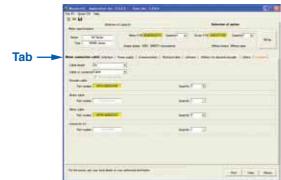
2. Entry of model number

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

- Table 5 : Prefix SI unit — (Multiples of 10) Table1: Basic unit Table 2: Auxiliary unit Derived unit Table 4: Unit combined Other derived unit Table 3: Derived unit with with SI unit proper name

Table1: Basic unit

Quantity	Name of unit	Symbol of unit
Length	meter	m
Weight	kilogram	kg
Time	second	s
Current	ampere	Α
Thermodynamic temperature	kelvin	K
Amount of substance	mol	mol
Luminous intensity	candela	cd

Table 2: Auxiliary unit

Quantity	Name of unit	Symbol of unit
Plane angle	radian	rad
Solid angle	steradian	sr

Table 3: Major derived unit with proper name

Quantity	Name	Symbol of unit	Derivation from basic unit, auxiliary unit or other derived unit
Frequency	hertz	Hz	1 Hz = 1 s ⁻¹
Force	newton	N	1 N = 1 kg·m/s ²
Pressure, Stress	pascal	Pa	1 Pa = 1 N/m ²
Energy, Work, Amount of heat	joule	J	1 J = 1 N·m
Amount of work, Work efficiency, Power, Electric power	watt	W	1 W = 1 J/s
Electric charge, Amount of electricity	coulomb	С	1 C = 1 A·s
Electric potential, Potential difference, Voltage, Electromotive force	volt	V	1 V = 1 J/C
Electrostatic capacity, Capacitance	farad	F	1 F = 1 C/V
Electric resistance	ohm	Ω	1 Ω = 1 V/A
Electric conductance	siemens	S	1 S = 1 Ω ⁻¹
Magnetic flux	weber	Wb	1 Wb = 1 V⋅s
Magnetic flux density, Magnetic induction	tesla	Т	1 T = 1 Wb/m ²
Inductance	henry	Н	1 H = 1 Wb/A
Degree centigrade (Celsius)	degree centigrade (Celsius) / degree	°C	t °C = (t+273.15) K
Luminous flux	lumen	lm	1 lm = 1 cd·sr
Illuminance	lux	lx	1 lx = 1 lm/m ²

Table 4: Unit combined with SI unit

Quantity	Name	Symbol of unit
	minute	min
Time	hour	h
	day	d
	degree	۰
Plane angle	minute	'
	second	"
Volume	liter	I, L
Weight	ton	t

Table 5: Prefix

Multiples powered	Prefix		
to unit	Name	Symbol	
10 ¹⁸	exa	E	
1015	peta	Р	
10 ¹²	tera	Т	
10°	giga	G	
10 ⁶	mega	М	
10 ³	kilo	k	
10 ²	hecto	h	
10	deca	da	
10 ⁻¹	deci	d	
10 ⁻²	centi	С	
10 ⁻³	milli	m	
10 ⁻⁶	micro	μ	
10 ⁻⁹	nano	n	
10 ⁻¹²	pico	р	
10 ⁻¹⁵	femto	f	
10 ⁻¹⁸	atto	a	

Informatio

	Symbol of	Symbol of SI unit and	
Quantity	conventional unit	compatible unit	Conversion value
Length	μ (micron)	μm	1 μ = 1 μm (micrometer)
Acceleration	Gal	m/s ²	1 Gal = 10 ⁻² m/s ²
	G	m/s ²	1 G = 9.80665 m/s ²
Frequency	c/s, c	Hz	1 c/s = Hz
Revolving speed, Number of revolutions	rpm	s ⁻¹ or min ⁻¹ , r/min	1 rpm = 1 min ⁻¹
Weight	kgf	_	Same value
Mass	-	kg	Southe value
Weight flow rate	kgf/s	-	Same value
Mass flow rate	_	kg/s	Southe value
Specific weight	kgf/m ³	-	Same value
Density	_	kg/m³	Southe 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 mH₂O = 9.80665 x 10 ³ Pa
	mmHg	Pa or mmHg (2)	1 mmHg = 133.322 Pa
	Torr	Pa	
Stress	kgf/mm²	Pa or N/m ²	1 kgf/mm ² = 9.80665 x 10 ⁶ Pa
			=9.80665 x 10 ⁶ N/m ²
	kgf/cm ²	Pa or N/m ²	1 kgf/cm ² = 9.80665 x 10 ⁴ Pa
			= 9.80665 x 10 ⁴ N/m ²
Elastic modulus	kgf/m²	Pa or N/m ²	1 kgf/m ² = 9.80665 Pa = 9.80665 N/m ²
			1 kgf/cm ² = 9.80665 x 10 ⁴ N/m ²
Energy, Work	kgf⋅m	J (joule)	1 kgf·m = 9.80665 J
	erg	J	1 erg = 10 ⁻⁷ J
Work efficiency, Power	kgf·m/s	W (watt)	1 kgf·m/s = 9.80665 W
	PS	W	1 PS = 0.7355 kW
Viscosity	PP	Pa·s	1 P = 0.1 Pa·s
Kinetic viscosity	St	mm²/s	10 ⁻² St = 1 mm ² /s
Thermodynamic temperature	К	K (kelvin)	1 K = 1 K
Temperature interval	deg	K ⁽³⁾	1 deg = 1 K
Amount of heat	cal	J	1 cal = 4.18605 J
Heat capacity	cal/°C	J/K ⁽³⁾	1 cal/°C = 4.18605 J/K
Specific heat, Specific heat capacity	cal/ (kgf·°C)	cal/ (kgf·K) ⁽³⁾	1 cal/ (kgf·°C) = 4.18605 J/ (kg·K)
Entropy	cal/K	J/K	1 cal/K = 4.18605 J/K
Specific entropy	cal/ (kgf·K)	J/(kg·K)	1 cal/ (kgf·K) = 4.18605 J/ (kg·K)
Internal energy (Enthalpy)	cal	J	1 cal = 4.18605 J
Specific internal energy (Specific enthalpy)	cal/kgf	J/kg	1 cal/kgf = 4.18605 J/kg
Heat flux	cal/h	W	1 kcal/h = 1.16279 W
Heat flux density	cal/ (h·m²)	W/m²	1 kcal/ (h·m²) = 1.16279 W/m²
Thermal conductivity	cal/ (h·m·°C)	W/ (m·K) ⁽³⁾	1 kcal/ (h·m·°C) = 1.16279 W/ (m·K)
Coefficient of thermal conductivity	cal/ (h·m²·°C)	W/ (m ² ·K) ⁽³⁾	1 kcal/ (h·m²·°C) = 1.16279 W/ (m²·K)
Intensity of magnetic field	Oe	A/m	1 Oe = 10 ³ / (4π) A/m
Magnetic flux	Mx	Wb (weber)	1 Mx = 10 ⁻⁸ Wb
Magnetic flux density	Gs,G	T (tesla)	1 Gs = 10 ⁻⁴ T
Magnotic flux deficity		ι (ισσια)	1 . 23 10 1

Major Compatible Unit

Note

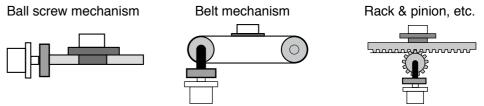
- (1) Applicable to liquid pressure. Also applicable to atmospheric pressure of meteorological data, when "bar" is used in international standard.
- (2) Applicable to scale or indication of blood pressure manometers.
- (3) "°C" can be substituted for "K".

Flow of Motor Selection

1. Definition of mechanism to be driven by motor.

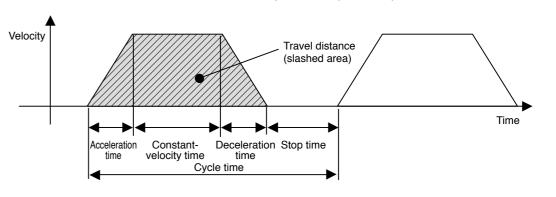
Define details of individual mechanical components (ball screw length, lead and pulley diameters, etc.)

<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

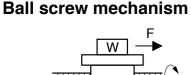
(1) Peak torque

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



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 efficiencyμ : Coefficient of friction

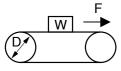
F : External force [N]

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]

 η : Mechanical efficiency μ : Coefficient of friction

F : External force [N]

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

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

	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 $\rho = 7.9 \times 10^3 \, [kg/m^3]$

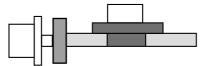
Aluminum $\rho = 2.8 \times 10^{3} \, [kg/m^{3}]$

Brass ρ =8.5 x 10³ [kg/m³]

To Drive Ball Screw Mechanism

1. Example of motor selection for driving ball screw mechanism

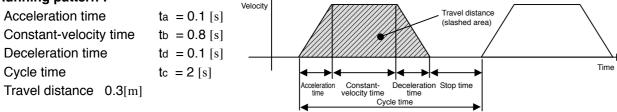
Workpiece weight WA = 10 [kg]Ball screw length BL = 0.5 [m]Ball screw diameter BD = 0.02 [m]Ball screw lead BP = 0.02 [m]Ball screw efficiency $B\eta = 0.9$



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 :



3. Ball screw weight

BW =
$$\rho \times \pi \times \left(\frac{BD}{2}\right)^2 \times BL = 7.9 \times 10^3 \times \pi \times \left(\frac{0.02}{2}\right)^2 \times 0.5$$

= 1.24 [kg]

4. Load inertia

$$\begin{aligned} JL &= JC \, + \, JB = JC \, + \, \frac{1}{8}BW \, \times \, BD^2 \, + \, \frac{WA \cdot BP^2}{4\pi^2} \\ &= 0.00001 \, + \, (1.24 \times 0.02^2) \, / \, 8 \, + \, 10 \, \times \, 0.02^2 \, / \, 4\pi^2 \\ &= 1.73 \, \times \, 10^{-4} \, [\, \mathrm{k} \, \mathrm{g} \cdot \mathrm{m}^2] \end{aligned}$$

5. Provisional motor selection

In case of MSME 200 W motor : $JM = 0.14 \times 10^{-4} \, [kg \cdot m^2]$

6. Calculation of inertia ratio

JL / JM =
$$1.73 \times 10^{-4}$$
 / 0.14×10^{-4} Therefore, the inertia ratio is "12.3" (less than "30") (In case of MSME 100 W motor: JM = 0.051×10^{-4} Therefore, the inertia ratio is "33.9".)

7. Calculation of maximum velocity (Vmax)

Vmax = 0.3 / 0.9 = 0.334 [m/s]

$$\frac{1}{2}$$
 × 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 × Vmax = 0.3

8. Calculation of motor velocity (N [r/min]) Ball screw lead per resolution: Bp = 0.02 [m]

$$N = 0.334 / 0.02 = 16.7 [r/s]$$

= 16.7 × 60 = 1002 [r/min] < 3000 [r/min] (Rated velocity of MSME 200W motor)

9. Calculation of torque

Traveling torque
$$T_f = \frac{BP}{2\pi B \, \eta} \; (\mu g W A + F) = \frac{0.02}{2\pi \; x \; 0.9} \; (0.1 \times 9.8 \times 10 + 0)$$

$$= 0.035 \; [N \cdot m]$$
 Acceleration torque
$$T_a = \frac{(JL + JM) \; \times \; 2\pi N [r/s]}{Acceleration \; time \; [s]} + Traveling \; torque$$

$$= \frac{(1.73 \times 10^{-4} + 0.14 \times 10^{-4}) \times 2\pi \times 16.7}{0.1} + 0.035$$

$$= 0.196 + 0.035 = 0.231 \; [N \cdot m]$$

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 =
$$\sqrt{\frac{\text{Ta}^2 \times \text{ta} + \text{Tf}^2 \times \text{tb} + \text{Td}^2 \times \text{td}}{\text{tc}}}$$

= $\sqrt{\frac{0.231^2 \times 0.1 + 0.035^2 \times 0.8 + 0.161^2 \times 0.1}{2}}$
= 0.067 [N·m] < 0.64 [N·m] (Rated torque of MSME 200 W motor)

12. Judging from the inertia ratio calculated above, selection of 200 W motor is preferable, although the torque margin is significantly large.

Example of Motor Selection

Example of motor selection for timing belt mechanism

1.Mechanism Workpiece weight WA = 2[kg] (including belt)

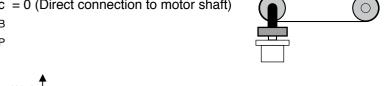
> Pulley diameter PD = 0.05[m]

Pulley weight WP= 0.5[kg] (Use manufacturer-specified catalog value, or calculation value.)

Mechanical efficiency $B\eta = 0.8$

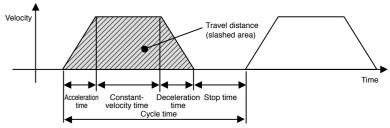
Coupling inertia Jc = 0 (Direct connection to motor shaft)

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 × PD² + $\frac{1}{8}$ WP × PD² × 2
= 0 + $\frac{1}{4}$ × 2 × 0.05² + $\frac{1}{8}$ × 0.5 × 0.05² × 2
= 0.00156 = 15.6 × 10⁻⁴ [kg·m²]

4. Provisional motor selection

In case of MSME 750 W motor : $JM = 0.87 \times 10^{-4} \, [kg \cdot m^2]$

5. Calculation of inertia ratio

JL / JM = $15.6 \times 10^{-4} / 0.87 \times 10^{-4}$ 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

$$0.9 \times Vmax = 1$$

 $Vmax = 1 / 0.9 = 1.111[m/s]$

7. Calculation of motor velocity (N [r/min])

A single rotation of pulley :
$$\pi \times PD = 0.157[m]$$

N = 1.111 / 0.157 = 7.08[r/s]
= 7.08 × 60 = 424.8[r/min] < 3000[r/min] (Rated velocity of MSME 750 W motor)

8. Calculation of torque

Traveling torque
$$T_f = \frac{PD}{2\,\eta} (\mu gWA + F) = \frac{0.05}{2\,\times\,0.8} \ (0.1\,\times\,9.8\,\times\,3 + 0)$$

$$= 0.061[N\cdot m]$$
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.

Request Sheet for Motor Selection

Request for motor selection I: Ball screw drive

mm/s

Ν

mm

kg

٧

mm

mm

mm

1. Driven mechanism and running data

1) Travel distance of the work load per one cycle mm 2) Cycle time to:

(Fill in items 3) and 4) if required.)

- 3) Acceleration time 4) Deceleration time td:
- 5) Stopping time ts:
- 7) External force F:

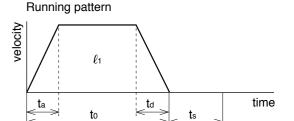
V:

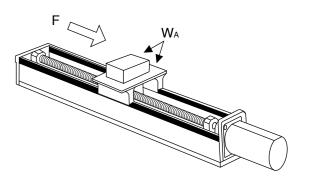
WA:

- Positioning accuracy of the work load
- 9) Total weight of the work load and the table
- 10) Power supply voltage

6) Max. velocity

- 11) Diameter of the ball screw
- 12) Total length of the ball
- 13) Lead of the ball screw





14) Traveling direction (horizontal, vertical etc.)

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:

mm

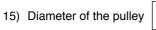
Request Sheet for Motor Selection

Request for motor selection II: Timing pulley + Ball screw drive

1. Driven mechanism and running data

1)	Travel distance of the work
	load per one cycle

ℓ ₁ :	mm



16) Weight of the pulley

17) Width of the pulley

Motor	side	Ball so	rew side
D ₁ :	mm	D ₂ :	mm
W1:	kg	W2:	kg

mm

kg

time

(Fill in items 3) and 4) if required.)

(or item 17) and 18))

3) Acceleration time4) Deceleration time

5) Stopping time

2) Cycle time

td:	s

ts:

F:

s 18) Material of the pulley

s	19)	Weight of the belt

mm/s

Ν

mm

kg

mm

mm

 mm

6) Max. velocity V:

7)	External force

8) Positioning accuracy of the work load

9)	Total weight of the work load and the table	Wa:

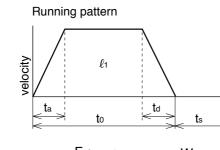
10) Power supply voltage

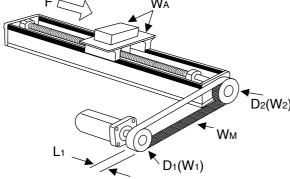
11)	Diameter of the ball screw	
٠.,	Diamotor of the ball colow	

12) Total length of the ball screw

13) Lead of the ball screw	
----------------------------	--

Traveling direction (horizontal, vertical etc.)





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

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

Request Sheet for Motor Selection

Request for motor selection **II**: Belt drive

N

kg

1. Driven mechanism and running data

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:
4)	Deceleration time	td:

5) Stopping time ts:

6) Max. velocity	V:	mm/
------------------	----	-----

7) External force F:

8) Positioning accuracy of the work load ± mm

WA:

10) Power supply voltage V

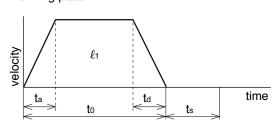
9) Total weight of the work load

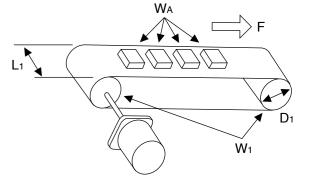
11) Weight of the belt W_M: kg

12) Diameter of the driving pulley D₁: mm

13) Total weight of the pulley W_1 : kg

Running pattern





L₁:

(or item 14) and 15))

Э

15)	Material of the	e pulle

16)	Traveling direction
10)	(horizontal vertical

	2. Other d	iata (Fili	the details o	n specific	mecnanism	and its	configurations	s in the to	ollowing	Diank.
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Company name :
Department/Section :
Name :
Address :
Tel:
Fax:
E-mail address:

Request Sheet for Motor Selection

Request for motor selection V: Turntable drive

1. Driven mechanism and running data

1)	Travel distance of the work load per one cycle	d ₁ :	deg

2) Cycle time

Dimensions of the work load

	Prism		Cylinder		
а	: mm	a:	mm		
b	: mm	b:	mm		
c	: mm	c:	mm		

pcs

(Fill in items 3) and 4) if required.)

3) Acceleration time

td:

R₁:

T₁:

5) Stopping time

6) Max. rotational speed of the table deg/s V: r/s

7) Positioning accuracy of the work load deg

WA: 8) Weight of one work load Driving radius of the center of gravity of the work

10) Diameter of the table D₁:

W₁: 11) Mass of the table

Diameter of the table support

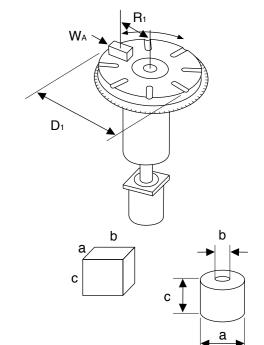
4) Deceleration time

13) Power supply voltage

Running pattern

15) Number of work loads

velocity		d ₁		
	ta	to	t _d t _s	time



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

kg

mm

mm

kg

 mm

٧

Company name :
Department/Section :
Name :
Address:
Tel:
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

17) Weight of the p	he pull
---------------------	---------

18) Width of the pulley

19) Material of the pulley

Traveling direction

(horizontal, vertical etc.)

D₂(W₂)

20) Weight of the belt

Running pattern

ta

16) Diameter of the pulley	D3:	mm	D4:	mm
17) Weight of the pulley	W 3:	kg	W4:	kg

WL:

td

Motor side

Belt side

mm

kg

time

D3(W3)

(Fill in items 3) and 4) if required.) (or item 18) and 19))

3) Acceleration time s 4) Deceleration time td: S

5) Stopping time ts:

V: mm/s 6) Max. velocity

F: 7) External force Ν Positioning accuracy of the 8) Work load mm

9) Total weight of the work load WA: kg 10) Power supply voltage ٧

11) Weight of motor side belt W_M:

kg Belt side Motor side Diameter of the mm D₂: mm

Weight of the W₁: kg W₂: kg pulley

(or item 14) and 15))

pulley

Width of the 14) L1: Material of the 15)





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

deg/s

kg

mm

mm

kg

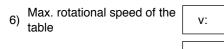
mm

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	4) if	required.)
(ı		iterns of	ana	T) !!	required.)

3) Acceleration time	ta:	s
4) Deceleration time	td:	S
5) Stopping time	ts:	s



(or)	V:	r/s
7) Positioning accuracy of the work load	±	de

- 8) Weight of one work load
- 9) Driving radius of the center of gravity of the work
- 10) Diameter of the table
- 11) Mass of the table
- Diameter of the table support
- 13) Power supply voltage

13) Power supply volta	age			V
		(Prism)	((Cylinder)
14) Dimension of the work load	a:	mm	a:	mm
	b:	mm	b:	mm
	c:	mm	c:	mm
15) Number of work lo	ads			pcs

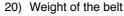
Motor side 16) Diamet

16) Diameter of the pulley	D ₂ :	mm	D3:	mm
17) Weight of the pulley	W2:	kg	W 3:	kg

(or item 18) and 19))

18) Wi	dth of the	pulley
--------	------------	--------

19) Material of the pulley



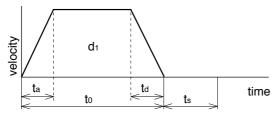
nm

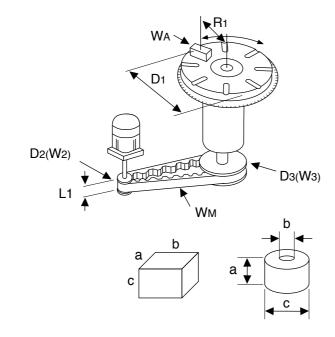
Turntable side

201	\ \A/-:	- 4 41	I II
2U,) Weight	or the	peit

W _M :	kg

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:

Request Sheet for Motor Selection

Request for motor selection VII: Roller feed drive

mm/s

mm

pcs

٧

mm

kg

1. Driven mechanism and running data

)	Travel distance of the work load per one cycle	ℓ ₁ :	mm	R
2)	Cycle time	to:	s	
	(Fill in items 3) and 4) if required.)			:
3)	Acceleration time	ta:	s	
)	Deceleration time	td:	s	

ts:

v:

F:

D₁:

 W_1 :

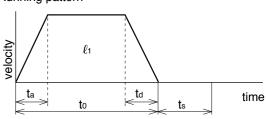
5)	Stopping time
6)	Max. velocity

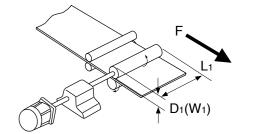
7)	External pulling force	

8)	Positioning accuracy of the
	work load

9)	Number of rollers
10)	Power supply voltage

11)	Diameter	of the	rollei





(or item 13) and 14))

е
(

14) Material of the roller	

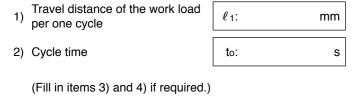
L₁:

2. Other data	(Fill the details on s	pecific mechanism	and its configuration	s in the following blank
---------------	------------------------	-------------------	-----------------------	--------------------------

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

Request for motor selection III: Driving with Rack & Pinion

1. Driven mechanism and running data



	(Fill in items 3) and 4) if required.)		
3)	Acceleration time	ta:	S
4)	Deceleration time	td:	S
5)	Stopping time	ts:	S
6)	Max. velocity	V:	mm/s
7)	External force	F:	N
8)	Positioning accuracy of the work load	±	mm
9)	Total weight of the work load	WA:	kg
10)	Power supply voltage		V

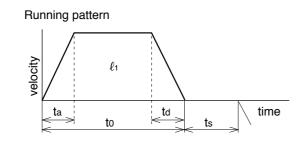
11) Diameter of the pinion

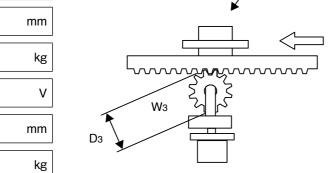
Traveling direction (horizontal, vertical, etc.)

12) Mass of the pinion

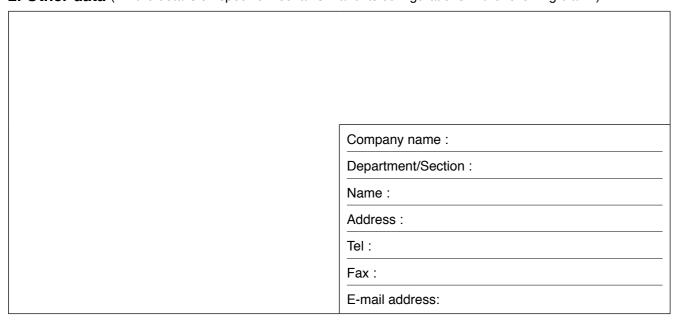
D₃:

W3:

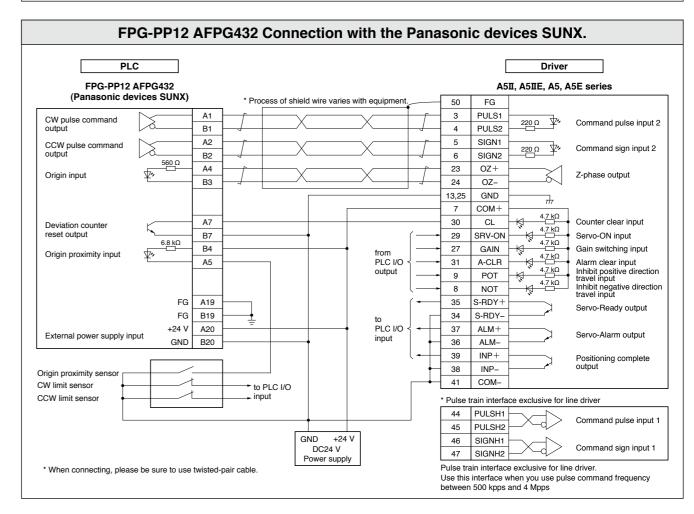


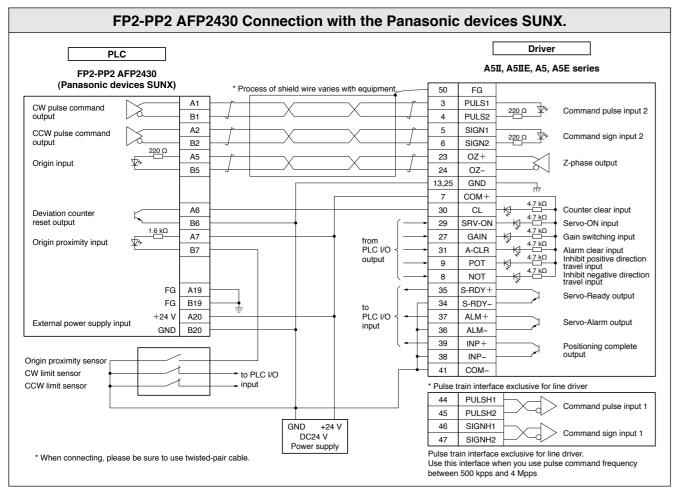


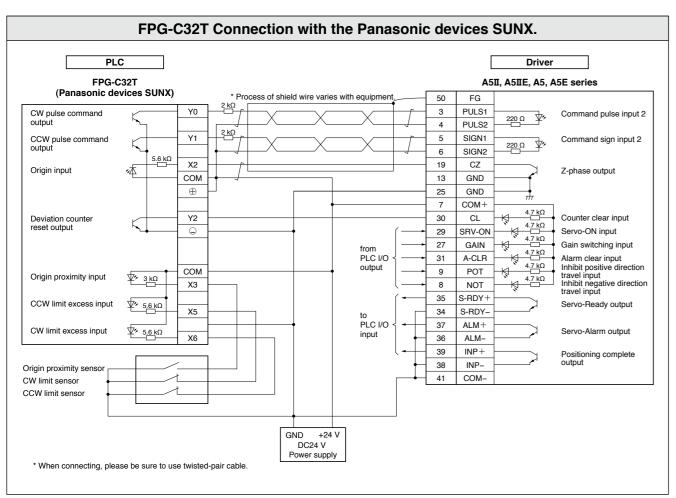
2. Other data (Fill the details on specific mechanism and its configurations in the following blank.)

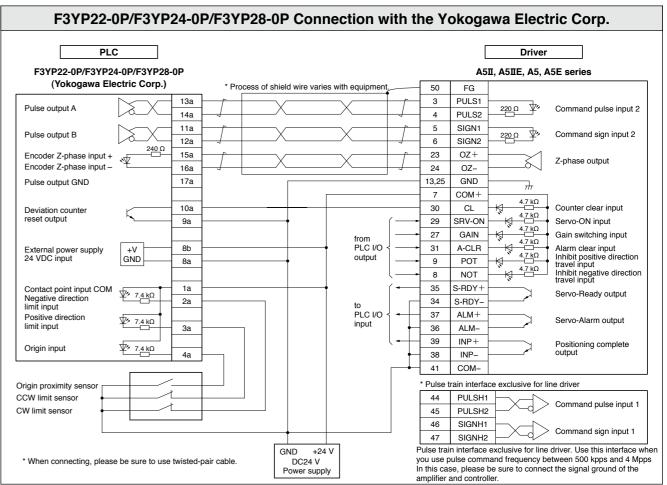


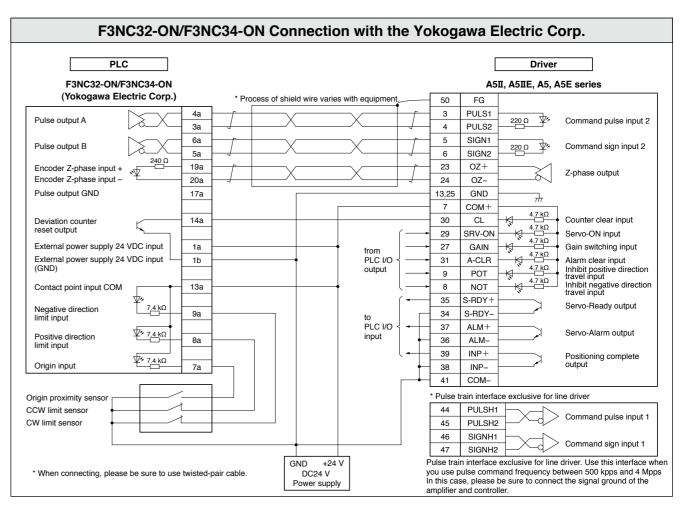
FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) Connection with the Panasonic devices SUNX. PLC Driver FP7-AFP7PP02T/L(2-axes) AFP7PP04T/L(4-axes) A5II, A5IIE, A5, A5E series (Panasonic devices SUNX) Process of shield wire varies with equipr PULS1 A1 A10 3 CW pulse command 220 Ω 💯 Command pulse input 2 B1 B10 PULS2 A2 A11 CCW pulse comma output 5 SIGN1 220 Ω 💯 Command sign input 2 B2 B11 SIGN2 3.9 kΩ A3 A12 07+23 Z-phase output Origin input (5 VDC) A4 A13 OZ-24 B3 B12 13,25 GND B5 B14 COM+ Servo-ON output 4.7 kΩ A7 A16 30 CL Counter clear input Deviation counter reset output B7 B16 29 SRV-ON Servo-ON input 3.6 kΩ B4 B13 27 GAIN 🙀 Gain switching input Origin proximity input 4.7 kΩ from PLC I/O A5 A14 31 A-CLR Alarm clear input 6.8 kΩ Inhibit positive direction travel input Inhibit negative direction travel input POT 😽 Limit excess (+) 4.7 kΩ A6 A15 8 NOT 35 S-RDY+ Limit excess ⊝ Servo-Ready output B6 B15 34 S-RDYto PLC I/O +24 V A20 A20 37 ALM+ Servo-Alarm output External power supply input GND B20 B20 36 ALM-INP+ 39 Positioning complete 38 INP-Origin proximity sensor 41 COM-CW limit sensor CCW limit sensor * Pulse train interface exclusive for line driver 44 PULSH1 Command pulse input PULSH2 45 GND +24 V 46 SIGNH1 Command sign input 1 DC24 V SIGNH2 47 Pulse train interface exclusive for line driver. * When connecting, please be sure to use twisted-pair cable Use this interface when you use pulse command frequency between 500 kpps and 4 Mpps

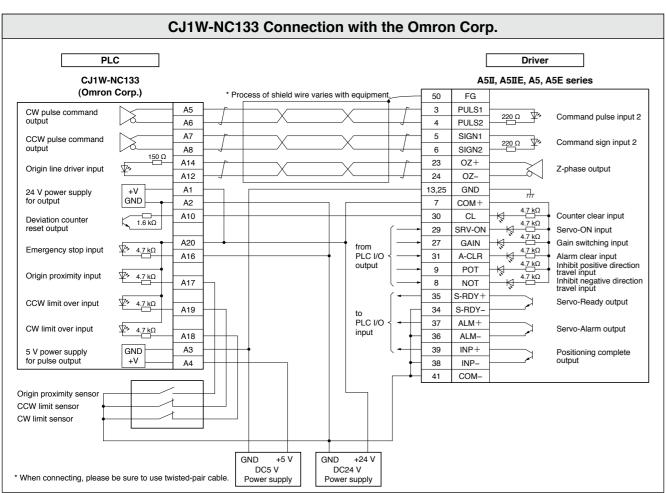


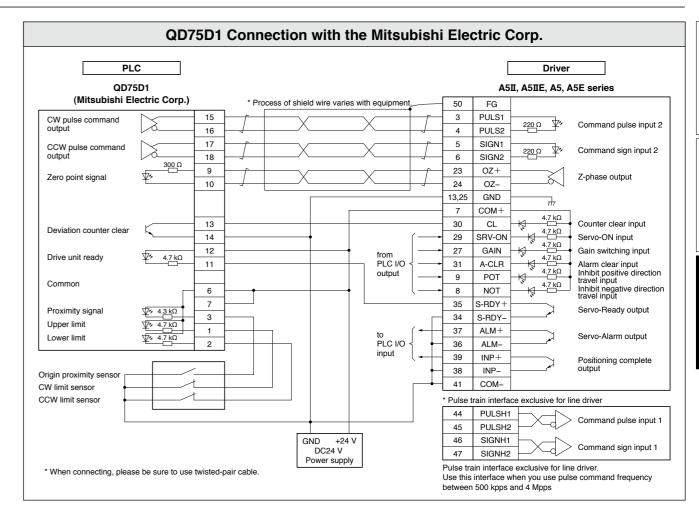


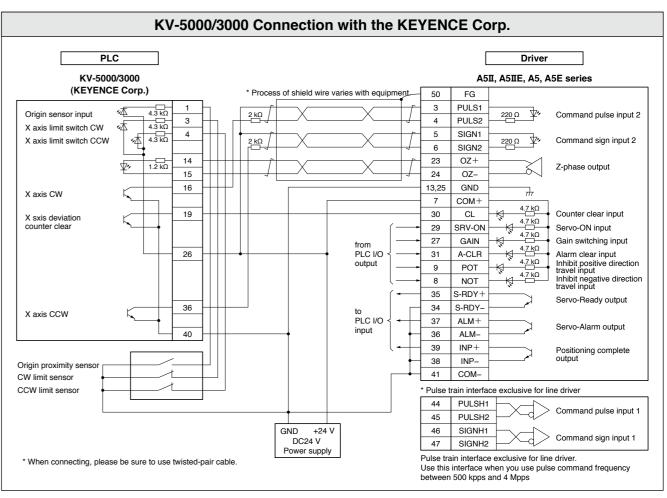








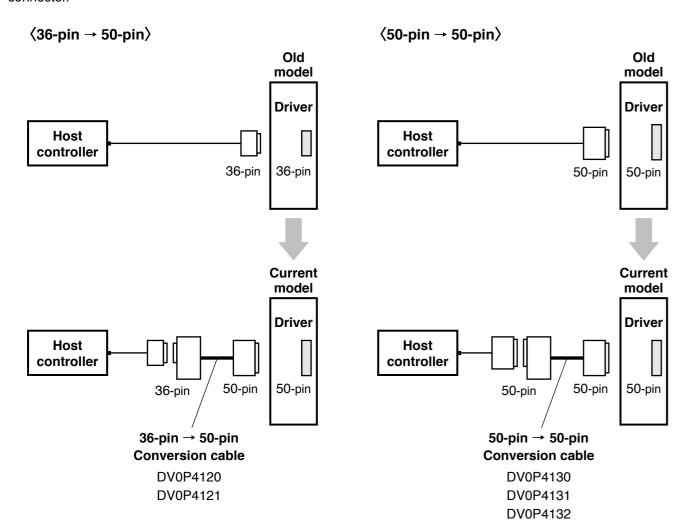




Driver and Controller

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	P.280
(36-pin)	Torque control	DV0P4121	F.20U
	Position control	DV0P4130	D 004
V series (50-pin)	Velocity control	DV0P4131	P.281
, ,	Torque control	DV0P4132	P.282

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Conversion Wiring Table

	DV0P4120			DV0P4121			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
2	24	Z-phase output	OZ-	24	Z-phase output	OZ-	
3	13	Signal ground	GND	13	Signal ground	GND	
4	19	Z-phase output	CZ	19	Z-phase output	CZ	
5	4	Command pulse input 2	PULS2	4	Command pulse input 2	PULS2	
6	3	Command pulse input 2	PULS1	3	Command pulse input 2	PULS1	
7	6	Command pulse sign input 2	SIGN2	6	Command pulse sign input 2	SIGN2	
8	5	Command pulse sign input 2	SIGN1	5	Command pulse sign input 2	SIGN1	
9	33	Command pulse inhibition input	INH	33	Command pulse inhibition input	INH	
10	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
11	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
12	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
13	30	Deviation counter clear input	CL	30	Deviation counter clear input	CL	
14	14	Speed command input	SPR	NC			
15	15	Signal ground	GND	15	Signal ground	GND	
16	43	Speed monitor output	SP	43	Speed monitor output	SP	
17	25	Signal ground	GND	25	Signal ground	GND	
18	50	Frame ground	FG	50	Frame ground	FG	
19	21	A-phase output	OA+	21	A-phase output	OA+	
20	22	A-phase output	OA-	22	A-phase output	OA-	
21	48	B-phase output	OB+	48	B-phase output	OB+	
22	49	B-phase output	OB-	49	B-phase output	OB-	
23	NC			NC			
24	NC			NC			
25	39	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.

^{*} For external dimensions, refer to P.197.

A5 Family Connection Between Driver and Controller

Replacing Old Model Servo Driver with MINAS A5II, A5 series

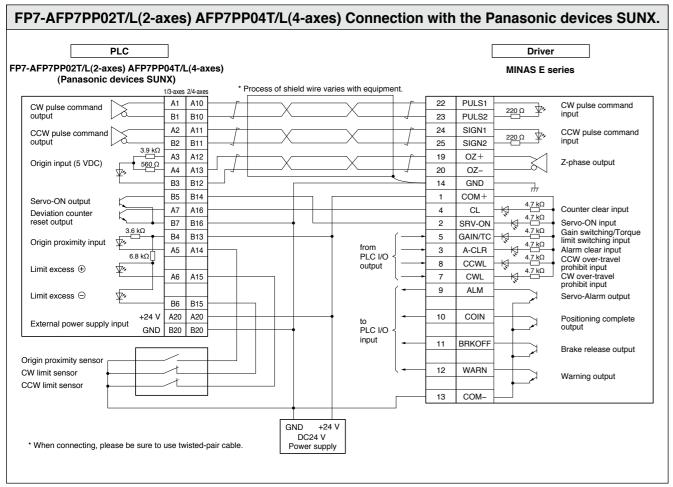
	DV0P4130			DV0P4131			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol	Pin No. on Current Model	Signal Name	Symbol	
1	8	CW over-travel inhibit input	CWL	8	CW over-travel inhibit input	CWL	
2	9	CCW over-travel inhibit input	CCWL	9	CCW over-travel inhibit input	CCWL	
3	3	Command pulse input 2	PULS1	NC			
4	4	Command pulse input 2	PULS2	NC			
5	5	Command pulse sign input 2	SIGN1	NC			
6	6	Command pulse sign input 2	SIGN2	NC			
7	7	Power supply for control signal (+)	COM+	7	Power supply for control signal (+)	COM+	
8	NC			NC			
9	NC			NC			
10	NC			NC			
11	11	External brake release signal	BRK-OFF+	11	External brake release signal	BRK-OFF+	
12	12	Zero-speed detection output signal	ZSP	12	Zero-speed detection output signal	ZSP	
13	13	Torque in-limit signal output	TLC	13	Torque in-limit signal output	TLC	
14	NC			14	Speed command input	SPR	
15	15	Signal ground	GND	15	Signal ground	GND	
16	16	CCW direction torque limit input	CCWTL	16	CCW direction torque limit input	CCWTL	
17	17	Signal ground	GND	17	Signal ground	GND	
18	18	CW direction torque limit input	CWTL	18	CW direction torque limit input	CWTL	
19	19	Z-phase output	CZ	19	Z-phase output	CZ	
20	NC			NC			
21	21	A-phase output	OA+	21	A-phase output	OA+	
22	22	A-phase output	OA-	22	A-phase output	OA-	
23	23	Z-phase output	OZ+	23	Z-phase output	OZ+	
24	24	Z-phase output	OZ-	24	Z-phase output	OZ-	
25	50	Frame ground	FG	50	Frame ground	FG	
26	26	Speed zero clamp input	ZEROSPD	26	Speed zero clamp input	ZEROSPD	
27	27	Gain switching input	GAIN	27	Gain switching input	GAIN	
28	NC			33	Selection 1 input of internal command speed	INTSPD1	
29	29	Servo-ON input	SRV-ON	29	Servo-ON input	SRV-ON	
30	30	Deviation counter clear input	CL	NC			
31	31	Alarm clear input	A-CLR	31	Alarm clear input	A-CLR	
32	32	Control mode switching input	C-MODE	32	Control mode switching input	C-MODE	
33	33	Command pulse inhibition input	INH	NC	Connect mode containing in par	0022	
34	NC	Command paloe illimolati impat	11111	NC			
35	35	Servo-Ready output	S-RDY+	35	Servo-Ready output	S-RDY+	
36	NC	Servo-rieady output	J-11D1+	NC NC	Servo-rieady output	O-HDT+	
37	37	Servo-Alarm output	ALM+	37	Servo-Alarm output	ALM+	
38	NC NC	Servo-Alaim output	ALIVIT	NC NC	Gervo-Alaim output	ALIVIT	
39	39	Positioning complete output	COIN+	39	Speed arrival output	AT-SPEED+	
40	40	Torque in-limit signal output	TLC	40		TLC	
40		1 0			Torque in-limit signal output		
	10	External brake release signal (-)	BRK-OFF-	10	External brake release signal (–)	BRK-OFF-	
/1 1	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-	
40	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	

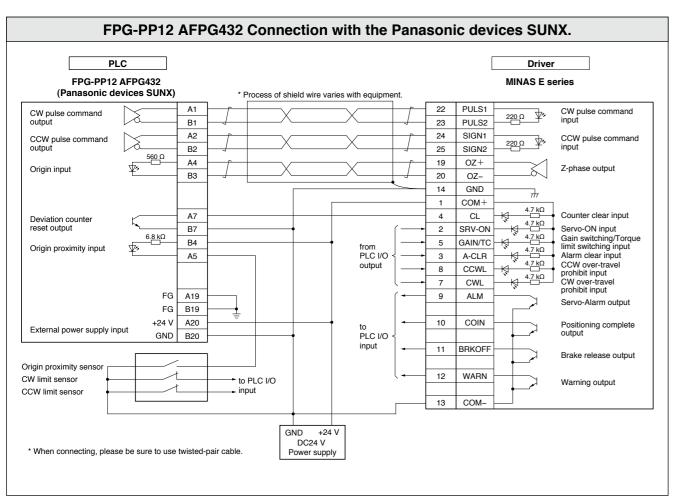
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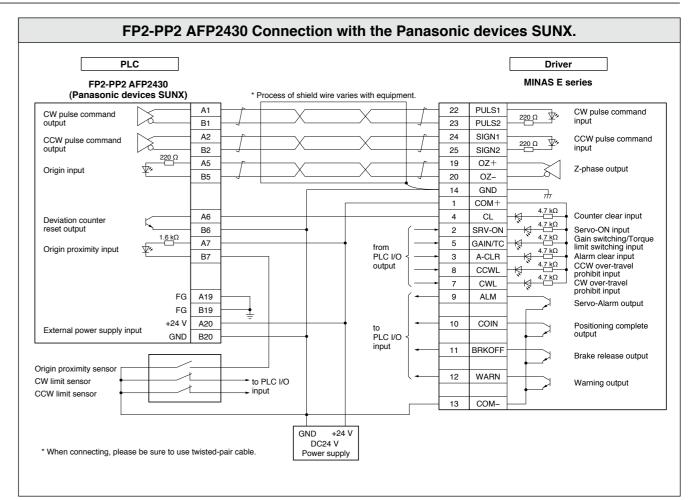
*	"NC"	is	no	connect.
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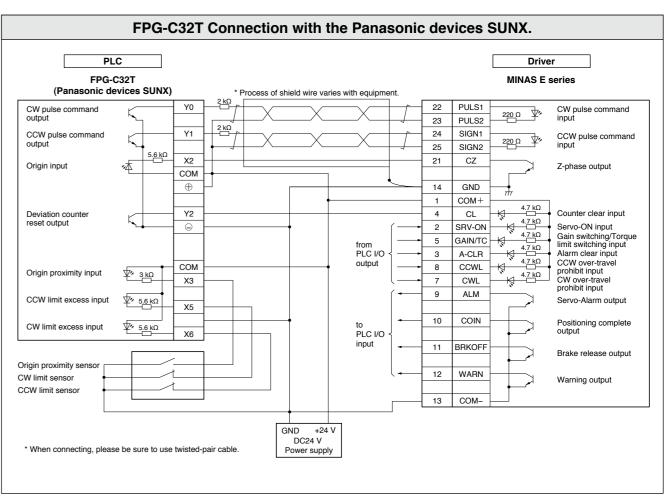
DV0P4132			
Pin No. on Old Model	Pin No. on Current Model	Signal Name	Symbol
1	8	CW over-travel inhibit input	CWL
2	9	CCW over-travel inhibit input	CCWL
3	NC		
4	NC		
5	NC		
6	NC		
7	7	Power supply for control signal (+)	COM+
8	NC		
9	NC		
10	NC		
11	11	External brake release signal	BRK-OFF+
12	12	Zero-speed 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
41	10	External brake release signal (-)	BRK-OFF-
	34	Speed arrival output (-)	AT-SPEED-
	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
	25	Signal ground	GND
46		3.10.3.00.10	3115
46 47	NC:		I
47	NC 48	B-phase output	OB+
	NC 48 49	B-phase output B-phase output	OB+

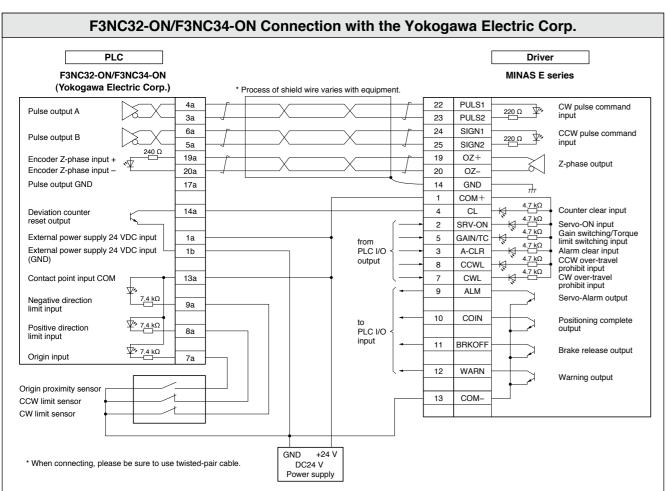
^{* &}quot;NC" is no connect.

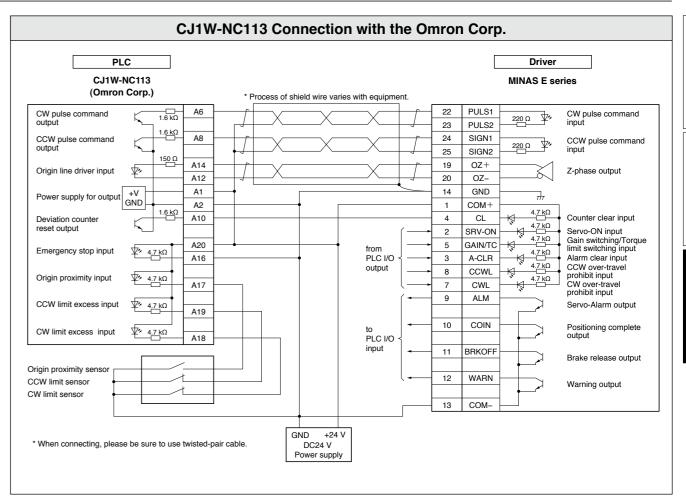


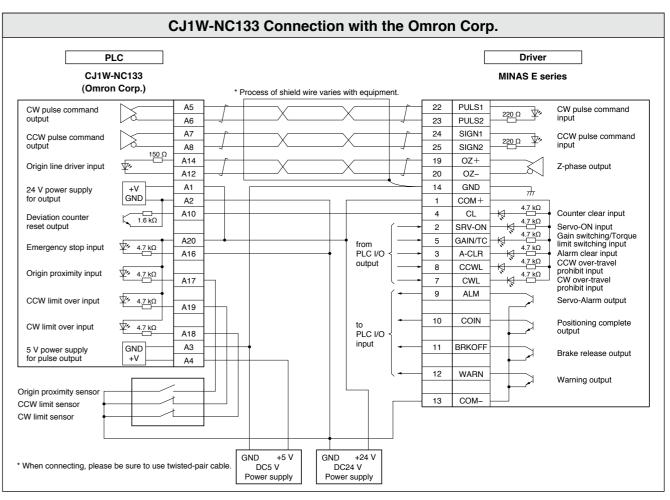












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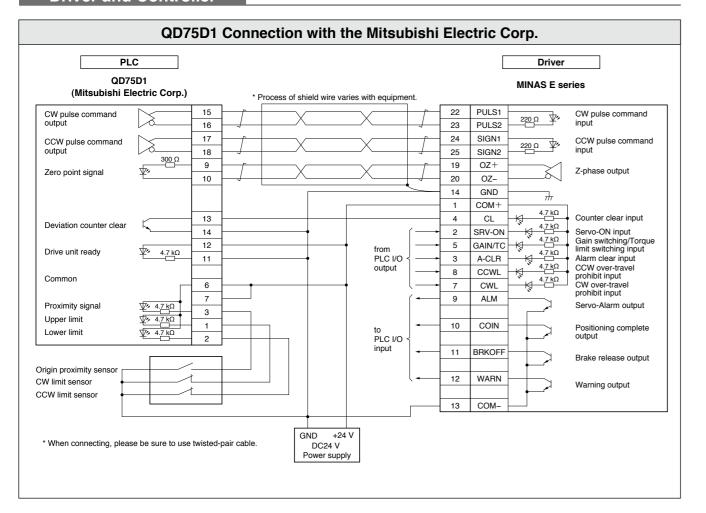
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A5 series Driver: A-frame

Title

Part No.

MADHT1105

MADKT1107

MADKT1505

MADKT1507

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MADKT1505E

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			Office 417, litera 43, Polustrovskiy avenu	.7.040.700.00.04				
Russia	Electroprivod Ltd. [Distributors]	St.Petersburg	Saint-Petersburg, Russia	+7-812-493-27-26				
			Web site http://www.electroprivod.ru					
	BOSTEK TEKNOLOJI GELISTIRME VE		10042 SOK.NO:10 A.O.S.B CIGLI-IZMIR	+90 232 433 8515				
			TURKEY	+90 232 433 8881				
	ROBOT SIST.SAN.TIC.A.S [Distributors]	Izmir	e-mail sales@bostek.com.tr					
	[Distributors]		Web site http://www.bostek.com.tr/					
Turkey			Des Sanayi Sitesi 104 Sokak A07 Blok N	0:02 +90-216-466-3683				
	Savior Kontrol Otomasyon		Yukarı Dudullu Ümraniye İstanbul Turkey					
	[Distributors]	Istanbul	e-mail info@savior.com.tr					
			Web site http://www.savior.com.tr/					
	Panasonic Industrial Devices Sales		Top Floor, South Wing, ChinaChem Glod					
	(Hong Kong) Co.,Ltd. (PIDSHK) [Sales office]	Hong kong	Plaza, 77 Mody Road, S.T.S. East, Kowlo HongKong	oon, +852-2598-9743				
	Panasonic Industrial Devices Sales		Floor 6, China Insurance Building, 166	+86-21-3855-2442				
China	(China) Co.,Ltd. (PIDSCN)	Shanghai	East Road LuJiaZui PuDong New Distric	t,				
	[Sales office]		Shanghai, China	+86-21-3855-2375				
	Panasonic Industrial Devices Sales (China) Co.,Ltd. (PIDSCN)	Shenzhen	8/F, Tower Three, Kerry Plaza, 1-1 Zhong	xinsi +86-755-8255-8791				
	[Sales office]	5511211011	Road, Futian District, Shenzhen, China					
			12th Floor, Ambience Commercial,	+91-124-6670400				
	Industrial Division,	Gurgaon,	Behind Ambience Mall, Gurgaon - 122002, Haryana, India	+91-124-6670338				
	Panasonic India Pvt Ltd. [Sales office]	Haryana	http://industrial.nanasonic.com/s					
	·		Web site compressors/fa-motors	arproductorHotolo-				
			Sardar Patel Ring Road, Near Bright Sch	100l, +91-79-39845300				
	Lubi Electronics	Gandhinaga,	Nana Chiloda, Dist.: Gandhinagar - 382330, Gujarat, Ind	+91-79-39845599				
	[Distributors]	Gujarat	Web site http://www.lubielectronics.com	10.70 000 10000				
India			1 .	+91-22-23455052				
	Luna Bearings	Mumbai,	 Bibijan Street, 2nd Floor, Moiz Manzi Mumbai - 400003, Maharashtra, India 	+91-22-23433032				
	[Distributors]	Maharashtra	Web site http://www.lunabearings.com	101 22-20721110				
			A/6, Plot No.74, Shree Ganesh Complex					
	Vesti Fleshiede Det 111	Mumbai, Maharashtra	Mumbai, Maharashtra	1 '	1 '	1 '	Behind Gupta Compound, Dapole Road,	+91-2322-001000
	Vashi Electricals Pvt. Ltd. [Distributors]						Mankoli Naka,	+91-2522-661620
	[Bhiwandi - 421305, Maharashtra, India Web site http://www.vashielectricals.com					
			Web site http://www.vashielectricals.com					

Country	Company Name	City	Address	TEL
[Category]		City	Address	FAX
W	Panasonic Industrial Devices Sales	Casul	6F DONG-IL Tower 38, Teheran-ro 114-gil,	+82-2-795-9600
Korea	Korea Co., Ltd. (PIDSKR) [Sales office]	Seoul	Gangnam-gu, Seoul, 135-851, Korea	+82-2-2052-1053
	Panasonic Industrial Devices Sales	.	12F, No.9, SongGao Rd., Taipei 110, Taiwan,	+886-2-2757-1900
Taiwan	Taiwan Co.,Ltd. [Sales office]	Taipei	R.O.C.	+886-2-2757-1977
	Panasonic Industrial Devices Sales Asia	Cinnanana	No 2 Dedek Courth Deed Cingenous 400000	+65-6390-3718
	Pte.Ltd. [Sales office]	Singapore	No.3 Bedok South Road Singapore 469269	+65-9435-6844
			2 Woodlands Sector 1 #03-25, Woodlands	+65-6751-5088
Singapore	Intermech Machinery Pte.Ltd. [Distributors]	Singapore	Spectrum 1 Singapore 738068	+65-6759-2122
	[Distributors]		Web site http://www.intermech.com.sg	
	B	17. 1	No.14, Lorong Sanggul 1C, Bandar Puteri,	+60-3-5161-7876
Malaysia -	Panamech Machinery Sdn Bhd [Distributors]	Kuala Lumpur	41200 Klang, Selangor Darul Ehsan	+60-3-5161-7136
			Web site http://panamech.com.my/	
ivialaysia	Panamech (PG) Sdn Bhd [Distributors]		Sri Relau Komplex, Unit 1-3-11, Persiaran Bukit Jambul 1, 11900 Penang	+60-4-643-8266
		Penang		+60-4-645-1639
	[2-3-3-3-3-3]		Web site http://panamech.com.my/	
			73 Soi Ladkrabang 30 Ladkrabang	+66-2181-2299
	Premier Automation Center Co.,Ltd. [Distributors]	Bangkok	Ladkrabang Bangkok 10520	+66-2181-2288
Thailand	[Simulations]		Web site http://www.premier-ac.co.th	
Inaliano		Bangkok	3 Soi Charoenrat 10, Charoenrat Road.,	+66-2291-9933
	Plenty Island (Thai) Co.,Ltd. [Distributors]		Bangkhlo, Bangkhorlaem, Bangkok 10120	+66-2291-2065
	[Distributions]		Web site http://www.plenty.co.th	
		Surabaya		+62-31-843-8844
	PT. Handal Yesindo Sejahtera [Distributors]		Jl. Raya Kutisari 8A, Surabaya, Indonesia	+62-31-841-4333
l	[Distributors]		Web site http://www.handalyesindo.com	
Indonesia			Jl. Prof. Dr. Latumenten Grogol Permai blok	+62-21-564-9178
	PT.Riasarana Electrindo [Distributors]	Jakarta	D No. 8-15 Jakarta 11460, Indonesia	+62-21-566-7405
	[Distributors]		Web site http://www.risacorps.com	
			136 Calbayog Street, Mandaluyong City,	+63-2-881-3636
Philippines	Movaflex Designs Unlimited, Inc. [Distributors]	Manila	Metro Manila, Philippines.	+63-2-998-3881
	[Distributors]		Web site http://www.movaflex.com/	